



REPORT TITLE: **ANNUAL REPORT FOR EL1/2015 AVOCA WEST COAL PROJECT**

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AUTHOR: **MARK BIGGS**

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EXECUTIVE SUMMARY

Junction Coal Pty Ltd has held exploration tenure EL/2015 for five (5) years. Exploration and evaluation since grant have centred on areas in and around the historical Stanhope, Fenhope, Mt Christie, and Bonneys Plains coal mines north and west of the Avoca township in the Midlands region of Tasmania. This is the 5th Annual and Final Report for EL1/2015.

Activity during this final year focussed on completion of the geological model and resource estimation. A total of 15.2Mt of 2012 JORC Standard Inferred Resources was estimated in the Stanhope model area. This includes the removal of previously mined coal (0.585Mt). In the Bonneys Plains model area an Exploration Target¹ of a range between 2.0 to 8.5Mt was estimated mostly in the Delta seam (Table 1 and Table 2). This Exploration Target is in addition to the JORC Inferred Resource mentioned above and was based on the same Minescape model as the resources in Table 1, but which fell outside the limit of the Inferred mask. It is mostly centred on the five (5) mask areas spread about the Bonneys Plains area. Details are documented in JORC Table 1 (Appendix1). The resources calculated were less than originally anticipated.

Table 1: Summary of Inferred Resource Estimates on EL1/2015 Avoca West

Formation	Seams	Inferred Tonnage (Mt)	Raw Ash % adb	Raw Volatile Matter (% adb)	Raw Crucible Swell Number	Raw Calorific Value MJ/kg GAD	Raw Total Sulphur % adb
Avoca Coal Measures	Alpha, Beta, Stanhope	11.5	33.0	24.1	1	23.25	0.403
Avoca Coal Measures	Delta	3.7	17.4	25.8	5	28.20	0.270
Total:		15.2					

Table 2: EL1/2015 Summary of Exploration Targets April 2020

Formation	Seams	Exploration Target Range (Mt)	Raw Ash % adb	Raw Volatile Matter % adb	Raw Calorific Value MJ/kg GAD	Raw Crucible Swell Number
Avoca Coal Measures	Beta-Iota	2.0 - 8.5	25.1-48.3	24.5-32.6	11.2-28.4	0-4

Over the five (5) years that the tenure was held, a database and model was established based entirely on historical data. Georeferencing hand-drawn maps and data to the MGA94 zone 55 coordinate grid took considerable time and effort to achieve credible locations. Cross sections generated from the geological and raw coal quality model clearly showed that the Fenhope, Stanhope, and New Stanhope seams are in fact the same seam. The lack of downhole geophysics

¹ It should be noted that the Exploration Target tonnage range quoted above are conceptual in nature and there has been insufficient exploration to define a coal resource. Although a preliminary analysis was undertaken, insufficient data exists to confidently correlate coal seams. It is uncertain whether further exploration may lead to the reporting of a JORC-standard resource however there is some evidence to support the current exploration tonnage calculations, and the sufficient coal thicknesses interpreted from historic drilling to warrant further investigation in some areas.

and new drilling has hampered high confidence correlation in the overlying and underlying seams. Despite the intermittent 93-year history of coal mining, only JORC Resources to the confidence level of Inferred have been estimated.

Junction Coal has decided not to renew the tenure. The small resource base has not excited investors and at current prices (April 2020) for Thermal Coal the economic viability of the project is marginal. Adverse reporting of coal exploration in October 2019 by ABC Tasmania and the uncertainty of the Covid19 pandemic affecting fieldwork and access has all contributed to the decision.

TABLE OF CONTENTS

Executive Summary	2
Introduction	6
Tenure Details	6
Exploration Rationale.....	9
Regional Geology	9
Local Geology	10
Coal Quality.....	12
Review of Previous Work	13
Year 1:.....	13
Year 2.....	16
Year 3.....	17
Year 4.....	20
Exploration Completed during the Reporting Period	23
Seams Modelled	24
Raw Coal Quality Model	26
Clean Coal Quality Model.....	27
Resource Estimates.....	28
Discussion of Results	30
Conclusions	30
Environmental Management.....	30
Expenditure	31
References	32
Appendix 1: JORC CODE 2012 Table 1.....	35
Section 1: Sampling Techniques and Data Table.....	35
Section 2: Reporting of Exploration Results.....	38
Section 3: Estimation and Reporting of Mineral Resources	51
Appendix 2: Avoca West Model Completion Certificate.....	56
Appendix 3: All Modelled Holes & Channel Samples.....	57
Appendix 4: Points of Observation.....	59

TABLE OF FIGURES

Figure 1: Location of EL1/2015	7
Figure 2: EL1/2015 Tenement.....	8
Figure 3: Generalised Stratigraphic Column - Fingal Tier Area	10
Figure 4: Examples of Core Photography – DOM Bonney’s Plains No. 1	14
Figure 5: Graphical Log of Bonney’s Plains No. 1 (first 100m only).....	15
Figure 6: North-West to South-East Cross Section	16
Figure 7: Avoca West Minescape Model Seam Statistics	18
Figure 8: Stanhope Seam Thickness Isopach (m)	19
Figure 9: Location of Proposed Exploration Boreholes at Stanhope.....	21
Figure 10: Location of Exploration Boreholes at Bonney’s Plain’s	22
Figure 11: Minescape Modelling Schema.....	24
Figure 12: Location of Boreholes and Modelled Areas	25
Figure 13: Raw Ply Statistics.....	26
Figure 14: Raw Composite Statistics.....	26
Figure 15: Float/Sink Analysis for SPI DDH001 Composite Statistics	27
Figure 16: EL1-2015 Resource Masks.....	28

LIST OF TABLES

Table 1: Summary of Inferred Resource Estimates on EL1/2015 Avoca West.....	2
Table 2: EL1/2015 Summary of Exploration Targets April 2020	2
Table 3: Tenure Details.....	6
Table 4: Classification of Seam Intervals – Fingal with Avoca Coal Measures.....	11
Table 5: Proposed Drill Holes Avoca West.....	22
Table 6: Summary of Inferred Resource Estimates on EL1/2015 Avoca West.....	29
Table 7: EL1/2015 Summary of Exploration Targets April 2020	29
Table 8: Year 5 Expenditure Statement for EL1/2015	31

INTRODUCTION

TENURE DETAILS

EL1/2015 was granted to Junction Coal Pty Ltd on the 23rd April 2015 for a period of five (5) years (Table 3). Junction Coal Pty Ltd is a privately-owned company which holds 100% share of the tenement. EL1/2015, known as the Avoca West Coal Project, lies to the north-west of the township of Avoca (Figure 1) whilst the larger centre of Campbell Town lies approximately 20km to the south-west. The tenure covers an area of 82km² (Figure 2). This report covers the 5th and final year of the tenure.

A 1,067mm gauge railway used only for freight purposes links the licence area with Hobart and the north coast centres of Bell Bay, Devonport and Burnie. A network of mainly unsealed roads and numerous logging and farm roads provide reasonable access to most of the licence area. Access for drilling equipment to specific sites generally requires the construction of new roads, the maintenance of which has been reported by previous explorers as difficult during periods of heavy rainfall.

The topography of the EL is dominated by an extensive plateau with an average elevation of 650m above sea level. River valleys, generally bounded by steep scarps, have been incised to elevations of 100- 200m above sea level. The basic topographic form of the area reflects the widespread occurrence of thick hard dolerite cover which has been removed only where there has been strong and persistent fluvial erosion. The coal-bearing sequence appears to have been eroded along the watercourses of Buffalo Brook and Hercules Creek. Buffalo Brook flows from the centre of the project area towards the south.

The temperature and rainfall are significantly influenced by the local topography. In the valleys rain falls on approximately 100 days per year, but on the plateau, there are about twice as many rainfall days. Almost all rainfalls during the months May to November, the highest rain fall being during July and August. Average winter temperatures range from -5 °C to 5 °C, and snowfalls are common above 600m from June to August.

Combined with rugged topography, the high rainfall increases the difficulty and cost of exploration operations during the winter months. Access can be maintained much more economically during summer and whenever practicable drilling is confined to the November to May period.

Table 3: Tenure Details

Tenure	Status	Principal Holder	Grant Date	Expiry Date	Size (km ²)	Category
EL1/2015	Granted	Junction Coal Pty Ltd	23-APR-2015	22-APR-2020	82	2. Fuel Minerals

Figure 1: Location of EL1/2015

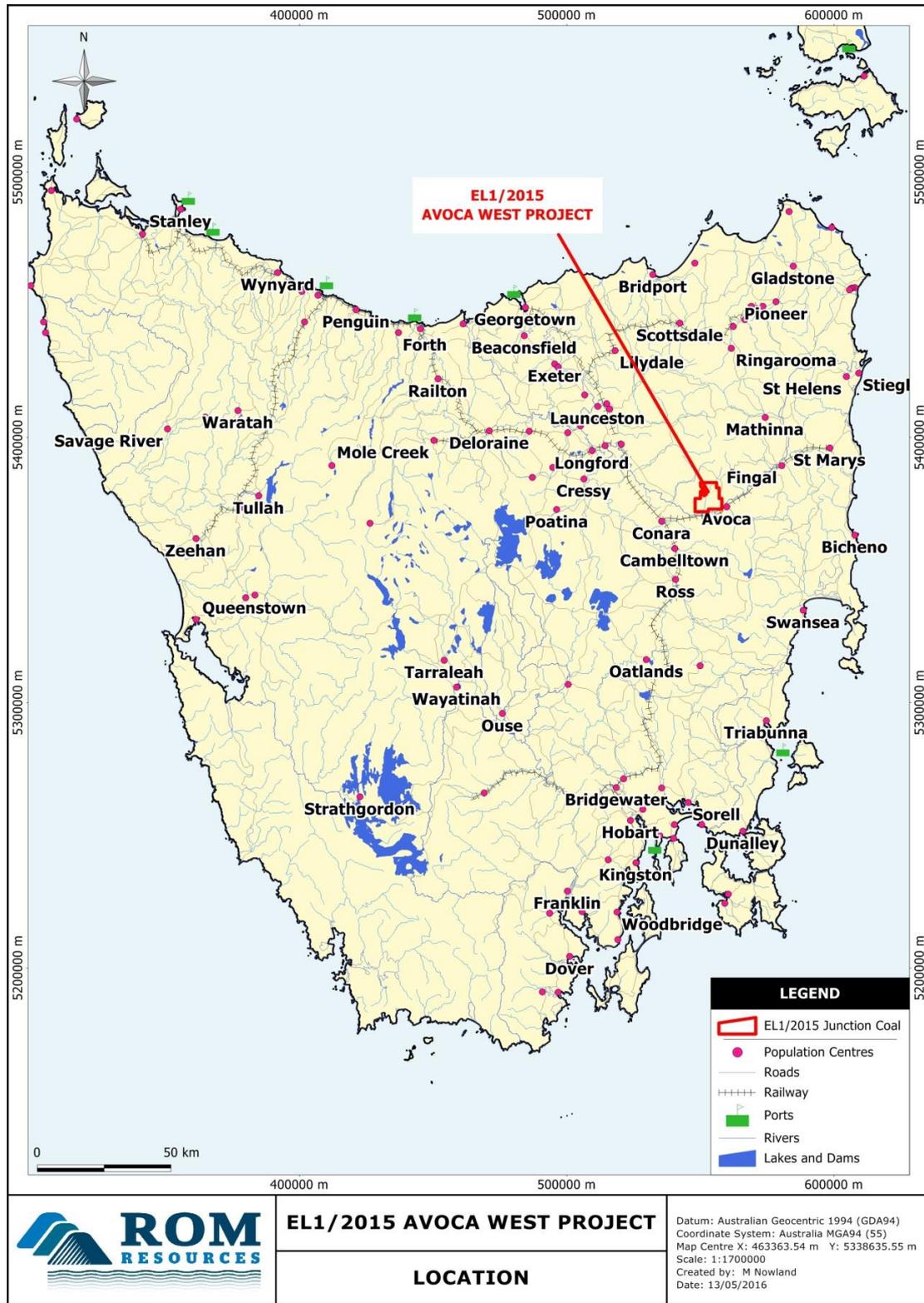
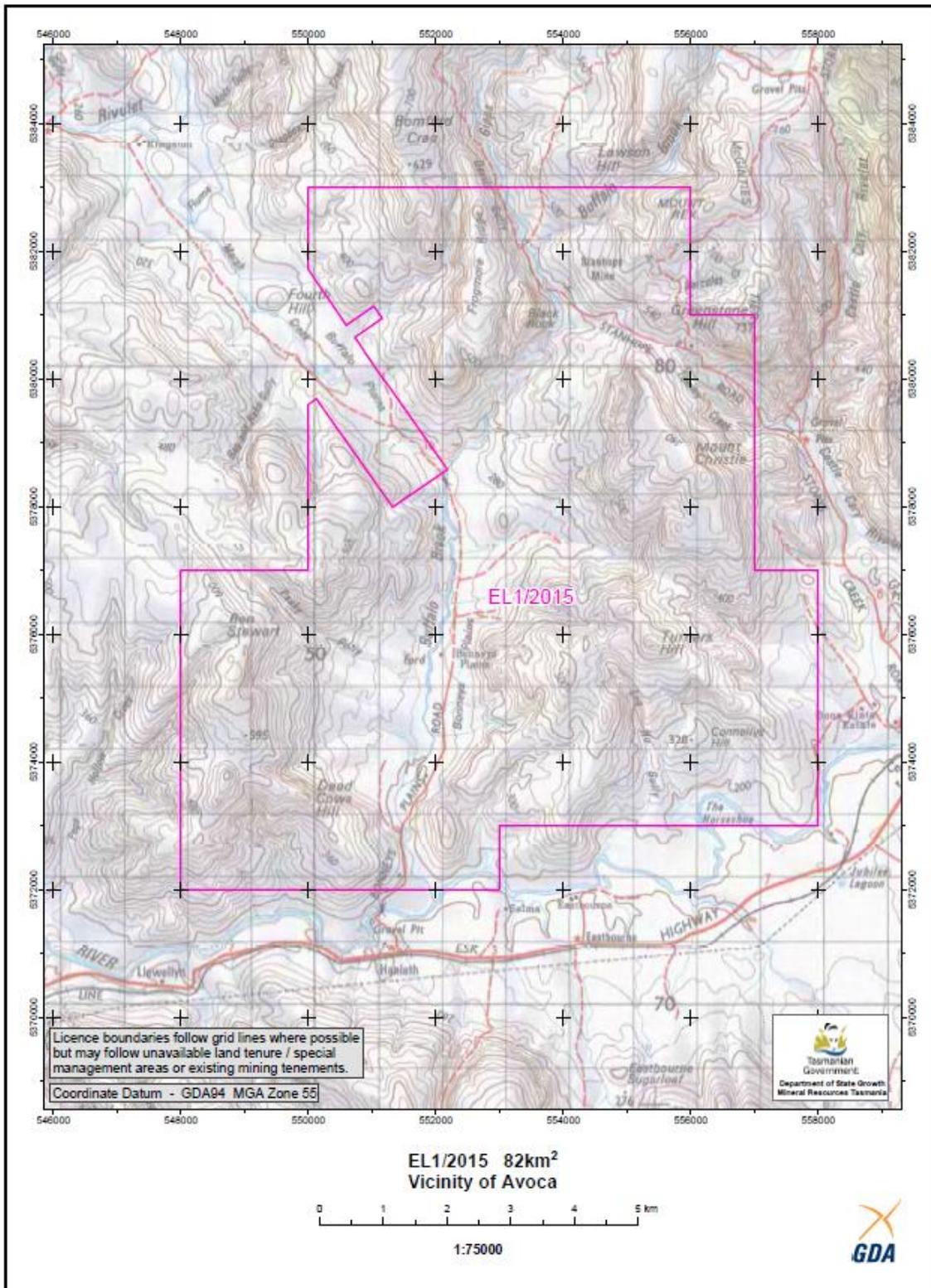


Figure 2: EL1/2015 Tenement



(Mineral Resources Tasmania, 2015)

EXPLORATION RATIONALE

The Avoca West Coal Project (EL1/2015) covers outcrop and subcrop of coal measures mined since 1905 on the western margin of the Fingal-Mt Nicholas Coalfield in the Midlands Region of Tasmania.

Although no mining is currently taking place, the area has a ninety-three (93) year history of intermittent coal mining for largely thermal and industrial purposes, at small annual tonnages for a total just under 585,000t mined. Historical mining exploited three (3) of the eight (8) seam groups present within the tenure, however the majority of coal mined came from the Stanhope seam.

Junction Coal Pty Ltd's original objectives for EL1/2015 Avoca West were to post a maiden Indicated or Inferred Resources to the 2012 JORC Code. Historical drilling around the Avoca region has defined a known area of coal seams and has provided some basic data on coal quality. Previous exploration was sporadic with disparate databases created by explorers. The priority task was to combine all data into a standard coal mine planning database and produce a coherent regional structural model of the coal-bearing strata and the coal seams.

An initial literature review of the previous mining and exploration found some obscure references to some of the seams having raw crucible swell numbers (CSN) as high as 6, whereas most focus was on the mined Fenhope and Stanhope seams which are only suitable for thermal products (CSN <1).

Potential investors requested detailed coring, sampling and laboratory testing be undertaken in these seams, before a scoping study could be completed. An EDGI grant to assist in conducting exploration drilling was won in 2018, but ultimately never used. The grant was to partially assist in carrying out the previously prepared large diameter drilling program as confirmation or not that the coking properties of the Delta and Gamma seams are proved (to enable a semi-soft coking product), would be a major revelation for coal exploration and mining in Tasmania. A small operation of 1-2Mt per annum could be sustained if a large enough resource base could be established (15-25Mt). It should be noted that the previously mined Merrywood Coalfield, whilst untenured, is <20km away and could provide a raw product feed (satellite pit) to maintain production.

REGIONAL GEOLOGY

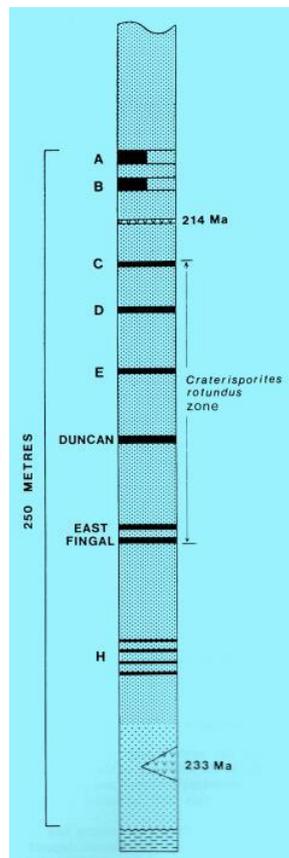
No changes to the regional geology have occurred since previously reported. Please refer to previous Annual Reports (Biggs & Nowland, 2016), (Biggs, 2017, 2018 and 2019), where it has been comprehensively documented. It is also reported in Appendix 1 (JORC Table 1).

LOCAL GEOLOGY

In the Avoca-Fingal-Mt Nicholas coalfields, there are eight (8) major seams identified by previous explorers. Correlation of coal seams is difficult, as they are discontinuous or lenticular in character, often with numerous stone bands and varying seam thickness over several hundred metres (Morrison and Bacon, 1986). Figure 3 shows a generalised section of the coal intersections in the Fingal Tier area. An analysis of the potential of the coal deposit hosted in each of the seams has been tabulated along with historical nomenclature (Table 4), largely taken from Threader (1968), Threader and Bacon (1983), and Bacon (1991).

The latest model (2020) has revealed that whilst these coalfields are correlatable there are some differences. Whilst trying to avoid further confusion with nomenclature it was decided to retain the historical names as much as possible. The Stanhope, New Stanhope and Fenhope seams which have all been mined and reported separately have shown through correlations across many east-west and north-south cross-sections to be the same seam and have been renamed as the Stanhope Seam. However due to the fact that most of the coal seams in the Avoca West project area still have not been fully geophysically logged to identify each coal seams unique signature along with their coal quality analysis, the nomenclature, identification and correlation of seams may still be subject to change.

Figure 3: Generalised Stratigraphic Column - Fingal Tier Area



Modified after (Morrison & Bacon, 1986)

Table 4: Classification of Seam Intervals – Fingal with Avoca Coal Measures

2020 Model	Fingal	Historical Names	Descriptikon
Alpha	Seam A	Alpha	This seam is generally thin; 1-3m of interbedded dull coal and carbonaceous mudstone, non-carbonaceous mudstone, and claystone in bands ranging from a few centimetres to 0.5 - 1m thick. There are no working sections in any of the Seam 'A' intervals sampled at Fingal by the Depart. of Mines (as a working section at that time was defined as an interval of coal greater than 1.5 m thick with an ash content of less than 40%).
Beta	Seam AL		The A Seam splits at Fingal Tier up to four seams (Threader & Bacon, 1983). At Avoca there is two distinct seams. Thicknesses of the banded coal seam ranges from 0.1 - 3.5 averaging 1.3m. Not mined underground but mined accidentally in the Merrywood Coal open-cut.
Stanhope	Seam B	Beta/ Stanhope/ New Stanhope/ Fenhope	This seam is an interbedded coal/non-coal sequence similar but thicker than seam 'A'. It is typically a 1-5m thick coal seam variously banded averaging 2.44m. Graphic logs of the coal intersection show the interbedded nature of the seam. Whilst at Fingal there are very few working sections, it has generally been reported (Bacon, 1991) that the Stanhope Seam is a correlative of the 'B' seam. This was the seam mined underground at Old and New Stanhope, Fenhope and Mt Christie Collieries.
Gamma	Seam C	Gamma	This seam has many interbedded mudstone and claystone bands and is commonly 0.5 - 3m thick, with thicker sections common. Seam 'C' is particularly well-developed along the front of the Fingal Tier east of the Mitchell Fault. Unfortunately, these coaly intervals of great thickness contain no working sections in seam 'C'. At Avoca. The seam averages 0.9m
Delta	Seam D	Delta	Seam D is commonly 1 - 2m thick averaging 1.7m, with only a few mudstone and claystone bands. Generally, the ash content ranges from 17 - 35%, but there are only a few working sections due to the thickness of the seam. This seam has been worked at Mt Christie and Bonney Plains Adits and may have some limited coking potential.
Eta	Seam E	Eta	Seam E is most commonly 1m thick and in many holes it is represented by a mudstone horizon. There are no working sections in seam 'E' in the holes drilled by the MRT at Fingal. It averages only 0.4m at Avoca.
Theta	Seam F	Duncan Seam/ Theta	This is the main target coal seam of the Fingal Mt Nicholson Coalfields, and has been extensively worked in the area. Typically, the seam consists of 2 - 3m of dull coal with minor clay and mudstone partings. The raw ash content is approx. 30% and the Specific Energy approx. 22-24 MJ/kg. It is poorly represented at Avoca West, averaging only 1m.
Iota	Seam G	The East Fingal Seam/ Iota	The East Fingal Seam is like the Duncan seam but in most of the borehole intersections was found to be split into 2 seams with a varying interburden. Both the upper and the lower split are 1 - 2m thick each. This seam is moderately developed at Avoca, averaging 0.7m.
Kappa	Seam H	Kappa	Seam H is commonly split into 2 thin seams, each usually less than 1m thick but averaging 0.4m. The seam is only poorly developed, being represented by a mudstone bed in at least half the holes drilled. Coal seams like this were logged in DOM Bonneys Plains 1.

COAL QUALITY

Coal from all economic seams in the region could be regarded as a high volatile bituminous steaming coal with medium to high inherent ash and low sulphur (Bacon, 1983) and (Patterson & Ward, 1982).

The variation in specific energies observed is largely due to ash and moisture content variation. A linear regression of all Mt. Nicholas-Fingal Coalfields specific energy and ash/moisture data gives the following air-dried (ad) specific energy to air-dried (ad) ash/moisture relationship:

$$\text{Specific Energy (MJ/kg)} = 31.49 - 0.33 (\text{Ash} + \text{Moisture})$$

The relationship appears to hold well for both washed and raw coals, with an overall correlation coefficient of 0.96 (Bacon, 1991). In general Triassic Tasmanian coals have a moderately-low specific energy relative to their rank and ash. This characteristic results from the very high proportion of inertinite which the coals contain, inertinite having a lower specific energy than vitrinite or liptinite (Patterson & Ward, 1982). In the Avoca West area, coal has an inherent ash content of 15-35%, indicating a steady influx of clastic material into the peat swamps during formation. The high inertinite composition of Tasmanian coals can be explained by frequent drying and partial oxidation of peat deposits (Morrison and Bacon, 1986).

Dolerite intrusions can increase the rank in parts of the Tasmanian coal fields. In some cases, the mean maximum vitrinite reflectance has been increased from ~0.57% up to 3.6% (Morrison and Bacon, 1986).

Twelvetreets (1906) and Hills et al (1922) reported that the “D” seam at Mt Christie and possibly Bonneys Plains had adequate coking properties but did not list laboratory analysis. One (1) stockpile sample by Western Mining reported a CSN of 6.0, whereas most of the Stanhope seam reports CSN’s of 0 to 1.0.

REVIEW OF PREVIOUS WORK

Previous Investigations by other explorers and third parties has been reported in full in Year 4's Annual Report (Biggs, 2020).

Work conducted by Junction Coal Pty Ltd during the life of EL1/2015 tenure is summarised below:

YEAR 1:

No onsite exploration or other field work was planned or conducted within the boundaries of EL1/2015. Geological consultant ROM Resources on behalf of Junction Coal Pty Ltd began a desktop study of EL1/2015. This included downloading all open file historical company data available on the Mineral Resources Tasmania (MRT) website covering the area of the tenement and a 10km zone surrounding the exploration licence. A significant amount of data was compiled. A geological database has been created for the Avoca West Project in the mine planning software Minescape GDB. A definitive collar file has been collated from the historical company data and this has been loaded into the database. This task took considerable time as many boreholes had to be registered in the correct coordinate system from hard copy plans. Lithological logs have been encoded where available and these have also been loaded to the database, in CoalLog format (Larkin & Green, 2012).

During June 2015, ROM Resources geologists attended the MRT core shed in Hobart and logged the top 100m of the historical stratigraphic borehole, DOM Bonney's Plains No. 1, as this detailed information was either missing or unavailable from any historical report or data. As a trial of the newly established core photography facility at the MRT core shed, photos of the top 100m were taken of the core trays of Bonney's Plains No. 1 (see Figure 4 as an example). The lithological data logged was initially encoded to a csv ASCII file. This file was then loaded to the log plotting software, Strater and a graphical log of the first one hundred (100) metres was created (see Figure 5). An English Log (lithology type only, see Appendix 1) of the entire borehole was produced from the geological logging software, Logcheck after combining all the logged data available for Bonney Plains No. 1. This combined dataset was then loaded to the GDB geological database where it was correlated with surrounding boreholes before modelling.

Correlation and modelling of the coal seams commenced. As there was no geophysical logging available for Avoca West (only hardcopy analogy recordings of very poor quality (Western Mining Corporation, 1977) priority were given to the encoding and validation of historical coal quality data, so that seam composites can be generated during the modelling process. Spitfire Resources recorded in their 2010 drilling master that eleven (11) of their boreholes were geophysically logged, but no downhole plots or LAS were ever provided on open-file. High priority was also given to the registering and digitizing of the old underground and open-cut mine plans, to determine the magnitude of potentially remaining insitu resources in these areas. Furthermore, it was planned to digitize faults intersected during mining from these drawings. An initial perusal of the available historical data suggests that a very small indicated and a larger Inferred Resource Estimate is possible. Considerable additional documentation will be required to complete reporting that

satisfies the 2012 JORC Code. Previous non-JORC resource estimates have ranged from <1 to 10.5Mt (Noldart, 1975); (Bacon, 1991).

Upon databasing all coal intervals greater than 20cm and all dolerite intervals, cumulative thickness, top of coal and dolerite thickness will be calculated as a preliminary modelling step. Following this, four (4) grids will be initially generated, using a suitable coal mine planning package:

- Top of First Coal (m)
- Cumulative Coal Thickness (m)
- Average Coal Thickness (m)
- Dolerite Thickness (m)

Grids were generated to the extent of the tenement areas using minimum curvature gridding method and a 100 x 100m mesh size. This process is a precursor to the generation of cross-sections and structure contour and isopach plans to enable seam correlation(s) to take place. An example of a correlated cross section is shown in Figure 6.

Figure 4: Examples of Core Photography – DOM Bonney's Plains No. 1





Figure 5: Graphical Log of Bonney's Plains No. 1 (first 100m only)

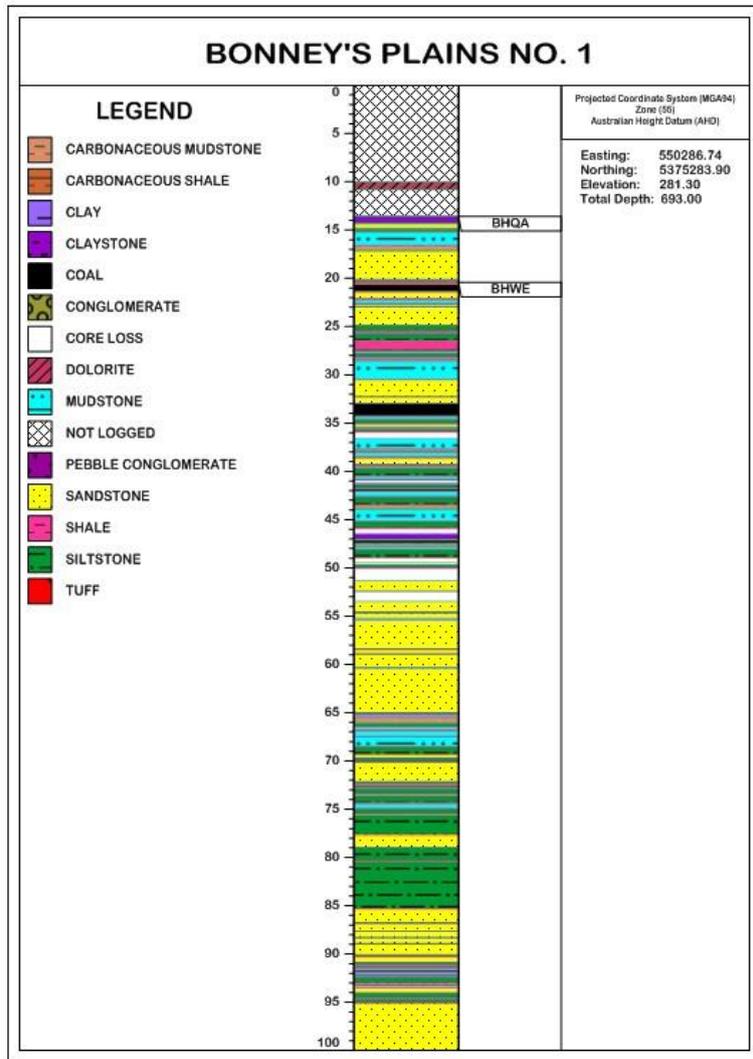
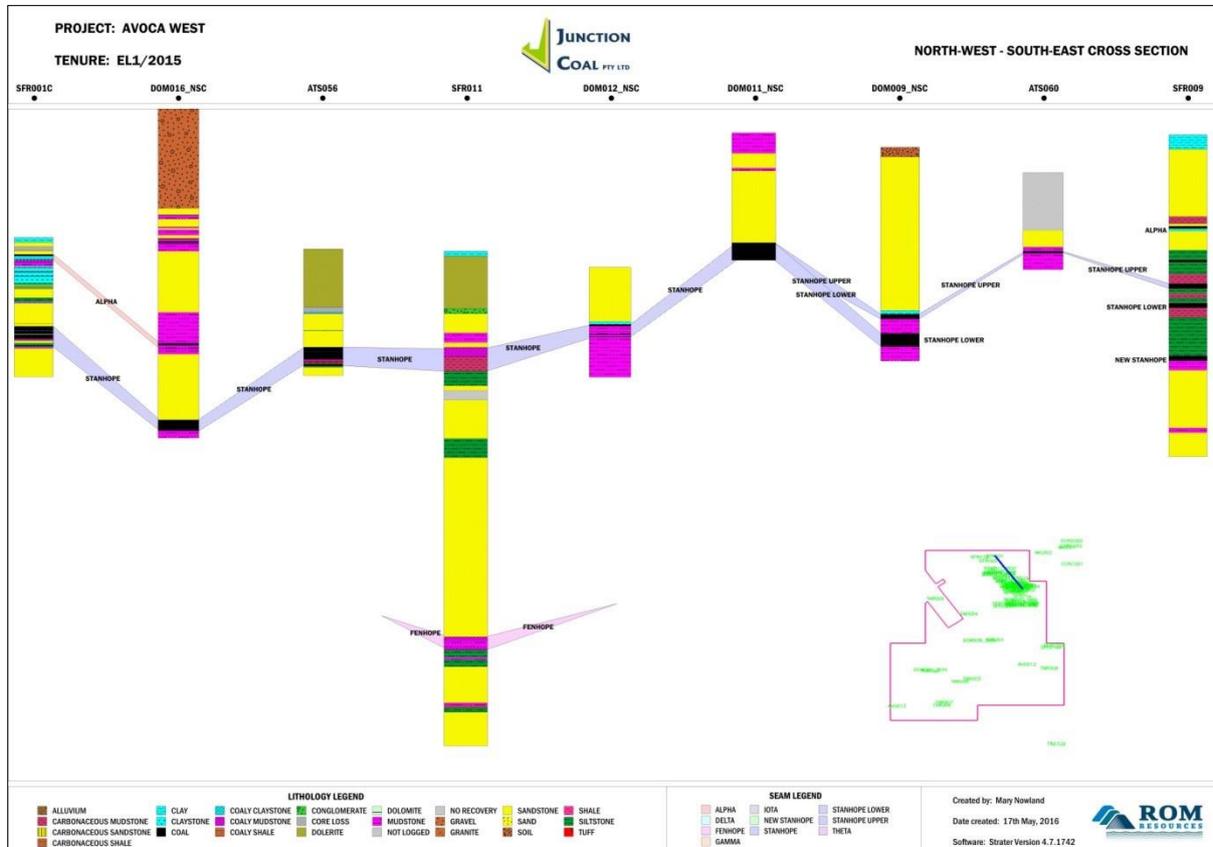


Figure 6: North-West to South-East Cross Section



YEAR 2

No field activity was undertaken during the reporting period.

The proposed drilling program has been delayed due to a lack of funding. Junction Coal has found the environment for raising exploration funds for thermal coal exploration and mining very challenging. Several times Junction Coal was close to securing potential partners with the deals not being finalised at the last moment. Junction Coal has produced a promotional leaflet and presentation outlining the benefits of the project.

Junction Coal was passionate about supporting the coal industry in Tasmania and continued to talk to potential partners in order to secure funding. From advice given to Junction Coal from various stockbrokers and financial institutions, the focus has shifted from promoting the “Stanhope” and “Fenhope” seams, which are thermal coal, to the “Delta” seam which is purported by Twelvetrees (1906) and Hills et al (1922) to have semi-soft coking properties. It was hoped that drilling to confirm this premise would commence by Q4 2017.

The following issues have been resolved with the assistance of the MRT during the year:

1. Through various requests and discussions with the MRT, the actual hardcopy of Threader (1968) has been managed to be found within the MRT archives.
2. Numerous discussions have taken place between the MRT and Junction Coal about the geo-registering of historical mining leases and mine plans in the Avoca Coalfield and considerable progress has been made to consolidate this work. The ultimate goal, which has proved challenging is the digitising and registering to the current Geodatum GDA94 local map grid coordinate system “MGA zone 55” of all historical mine plans for the Old and New Stanhope Collieries, Fenhope Colliery, Undergrounds and the Stanhope Open-cut. This work has also encompassed the digitising and registering adits and shafts associated with the Mt Christie Mine and Bonney’s Plains Prospect as described in Twelvetrees (1906) and Hills et al (1922).

Correlation and modelling of the deposit were started with the following tasks undertaken:

1. Correlation of coal seam picks.
2. Compilation and encoding of all available coal quality data.
3. Digitising and registering all underground mine faults.
4. The completion of a structural and coal quality model.

Ambiguity between the available historical maps and data caused delays in the last three (3) activities being completed during Year 2. This then meant that the modelling and resource reporting had to be postponed until the next period. Seam nomenclature and seam correlations were not immediately resolved. Despite the extensive mining history, the lack of modern downhole geophysical logging also hampered seam correlation and painstaking matching to available mine records was required.

Upon receipt of funding in Q3 2017 it was planned to drill three (3) exploration hammer/PCD boreholes and 3 hammer/chip pilot holes which would guide the drilling of three (3) large diameter partially-cored holes (4C; 100mm). These holes were dictated by the market informing Junction Coal that proof of the Delta seam having semi-soft coking properties was required. The holes were to be drilled at sites chosen across the Stanhope, Mt Christie and Bonney’s Plains deposits to obtain sufficient material for standard float/sink washability testing (Biggs, 2017).

YEAR 3

A six (6) borehole exploration drilling program and coal quality testing, modelling and resource reporting to JORC 2012 was planned for Year 3. This was to include several large diameter cores to test float/sink washability and coking properties of the main target seams at the Mt Christie and Bonney’s Plains localities. However, the proposed drilling program was rescheduled due to a delay in funding.

No field work was undertaken during the reporting period, however other related activities were undertaken. Ongoing historical data investigations and research has continued however somewhat hampered by missing or incomplete maps, reports etc. Correlation and modelling

continued from Year 2. Issues with data uncertainty hampered the completion of the resource estimation.

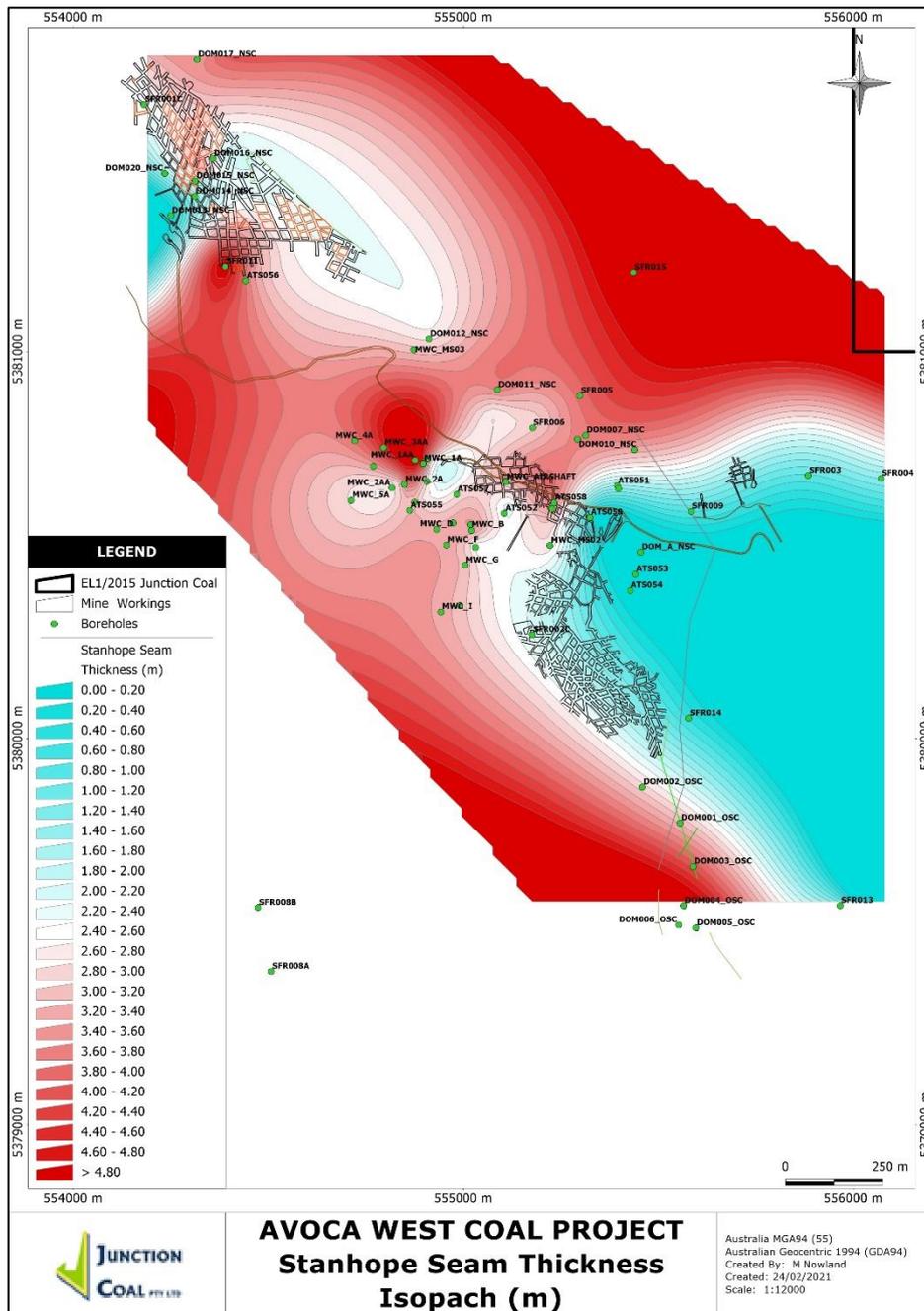
The mine planning package Minescape 5.12 was used to generate a preliminary grid mesh model. The seam statistics for the current model are given in Figure 7.

Figure 7: Avoca West Minescape Model Seam Statistics

..... DRILLHOLE STATISTICS									
¶	INTERVAL	NUMBER	AVERAGE	MINIMUM	MAXIMUM	S.D.	SKEWNESS	KURTOSIS	¶
¶			HOLE NAME	VALUE	HOLE NAME	VALUE			
ALPHA	5	0.920	RG1	-0.050	DOM002_OSC	-2.070	-0.797	-0.345	-1.074
BETA	12	0.654	DDH15	-0.090	SFR010	-2.000	-0.602	-1.021	-0.039
FEN	8	1.265	SFR009	-0.500	DOM009_NSC	-2.060	-0.547	-0.358	-1.057
SHU	28	1.886	SFR002C	-0.060	DOM017_NSC	-5.890	-1.345	-0.914	-0.795
SH	52	2.520	DOM013_NSC	-0.080	MWC_1AA	-5.000	-1.127	-0.149	-0.271
SHL	11	0.404	RG3	-0.080	DOM015_NSC	-0.920	-0.262	-0.809	-0.393
DELTU	0								
DELTA	14	1.459	RG3	-0.130	TAR008	-4.500	-1.353	-1.220	-0.271
DELTU	0								
GAMMA	10	1.011	DDH12	-0.170	TAR001	-3.500	-0.966	-1.854	-2.582
ETA	13	0.983	TAR002	-0.100	SFR011	-2.750	-0.817	-1.094	-0.138
THETA	4	1.355	DOM001_BON	-0.670	TAR002	-3.000	-1.106	-1.100	-0.712
IOTA	6	1.053	TAR002	-0.400	DOM001_BON	-2.000	-0.596	-0.485	-0.998
BHQA	1	267.760	DOM001_BON	267.760	DOM001_BON	267.760			
BHWE	12	293.035	TAR005	-196.000	MWC_MS02	-477.356	-90.185	-1.253	-0.297
ALPHA_ROOF	5	547.343	78RG2	497.420	RG1	584.950	39.406	-0.392	-1.668
ALPHA_FLOOR	5	546.423	78RG2	496.310	RG1	584.900	39.987	-0.382	-1.682
BETA_ROOF	12	505.828	78RG2	452.010	RG1	583.370	44.675	-0.437	-1.140
BETA_FLOOR	12	505.174	78RG2	450.830	RG1	583.120	44.839	-0.447	-1.135
FEN_ROOF	8	478.144	DOM016_NSC	465.340	SFR002C	506.660	13.283	-1.238	-0.729
FEN_FLOOR	8	476.879	DOM016_NSC	464.190	SFR002C	505.670	13.387	-1.260	-0.732
SHU_ROOF	28	480.246	MWC_1A	431.575	RG1	576.780	40.384	-1.119	-0.323
SHU_FLOOR	28	478.359	MWC_1A	430.075	RG1	576.100	40.514	-1.171	-0.414
SH_ROOF	52	463.961	MWC_1A	421.075	RG2	596.350	43.187	-1.570	-1.499
SH_FLOOR	52	461.442	MWC_1A	418.075	RG2	595.450	43.567	-1.576	-1.527
SHL_ROOF	11	503.727	DDH8A	414.530	RG2	595.290	63.394	-0.092	-1.467
SHL_FLOOR	11	503.323	DDH8A	413.740	RG2	595.090	63.545	-0.094	-1.464
DELTU_ROOF	0								
DELTU_FLOOR	0								
DELTA_ROOF	14	435.572	TAR008	215.810	RG3	549.670	88.506	-1.207	-0.970
DELTA_FLOOR	14	434.114	TAR008	211.310	RG3	549.540	89.759	-1.212	-0.970
DELTU_ROOF	0								
DELTU_FLOOR	0								
GAMMA_ROOF	10	409.536	AVO012	254.060	78RG1	515.730	88.846	-0.892	-0.470
GAMMA_FLOOR	10	408.525	AVO012	253.760	78RG1	515.230	89.355	-0.892	-0.473
ETA_ROOF	13	370.999	TAR003	206.100	78RG1	501.980	96.029	-0.460	-1.121
ETA_FLOOR	13	370.016	TAR003	204.000	78RG1	501.460	96.165	-0.457	-1.111
THETA_ROOF	4	273.697	AVO012	206.310	SFR003	414.020	94.708	-1.068	-0.724
THETA_FLOOR	4	272.342	AVO012	205.560	SFR003	413.020	94.845	-1.076	-0.719
IOTA_ROOF	6	318.323	AVO012	184.220	78RG1	494.220	127.651	-0.218	-1.586
IOTA_FLOOR	6	317.270	AVO012	182.900	78RG1	493.510	127.893	-0.218	-1.585
RSSR	6	205.380	AVO012	82.510	TAR009	308.000	77.267	-0.394	-0.669
BHJD	28	387.714	GY15	152.400	FT_83	582.350	118.973	-0.196	-0.711

Figure 8 shows a thickness isopach map for the Stanhope Seam over the previously mined areas. The artificial thinning of the seam to the northwest and southeast are due to lack of borehole data, especially under the Jurassic Dolerite cover. Coal quality encoding of historical channel samples progressed during the period. The generation of raw and clean coal composite grids were still in progress at the end of the reporting period and were scheduled to be completed in Year 4 (Biggs, 2019).

Figure 8: Stanhope Seam Thickness Isopach (m)



YEAR 4

No field activity was undertaken during the Year 4 reporting period however the following was completed:

1. Application documentation for the current EDGI grant being offered by Mineral Resources Tasmania (MRT).
2. Presentation to the AusIMM Tasmanian Geoscience Forum in Smithtown of work completed to date.
3. Compilation and encoding of all available coal quality data.
4. Completion of digitising and registering to MGA zone 55 of all historical mine plans for the old and new Stanhope collieries, Fenhope colliery, undergrounds and the Stanhope open-cut.
5. Completion of digitising and registering adits and shafts associated with the Mt. Christie mine and Bonneys plains prospect.
6. Completion of digitising and registering all underground mine faults.
7. Seam correlation, modelling, and resource estimation to the 2012 JORC Code standard.
8. Planning for 2019-2020 Drilling Program (see below for more detail).

Three (3) areas were identified as being under-explored at Stanhope and Bonney's Plain:

1. The area from the Fenhope Mine to the New Stanhope Mine is prospective with both Avoca Transport and Indicoal reporting seam intersections. Indicoal DDH002 was drilled on the slopes of Greenstone Hill to the west of the Stanhope open cut and intersected 1.9m and 2.9m of high ash stony coal. Avoca Transport reported an intersection of 2.61m and 1.06m separated by 0.25m of mudstone in ATS 56.
2. The area to the north and west of the New Stanhope is also prospective with borehole DOM_17 having a 2.1m seam intersection. Indicoal DDH001 was drilled to the north of the New Stanhope mine and intersected 2.4m of good quality coal.
3. The Bonneys Plains area around the old workings and WMC hole TAR 1 remains under explored. This was recognised by Golder who designed a four (4) hole program with drill sites designed to hopefully intercept the full thickness of the coal measures.

Further exploration of the lithic sandstone facies in areas where the dolerite is not present, mainly along creeks and surrounding flat areas, is not justified as the unit appears to have been removed by erosion. Further exploration to the northeast the New Stanhope mine is also not warranted due to the presence of thick overlying dolerite, the proximity to the Castle Carey Fault and deteriorated coal quality in nearby drill holes.

The only area that has not been fully explored is the Bonneys Plains area approximately 3.5 km south of the MWC Stanhope Open cut. It is 3 - 4 km distant from the Castle Carey Fault. Hills (1922) reported coal measures in the workings at the Bonneys Palins comprising thin coal and carbonaceous shale over 2 m thick. The reported quality of samples collected and analysed by Hills indicated moderate to high ash (14.-40%, adb). Hills interpreted the workings to correlate with the Delta (D) Seam in the Mt. Christie area. Borehole TAR1 drilled by Western Mining intersected coal measures 3.5 m thick to the east of the workings. The drill hole intercept and

seam exposures in the Bonneys Plains workings to represent the basal section of the coal measures and that the upper part of the sequence remains untested.

It was proposed to test for the complete sequence by locating drill holes up sequence from these locations. This would however require drilling through 50 – 70 m of dolerite cover to intersect the coal measures and test for the presence of the thicker better-quality B Seam. Previous experience indicates there is some risk with successfully drilling through the dolerite. It is likely that any resource identified could only be exploited by underground means. The locations of the ten (10) proposed open and partially cored holes, 2019_01 – 2019_10, are shown in Figures 9 and 10.

Figure 9: Location of Proposed Exploration Boreholes at Stanhope

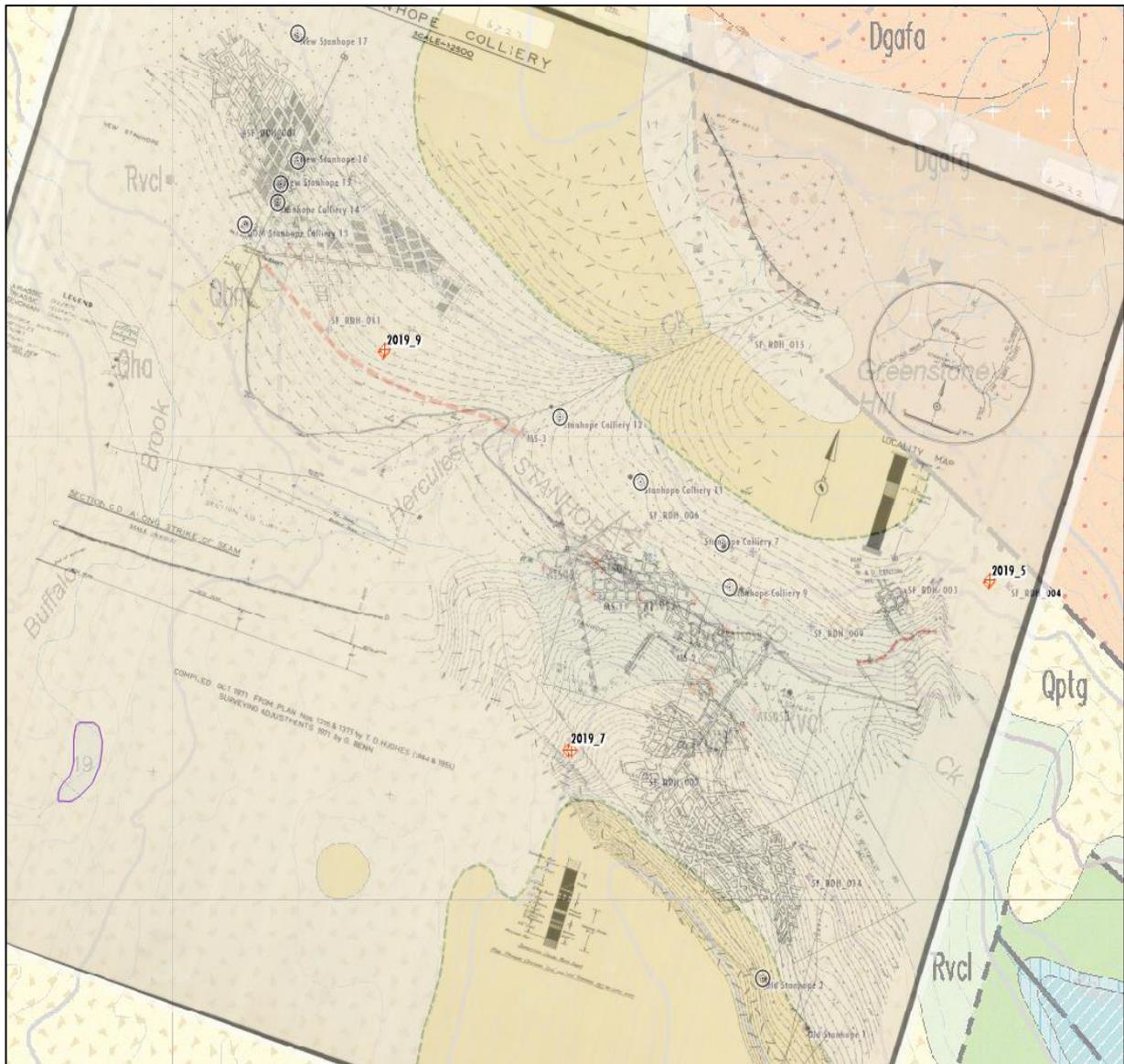
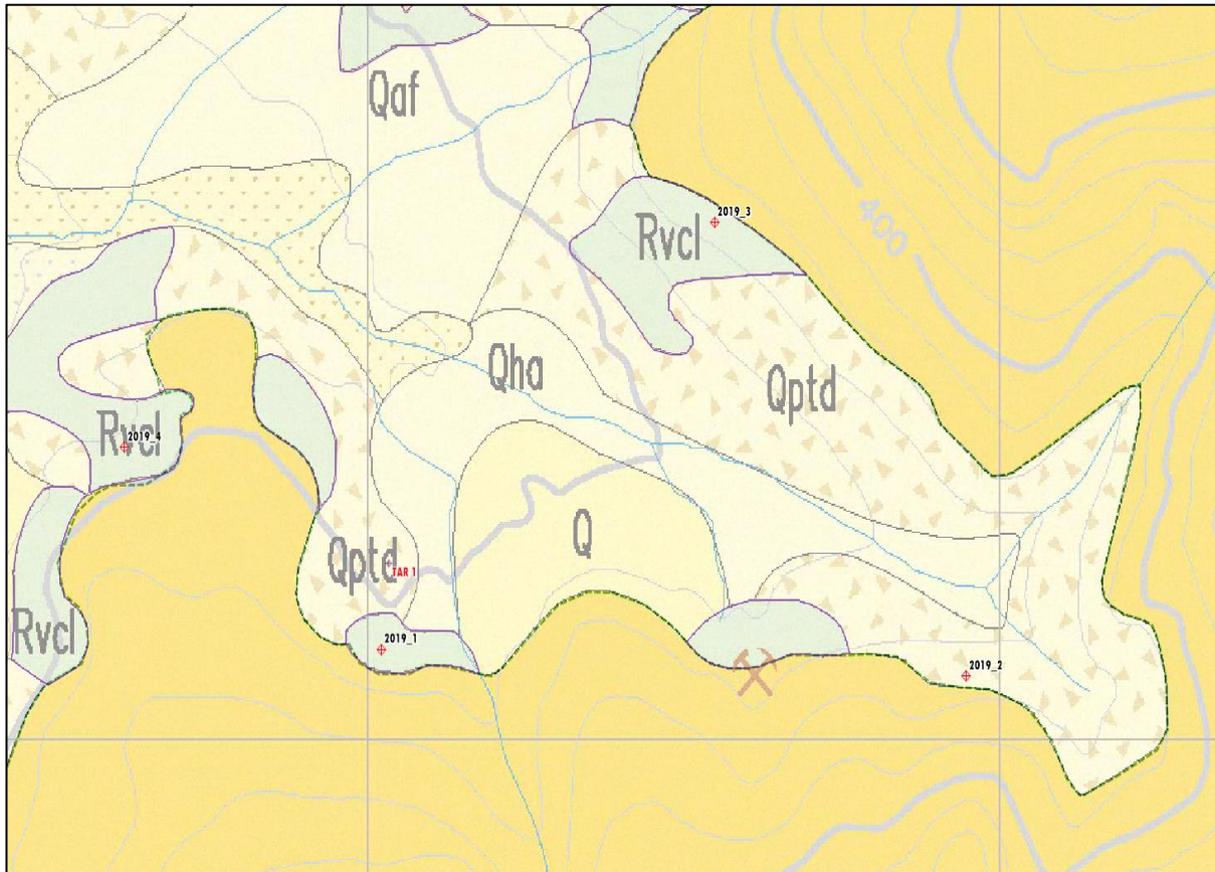


Figure 10: Location of Exploration Boreholes at Bonney's Plain's



The locations and the proposed depths of the drill holes are shown in Table 5.

Table 5: Proposed Drill Holes Avoca West

<i>SITE_ID</i>	<i>Location</i>	<i>EAST MGA94 Z55</i>	<i>NORTH MGA94 Z55</i>	<i>AHD</i>	<i>Total Depth</i>	<i>Type</i>	<i>Purpose</i>
2019_01	Bonneys Plains	554025	5376735	220	120	chip	Exploration
2019_02	Bonneys Plains	554950	5376850	220	120	chip	Exploration
2019_03	Bonneys Plains	555350	5377304	220	120	chip	Exploration
2019_04	Bonneys Plains	554230	5378170	220	120	chip	Exploration
2019_05	Mt Christie	556022	5380681	300	120	Pilot	Infill and CQ
2019_06	Mt Christie	556025	5380685	220	65	4C Core	CQ and Geotech
2019_07	Stanhope South	554982	5380321	250	120	Pilot	Infill and CQ
2019_08	Stanhope South	554990	5380320	220	65	4C Core	CQ and Geotech
2019_09	Fenhope NW	554527	5381175	230	120	Pilot	Infill and CQ
2019_10	Fenhope NW	554530	5381178	220	65	4C Core	CQ and Geotech

The following tasks were to be implemented to allow drilling to commence:

- Preparation of a “Proposed Exploration Work Program”, submitted to the MRT for approval and notify affected landholders.

- Engagement of drilling, logging, surveying, earth moving contractors and coal quality testing laboratory.
- Preparation of Safety Management Plan.
- Mark out of drill sites and obtain MRT clearance for access.
- Supervision of drill program and data collection.
- Rehabilitation of drill sites.
- Evaluation of data and preparation of report.
- Preparation of MRT statutory annual report.

The drilling program and related site activities were estimated to take twenty-five (25) days to complete as drilling through dolerite is generally slow. A wet weather contingency was also included. Preliminary planning and data evaluation and final reporting was estimated to take fifteen (15) days to complete.

The drilling program was to be conducted by an experienced coal exploration geologist who would be supported by a senior geologist as required. An infield Exploration Manager would supervise the project. The drilling program would require formal approval by Mineral Resources Tasmania prior to commencement and all affected landholders would have to be personally advised at least fourteen (14) days prior to commencement of work. All exploration work was to be conducted under the Tasmanian Mineral Exploration Code of Practice (Biggs, 2020).

EXPLORATION COMPLETED DURING THE REPORTING PERIOD

The following activities were completed during the 5th and final year of the tenure (to the 23rd April 2020).

- Completion of the compilation and encoding of all available coal quality data, much of it not previously databased. This included channel samples listed in Hills (1922).
- Completion of digitising and registering to MGA zone 55 of all historical mine plans for the Old and New Stanhope Collieries, Fenhope Colliery, Undergrounds, and the Stanhope Open cut.
- Digitising and registering adits and shafts associated with the Mt Christie Mine and Bonney's Plains Prospect.
- Digitising and registering all underground mine faults.
- Resource estimation to the 2012 JORC Code standard.

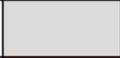
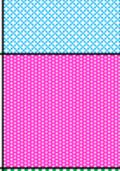
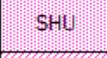
Locating all the channel samples has greatly enhanced the raw coal quality composite model. A total of eighty-nine (89) lines of coal quality pertaining to coal plies and seams now exists.

SEAMS MODELLED

The seams as modelled are listed in Figure 11, along with their codes. The model was split into two (2) areas, Stanhope and Bonneys Plains (Figure 12). The database contained government, mining company and coal explorers’ boreholes, mine, and exploratory shaft boreholes (as shown in Figure 12). The Stanhope Model Area contains ninety (90) boreholes/channel samples for an average spacing of 177m, whereas the Bonneys Plains Model Area contains twenty-six (26) boreholes/channel samples at an average spacing of 1,284m. Both a structural and raw coal quality model was generated in the mine planning software Minescape Stratmodel. Missing seams were interpolated between the limits of the model vertically, using the base of weathering (BHWE) and the roof of the Ross Sandstone (RSSR) as upper and lower limits, respectively. Seams pinch out away from the main data cluster.

Modelling has shown that the Fenhope/Stanhope/New Stanhope seams are the same. The confusion resolving once the mine-scale faulting was included in the model. Additionally, despite variation in the coal seam along strike there are always at least three (3) thin (<5cm) claystone (tuffaceous in part) bands in the Stanhope seam. These were generally correlatable across the deposit. Plots of structure roof, thickness and raw ash for the Stanhope and Delta seams have been appended in JORC Table 1 (Appendix 1).

Figure 11: Minescape Modelling Schema.

Description	Graphical Pattern	Seam/Seam Splits Code	
Base of Quaternary		BHQA	
Base of Jurassic Dolerite		BHJD	
Base of Weathering		BHWE	
Alpha Seam		ALPHA	
Beta Seam		BETA	
Stanhope Seam		SH	
			
Gamma Seam		GAMMA	
Delta Seam		DELTA	
Eta Seam		ETA	
Theta Seam		THETA	
Iota Seam		IOTA	
Kappa Seam		KAPPA	
Roof of the Ross Sandstone		RSSR	

RAW COAL QUALITY MODEL

Eight-nine (89) lines of raw coal quality were loaded to the model as evidenced in Figure 13. These composited down to thirty-nine (39) raw composites, mostly across the Stanhope and Delta seams as shown in Figure 14. There were insufficient clean coal composite data to model (only four (4) records).

Figure 13: Raw Ply Statistics

Quality Statistics for Data Samples						
Quality	Number	Total Length	Minimum	Maximum	Average	
RRD	89	72.355	1.32	2.58	1.81	
RIM	89	72.355	1.1	15.0	3.9	
RAS	89	72.355	7.2	93.2	45.9	
RVM	89	72.355	4.2	35.9	20.2	
RFC	89	72.355	0.0	62.0	30.0	
RSE	89	72.355	0.06	33.65	15.75	
RCV	89	72.355	14	8035	3740	
RCSN	12	24.660	0.0	6.0	2.0	
RTS	52	31.555	0.010	0.800	0.273	
RIT	1	1.070	150	150	150	
TOTAL	89	72.355				

Figure 14: Raw Composite Statistics

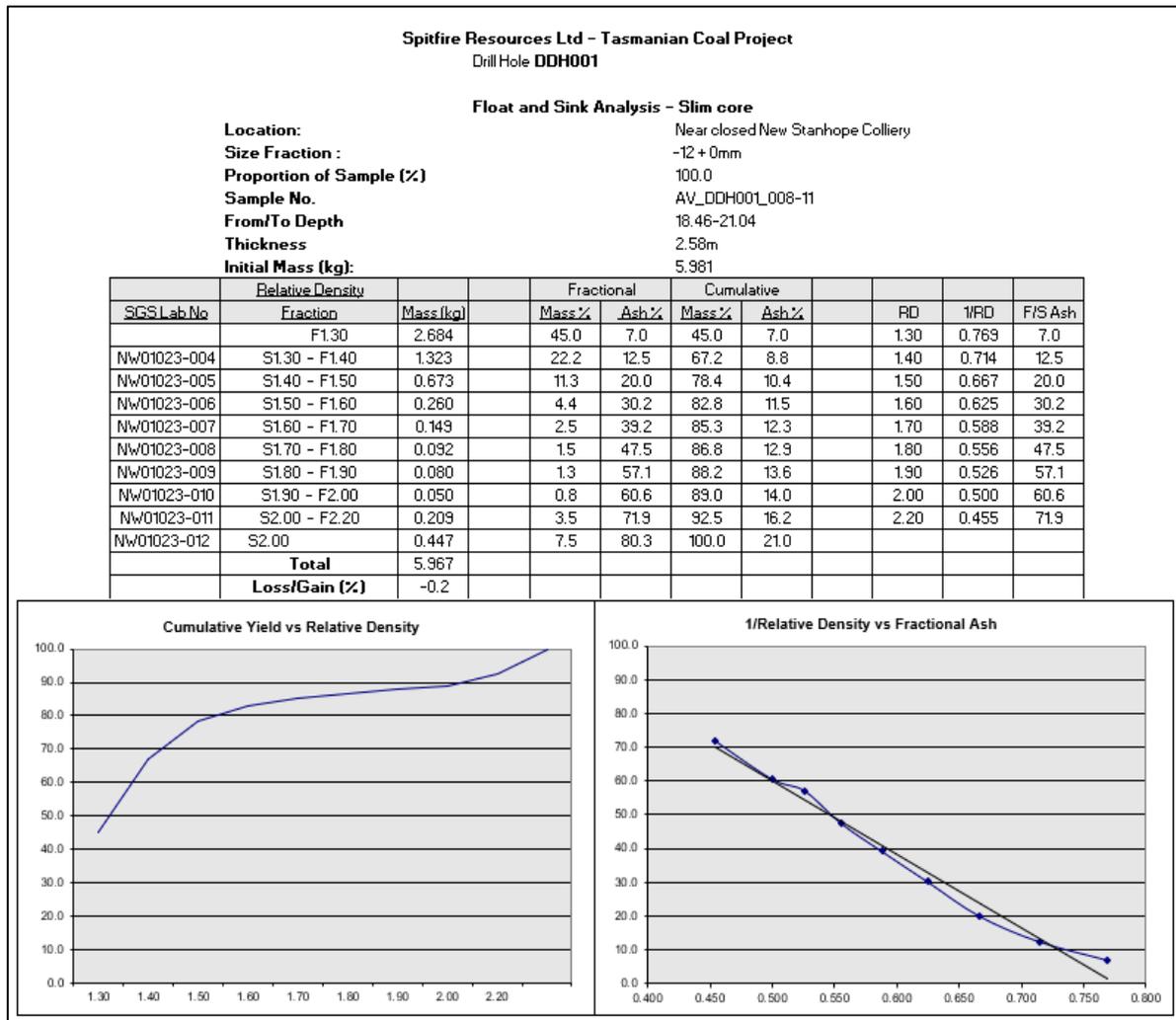
Interval Statistics for Interval Samples							
Interval	Number	Resource		Waste			
		Sample Length	Length Left	Number	Sample Length	Length Left	
ALPHA	3	0.910	0.000	0	0.000	0.000	0.000
BETA	9	1.360	0.000	0	0.000	0.000	0.000
SHU	0	0.000	0.000	0	0.000	0.000	0.000
SH	62	31.715	0.210	0	0.000	0.000	0.000
SHL	3	0.560	0.000	0	0.000	0.000	0.000
DELTA	8	3.700	0.000	0	0.000	0.000	0.000
DETL	1	0.400	0.000	0	0.000	0.000	0.000
GAMMA	0	0.000	0.000	0	0.000	0.000	0.000
ETA	1	0.750	0.000	0	0.000	0.000	0.000
THETA	1	0.200	0.000	0	0.000	0.000	0.000
TOTAL	88	39.595	0.210	0	0.000	0.000	0.000

QUALITY COMPOSITING						
Quality Statistics for Composited Samples						
Quality	Number	Total Length	Minimum	Maximum	Average	
RRD	27	45.435	1.32	2.19	1.59	
RIM	27	45.435	1.5	14.9	3.7	
RAS	27	45.435	7.6	76.7	30.5	
RVM	27	45.435	8.0	35.9	24.8	
RFC	27	45.435	5.5	62.0	40.9	
RSE	27	45.435	0.74	33.43	21.57	
RCV	27	45.435	177	7984	5103	
RCSN	9	12.770	1.0	6.0	2.4	
RTS	15	23.865	0.050	0.800	0.381	
RIT	1	2.630	150	150	150	
TOTAL	27	45.435				

CLEAN COAL QUALITY MODEL

Insufficient clean coal composite laboratory results exist to reliably model clean coal composite data, as there are only four (4) boreholes/channel samples with detailed sizing and float/sink testing. Generally, the coal washes to a 12% product ash between 70-85% yield at CF1.60 (refer to Figure 15 for a typical example).

Figure 15: Float/Sink Analysis for SPI DDH001 Composite Statistics



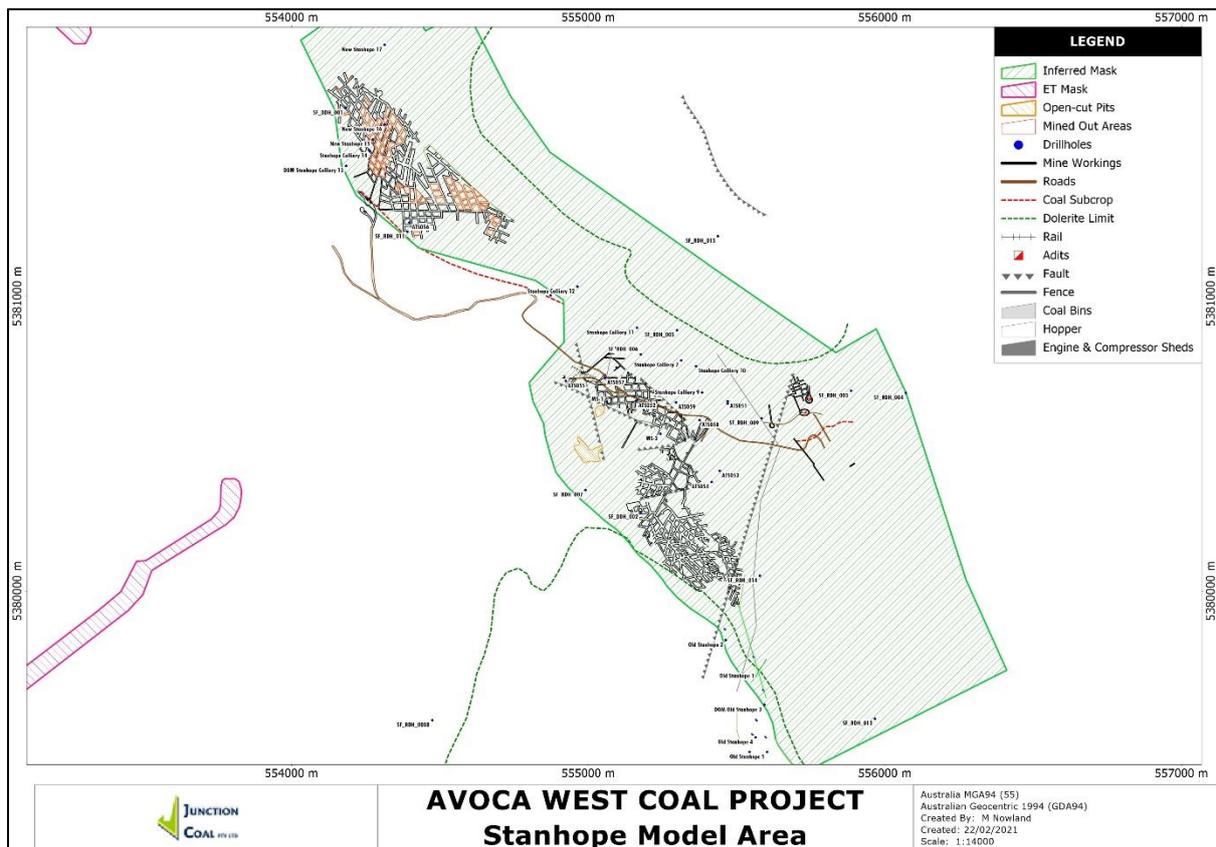
RESOURCE ESTIMATES

A detailed discussion of the data, and methodologies used in generating the new Datamine Minescape 5.12 structural and coal quality model is provided in JORC Table 1 (Appendix 1) and in the Model Completion Certificate in Appendix 2.

Despite ninety-three (93) years of mining, numerous mine plans, channel samples and production records, the lack of accurate survey, downhole geophysics, and the error inherent with georeferencing old hand-drawn plans has led to the conclusion that only Inferred-level JORC Resources can be quoted. Of the one hundred and sixteen (116) boreholes and channel samples in the model (Appendix 3), only forty (44) count as Points of Observation (Appendix 4).

A new Inferred mask (Figure 16) was created by drawing circles at an initial borehole-to-borehole spacing of 1,500m, cut-off by the coal subcrop line (where mapped) and where the thickness of the overlying Jurassic dolerite exceeds 50m. Resources estimates were also cut to 300m depth from the surface, although the model only has seam depths to 220m. The Inferred mask area was 222Ha. (refer to Figure 16).

Figure 16: EL1-2015 Resource Masks



Points of Observation used to construct the masks are tabulated in Appendix 3, although it should be noted that there are another seventy-two (72) additional boreholes used in the structural model, that were not suitable for PoO (no quality or downhole geophysical logging).

A new resource estimate (calculated at to the Inferred level of confidence) has been completed. Table 6 below summarises the result which stands at 15.2Mt, which accounts for subtractions of mining of 584,524t throughout the history of mining operations all from the Stanhope seam. Mining in the Delta seam at Mt Christie and Bonneys Plains was negligible (<1,000t) and has not been subtracted from Table 6.

Table 6: Summary of Inferred Resource Estimates on EL1/2015 Avoca West

Formation	Seams	Inferred Tonnage (Mt)	Raw Ash % adb	Raw Volatile Matter (% adb)	Raw Crucible Swell Number	Raw Calorific Value MJ/kg GAD	Raw Total Sulphur % adb
Avoca Coal Measures	Alpha, Beta, Stanhope	11.5	33.0	24.1	1	23.25	0.403
Avoca Coal Measures	Delta	3.7	17.4	25.8	5	28.20	0.270
Total:		15.2					

Additionally, an Exploration Target² in the range of 2.0 - 8.5Mt was estimated (Table 7) in the same seams as the Inferred Resource, with the details contained in Appendix 1 (JORC Table 1). This Exploration Target is in addition to the JORC Inferred Resource mentioned above and was based on the same Minescape model as the resources in Table 6, but which occurred in the Bonneys Plains area. The Exploration Target masks were based on outcrop mapping of the coal-bearing unit "RcVL", boreholes and known adits and shafts.

Table 7: EL1/2015 Summary of Exploration Targets April 2020

Formation	Seams	Exploration Target Range (Mt)	Raw Ash % adb	Raw Volatile Matter % adb	Raw Calorific Value MJ/kg GAD	Raw Crucible Swell Number
Avoca Coal Measures	Beta-Iota	2.0 - 8.5	25.1-48.3	24.5-32.6	11.2-28.4	0-4

² It should be noted that the Exploration Target tonnage range quoted above are conceptual in nature and there has been insufficient exploration to define a coal resource. Although a preliminary analysis was undertaken, insufficient data exists to confidently correlate coal seams. It is uncertain whether further exploration may lead to the reporting of a JORC-standard resource however there is some evidence to support the current exploration tonnage calculations, and the sufficient coal thicknesses interpreted from historic drilling to warrant further investigation in some areas.

DISCUSSION OF RESULTS

Junction Coal's objective was to find a resource of thermal coal capable of exploitation by open-cut methods, where production could recommence whilst exploration continued looking at the coking properties of the Delta seam. The total remaining resource base estimated is small, (<16Mt) (but based entirely on historical drilling) however the probability that the Stanhope seam continues under thicker dolerite cover is high, which would open up the possibility, of underground mining.

One of the recommendations from the 2020 Resource Estimate Report (Biggs 2020) was that future work would also include a modest large diameter core program to test float/sink washability and coking properties of the main target seams (Stanhope or Beta, and Delta) at the Mt Christie and Bonney's Plains localities. After that, enough information should exist to begin mining design studies and a Scoping Study. However due to the current thermal coal price \$93.02 as at April 2020 (Index Mundi, 2020), this work did not proceed.

CONCLUSIONS

Although there is a small thermal deposit proved and possible coking property opportunities available. Junction Coal did not seek to renew EL1/2015 due to a lack of exploration funding and the current economic viability of the project. Investor interest diminished since an adverse news article in October 2019 and the smaller than expected resource reducing the potential to generate mine designs, and JORC Resources as (April 2020 Thermal Coal prices) as first anticipated.

ENVIRONMENTAL MANAGEMENT

No surface disturbance activities took place in the current reporting period (Year 5) or during the life of the tenure.

EXPENDITURE

Junction Coal's Expenditure Statement for Year 5 is presented below (Table 8) shows the actual monies expended on exploration activities for the year.

Table 8: Year 5 Expenditure Statement for EL1/2015

No.	Costs	Type	Annual Expenditure
1	Geoscientific	Geology	\$ 32,603.17
		Geochemistry	-
		Geophysics	-
		Remote Sensing	-
2	Drilling and Gridding	Gridding	-
		Drilling	-
3	Land Access		-
4	Rehabilitation		-
5	Feasibility Study		-
6	Other	Rental Fees	-
		Vehicular Track Construction	-
		Surveying	-
		Capital Equipment	-
7	Administration Costs		\$3,260.31
	TOTAL EXPENDITURE		\$35,863.49

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APPENDIX 1: JORC CODE 2012 TABLE 1

SECTION 1: SAMPLING TECHNIQUES AND DATA TABLE

Criteria/JORC Code explanation	Commentary
<p>Sampling Techniques</p> <p><i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay').</i></p> <p><i>In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i></p>	<p>As there are a wide variety of explorers at Avoca West over time, so the sampling practices are also varied. WMC's TAR series holes sampled and analysed chips, whereas the Mineral Resources Tasmania (MRT) and Spitfire Resources analysed NQ and HQ-sized core. Only the Spitfire holes have open file laboratory Final Reports and documented sampling analysis procedures. Most results were quoted on air-dried basis. Channel samples analysed and reported by Hill (1922) were analysed by the then Department of Mines Laboratory in Launceston, Tasmania. Mine owner drilling, sampling and analysis was poorly documented, especially during the period between 1952-1985.</p>
<p>Drilling techniques</p> <p><i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></p>	<p>Drilling techniques varied between explorers also but generally consisted of chip drilling (RAB) at 120mm diameter and partially cored diamond core holes at NQ (47.5mm) and more rarely HQ (61mm) core size. Avoca Trading Company used an Air Trak drill to complete their chip holes.</p>
<p>Drill sample recovery</p> <p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>Whether a relationship exists between sample recovery and grade & whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	<p>All analyses, other than the Spitfire Resources drilling, don't address sample loss delivered to the lab, however all diamond core holes record core loss which was generally >80% except in faulted areas and through Dolerite overburden. Threader (1968) and Threader and Bacon (1986) discuss the channel sampling methodology employed by the MRT extensively. Some discussion of channel sampling techniques are made by Twelvetrees (1906) and Hill (1922) but rarely by the mine operators at Old and New Stanhope Mines.</p>

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<p>Logging</p> <p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.</i></p>	<p>Detailed lithological and coal brightness logging of the Spitfire Resources and MRT channel samples were undertaken however all the work was before the implementation of CoalLog standards. MRT logging of diamond core holes prior to 1968 comprised only a lithology summary. Borehole DOM_Bonney Plains No. 1 was relogged by Junction Coal contractors to the CoalLog standard from core stored in the MRT Core Library in Hobart.</p>
<p>Sub-sampling techniques and sample preparation</p> <p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality, and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p>All core sampled was generally provided for analyses. The Spitfire holes were ply sampled and later composited at the laboratory for raw and clean (washed) composite testing and reporting. For the Spitfire holes a RFA (request for analyses) has been provided. The channel sample taken at Fenhope Colliery was extensively documented by Bacon (1986), and includes trace element and petrographic testing.</p>
<p>Quality of assay data and laboratory tests</p> <p><i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></p> <p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p> <p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>The status, quality accreditation and procedural methodology of the Department of Mines laboratory in Launceston is unknown however, for the Spitfire Resources samples SGS Laboratory undertook the analyses with all testing and reporting to appropriate Australian Standards. SGS Newcastle was NATA registered.</p>
<p>Verification of sampling and assaying</p> <p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p>	<p>Analyses results were plotted against the lithological profiles and downhole geophysics where available.</p>

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<p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.</p>	
<p>Location of data points</p> <p>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</p> <p>Specification of the grid system used. Quality and adequacy of topographic control.</p>	<p>Appendix 3 lists the Points of Observation and also their surveyed accuracy. Accuracies on the MGA grid, range from ± 0.5 for the Spitfire boreholes to ± 35m for the DOM partially cored holes and mine adit and channel sampling.</p>
<p>Data spacing and distribution</p> <p>Data spacing for reporting of Exploration Results.</p> <p>Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</p> <p>Whether sample compositing has been applied.</p>	<p>All holes and channel samples are generally irregularly spaced but biased over historical workings. Ninety (90) holes at an average spacing of 144m in the Stanhope model and twenty-six (26) holes at an average spacing of 1,234m in the Bonney Plains model. All data has been converted to MGA 94 Zone 55 coordinate system.</p>
<p>Orientation of data in relation to geological structure</p> <p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</p>	<p>The Avoca Coal Measures strike north to north-west in a series of gentle folds whose axis mirror the strike direction. Dips vary between 5-25° (degrees). Many faults traverse the area, often mapped in the mine workings where fault throws between 1 – 2m have been recorded. The fault frequency increases eastward to the Castle Carey Fault. All drilling has been vertical (-90°) to gain representative intersections of the gently dipping coal seams.</p>
<p>Sample security</p> <p>The measures taken to ensure sample security</p>	<p>Very little documented commentary on sample security and transport is available except for Spitfire Resources who transported their samples from site to SGS Newcastle using freight transport.</p>
<p>Audits or reviews</p> <p>The results of any audits or reviews of sampling techniques and data.</p>	<p>No external reviews or Audits have been undertaken.</p>

SECTION 2: REPORTING OF EXPLORATION RESULTS

Criteria/JORC Code explanation	Commentary
<p>Mineral tenement and land tenure status:</p> <p><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <p><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area</i></p>	<p>Exploration Licence EL1/2015 was granted to Junction Coal Pty Ltd on the 23rd April 2015 for a period of five (5) years. Junction Coal Pty Ltd is a privately-owned company which holds 100% share of the tenement. EL1/2015, known as the Avoca West Coal Project, lies to the north-west of the township of Avoca whilst the larger centre of Campbell Town lies approximately 20km to the south-west.</p>
<p>Exploration done by other parties</p> <p><i>Acknowledgment and appraisal of exploration by other parties.</i></p>	<p>Mining History</p> <p>Bacon (1983) summarises the early discovery of coal in the area to the north of Avoca as follows:</p> <p>Coal was noted as early as 1882 north of Avoca, when Mr R. Stevenson drove a tunnel into a coal seam on Story's Creek four kilometres from the Storey's Creek tin mine. Montgomery (1892) wrote of coal discoveries in the Avoca district and Waller (1901) mentioned coal outcrops in Gipps Creek and on the south-eastern flank of Ben Lomond. James Stevenson found coal near Mount Christie in 1904 and Twelvetrees (1906) reported at length on the Mount Christie and Buena Vista seams. Twelvetrees found three tunnels (one partly collapsed) on the southern flank of Greenstone Hill. The uppermost tunnel had been driven in a north-west direction for 15m on a 1.8-2.1m thick seam of coal. A second (collapsed) tunnel was 33m lower in elevation than the first and had intersected 3.6m of coal. Twelvetrees (1906) and Hills et al. (1922) thought the exposed seam in both the upper and lower tunnels was the same, repositioned by faulting. These workings, together with many subsequent adits in the same area, became known as the Mt Christie mine.</p> <p>Twelvetrees (1906) reports, that in 1905, one shaft had been sunk on the area of flat ground between Mount Christie and Greenstone Hill. By 1922, five shafts had been dug on the flat, and three exploratory adits had been dug into the slopes of Mount Christie and were called the 'Buena Vista' mine by Hills et al. (1922). These workings became the site of the Stanhope mine (Pemberton, 2013).</p> <p>Stanhope (Excelsior) Mine</p> <p>The Excelsior mine was small, producing 93 tonnes per annum by 1929. Bacon (1983) notes that the mine was renamed the Stanhope in 1931 and the workings moved eastwards. Seam conditions were difficult due to extensive faulting and some seam thinning.</p> <p>The new workings at the (old) Stanhope were accessed in 1937 by a drive on the southern side of a fault. Coal was mainly mined by the Bord and pillar method with a brief attempt at a short wall face (1943) and the long wall (1947) technique. Bacon (1983) notes that collapse</p>

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	<p>of the long wall face resulted in a dramatic decrease in output and reversion back to the more suitable Bord and pillar method of mining.</p> <p>Mining was made difficult by numerous small faults. Threader (1968) attempted to compile a report on the diamond drilling by the mining company at the Stanhope colliery over the previous 19 years. Records of core logging were incomplete and locations of holes uncertain. The main drive of the New Stanhope was started in 1956 and operations finally ceased at the Stanhope in June 1957. Bacon (1983) reports that the total production from 1932 to 1957 was approximately 175,000 tonnes (Pemberton, 2013).</p> <p>New Stanhope Mine</p> <p>The New Stanhope Mine is 1.3km north-west of the Stanhope mine. A drilling program undertaken by the Department of Mines for the Mine Management provided some geological control for mine planning at the New Stanhope. Drill holes 13 through to 17 had good seam intersections. A detailed description of the New Stanhope geology can be found in Appendix 4 in (Bacon, 1983). Normal faulting with throws of 3m to 4m commonly crosses the workings and was one of the major setbacks which caused the mine to close (Pemberton, 2013).</p> <p>Production began in 1957. Threader (1972) concludes that on drilling evidence that the same seam (Stanhope) that had been mined at the Old Stanhope Colliery was mined, in contradiction to the commonly reported belief from Mine Management that they were different seams. The seam was 2.1 m thick and mined from two (2) adits. The No.1 adit was developed in 1957 and the No.2 adit in 1963. Development continued until 1969 when complex geological structure and poor roof conditions were encountered. Pillar extraction continued until 1973 when the mine was closed (Pemberton, 2013). Total production from 1957 to 1973 was approximately 220,000 tonnes (Bacon, 1983). Average analysis for run of mine coal from the New Stanhope is documented in Table A1 below:</p> <p>Table A1: Average Analysis for ROM Coal - New Stanhope Mine</p> <table border="1" data-bbox="639 1377 1390 1621"> <thead> <tr> <th>Coal Quality Variable</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Moisture (%)</td> <td>7-9</td> </tr> <tr> <td>Ash (run of mine) (%)</td> <td>25</td> </tr> <tr> <td>Ash (washed coal) (%)</td> <td>14-18</td> </tr> <tr> <td>Volatile carbonaceous matter (%)</td> <td>33</td> </tr> <tr> <td>Fixed carbon (%)</td> <td>35</td> </tr> <tr> <td>Specific Energy (MJ/kg)</td> <td>25.28</td> </tr> </tbody> </table> <p>Mount Christie Mine</p> <p>The Mt Christie workings are seen on the southern flank of Greenstone Hill. Bacon (1983), reports that in 1927 a few tonnes of coal were produced from the old workings and again in 1940, producing sixty-five (65) tonnes in that year. In 1959 a new tunnel was worked until 1965 by N and D Fenton, who produced 1,700 - 1,800 tonnes of coal per year. The workings closed in 1965 with production estimated at 13,000 tonnes (Bacon, 1991) (Pemberton, 2013).</p>	Coal Quality Variable	Amount	Moisture (%)	7-9	Ash (run of mine) (%)	25	Ash (washed coal) (%)	14-18	Volatile carbonaceous matter (%)	33	Fixed carbon (%)	35	Specific Energy (MJ/kg)	25.28
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	<p>Fenhope Mine</p> <p>In 1981 Mr D. Fenton opened the Fenhope (ML 1008 P/M) to the north of the old workings of the (old) Stanhope Mine. Bacon (1983) notes that the seam mined was the Stanhope seam which was 3.6m thick with a 0.45m dirt band in the middle. Estimated production from the Fenhope to 1983 was less than 1,000 tonnes (Pemberton, 2013).</p> <p>Stanhope Open Cut</p> <p>The Golder Report (2012) includes unreferenced information on the mining of the Stanhope Open Cut. In 1997 the Merrywood Coal Company was granted Mining Lease 1640P/M. A small open cut mine was developed over the Stanhope mine underground workings progressing downdip. The mine closed in December 1998. The estimated coal production was 175,524 tonnes and washed coal product was 121,917 tonnes at an average recovery of 69.5%. Bacon, 1983, and Pemberton, (2013) mentioned that the Stanhope seam was on fire. In total, the Stanhope Coalfield produced 584,524 tonnes from approximately 1905 to 1998 (Pemberton, 2013). Table A2 below summarises the production from each mine.</p> <p>Table A2: Total Production of Coal for Avoca Coalfield</p> <table border="1" data-bbox="639 987 1382 1223"> <thead> <tr> <th>Mine</th> <th>Tonnes</th> </tr> </thead> <tbody> <tr> <td>Old (New) Stanhope</td> <td>175,000</td> </tr> <tr> <td>New Stanhope</td> <td>220,000</td> </tr> <tr> <td>Mt Christie</td> <td>13,000</td> </tr> <tr> <td>Fenhope</td> <td>1,000</td> </tr> <tr> <td>Stanhope Open Cut</td> <td>175,524</td> </tr> <tr> <td>Total</td> <td>584,524</td> </tr> </tbody> </table> <p>Western Mining Corporation (Tasmania) Pty Ltd (WMC)</p> <p>EL 16/76 was granted to WMC in August 1976. The EL covered 826 sq km in the Stanhope – Bonney’s Plain area. WMC were exploring for shallow open-cut coal. Regional exploration for Triassic sediments with coal measures identified the Bonney’s Plains area as a prospective target. Nine (9) open holes were drilled to the west of the Stanhope area on Bonney’s and Buffalo Plains. The holes were short (80m to 82m) and the total length drilled was 587.3m (Table A3). Four (4) holes (TAR 1, TAR 2, TAR 3, and TAR 8) intersected minor coal seams. The lithic sandstone facies were intersected in seven (7) of the holes. The thickest intersection of coal measures was in TAR 2 with 45cm comprising thin seams and carbonaceous shale (Pemberton, 2013). Results of the coal quality analyses from TAR 2 chips have been tabled below (Table A4):</p>	Mine	Tonnes	Old (New) Stanhope	175,000	New Stanhope	220,000	Mt Christie	13,000	Fenhope	1,000	Stanhope Open Cut	175,524	Total	584,524
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	<p data-bbox="608 367 1171 398">Table A3: Western Mining Corporation Boreholes</p> <table border="1" data-bbox="608 412 1393 748"> <thead> <tr> <th>Hole No.</th> <th>Total Depth (m)</th> <th>Comments</th> </tr> </thead> <tbody> <tr> <td>TAR 1</td> <td>82.00</td> <td>Coal measures at approx 3.5m.</td> </tr> <tr> <td>TAR 2</td> <td>84.90</td> <td>Coal measures at approx 4.5m.</td> </tr> <tr> <td>TAR 3</td> <td>63.50</td> <td>Dolerite to 7m. Coal measures at approx 32.5m.</td> </tr> <tr> <td>TAR 4</td> <td>60.00</td> <td>No coal intersected.</td> </tr> <tr> <td>TAR 5</td> <td>78.00</td> <td>No coal intersected.</td> </tr> <tr> <td>TAR 6</td> <td>3.80</td> <td>Hole abandoned in dolerite.</td> </tr> <tr> <td>TAR 7</td> <td>60.00</td> <td>No coal intersected.</td> </tr> <tr> <td>TAR 8</td> <td>80.00</td> <td>Coal measures from approx. 5.2m.</td> </tr> <tr> <td>TAR 9</td> <td>78.00</td> <td>No coal intersected.</td> </tr> </tbody> </table> <p data-bbox="608 768 1062 799">Table A4: Coal Quality Results for TAR2</p> <table border="1" data-bbox="608 813 1398 1196"> <thead> <tr> <th>From Depth (m)</th> <th>To Depth (m)</th> <th>Thick (m)</th> <th>Inherent Moisture (% adb)</th> <th>Ash (% adb)</th> <th>Volatile Matter (% adb)</th> <th>Fixed Carbon (% adb)</th> <th>Crucible Swell Number</th> </tr> </thead> <tbody> <tr> <td>10.0</td> <td>10.4</td> <td>0.4</td> <td>2.5</td> <td>36.9</td> <td>19.9</td> <td>40.7</td> <td>0.5</td> </tr> <tr> <td>11.0</td> <td>11.4</td> <td>0.4</td> <td>2.5</td> <td>29.1</td> <td>25.6</td> <td>43.8</td> <td>0.5</td> </tr> <tr> <td>14.1</td> <td>14.5</td> <td>0.4</td> <td>2.5</td> <td>52.1</td> <td>19.1</td> <td>26.3</td> <td>0.5</td> </tr> <tr> <td>38.8</td> <td>39.0</td> <td>0.2</td> <td>2.5</td> <td>29.5</td> <td>32.6</td> <td>35.4</td> <td>0.5</td> </tr> <tr> <td>47.6</td> <td>48.0</td> <td>0.4</td> <td>2.5</td> <td>71.1</td> <td>11.9</td> <td>14.5</td> <td>-</td> </tr> <tr> <td>48.0</td> <td>49.0</td> <td>1.0</td> <td>2.5</td> <td>80.3</td> <td>10.3</td> <td>6.9</td> <td>-</td> </tr> <tr> <td>49.0</td> <td>49.5</td> <td>0.5</td> <td>2.5</td> <td>86.0</td> <td>8.2</td> <td>3.3</td> <td>-</td> </tr> </tbody> </table> <p data-bbox="608 1216 1401 1456">In the area covered by the TAR drilling program WMC concluded that the dolerite had transgressed the Triassic sequence close to the base of the coal measures. It was suggested that it could be that the dolerite edges are faulted and that all boreholes were drilled in the uplifted block where the coal measures had been removed. This would mean that the coal measures could still be preserved beneath the dolerite. No further work was undertaken, and the ground was not renewed in 1977 (Pemberton, 2013).</p> <p data-bbox="608 1473 1086 1505">Shell Company of Australia Limited (Shell)</p> <p data-bbox="608 1520 1401 1668">Shell was granted EL 18/77 covering 1,473 sq km in January 1978. Shell completed a regional review using aerial photographs, constructed a regional geology map, did a fracture study of the area and a follow up field mapping programme was conducted (Bornman, 1981) (Bornman & Murphy, 1981).</p> <p data-bbox="608 1686 1401 1776">Shell drilled two (2) holes west and south of Stanhope in 1980. Both holes were drilled through the dolerite. AV12 was drilled near Turners Hill and AV13, 2km west of Bonney's Plains.</p> <p data-bbox="608 1794 1401 1973">Hole AV12 intersected 158.73m of dolerite, 324.61m of Upper Parmeener Super-group and 6.99m of Lower Parmeener Super-Group. Hole AV13 intersected 307.46m of dolerite, 52.24m of the lower section of the Upper Parmeener Super-Group sequence. No significant coal seams were present in the holes. Shell relinquished the licence in July 1981 (Pemberton, 2013).</p>	Hole No.	Total Depth (m)	Comments	TAR 1	82.00	Coal measures at approx 3.5m.	TAR 2	84.90	Coal measures at approx 4.5m.	TAR 3	63.50	Dolerite to 7m. Coal measures at approx 32.5m.	TAR 4	60.00	No coal intersected.	TAR 5	78.00	No coal intersected.	TAR 6	3.80	Hole abandoned in dolerite.	TAR 7	60.00	No coal intersected.	TAR 8	80.00	Coal measures from approx. 5.2m.	TAR 9	78.00	No coal intersected.	From Depth (m)	To Depth (m)	Thick (m)	Inherent Moisture (% adb)	Ash (% adb)	Volatile Matter (% adb)	Fixed Carbon (% adb)	Crucible Swell Number	10.0	10.4	0.4	2.5	36.9	19.9	40.7	0.5	11.0	11.4	0.4	2.5	29.1	25.6	43.8	0.5	14.1	14.5	0.4	2.5	52.1	19.1	26.3	0.5	38.8	39.0	0.2	2.5	29.5	32.6	35.4	0.5	47.6	48.0	0.4	2.5	71.1	11.9	14.5	-	48.0	49.0	1.0	2.5	80.3	10.3	6.9	-	49.0	49.5	0.5	2.5	86.0	8.2	3.3	-
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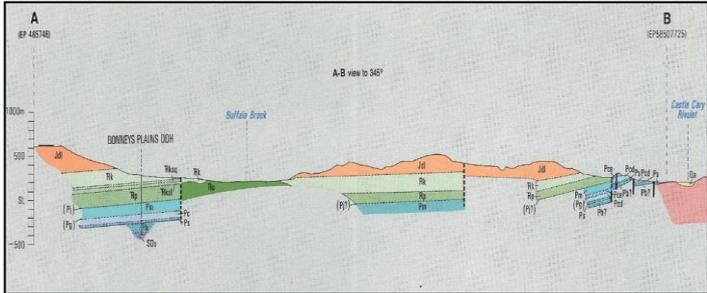
Criteria/JORC Code explanation	Commentary
	<p>Avoca Transport Company Pty Ltd (Avoca)</p> <p>Avoca conducted a review of the Stanhope Coalfield with the objective of identifying areas with potential for surface mining including pillars remaining in the abandoned underground workings.</p> <p>Nine (9) cored holes were drilled in 1986 and 1987 in the vicinity of the Stanhope workings and one (1) hole (ATS 56) drilled immediately south of the New Stanhope workings.</p> <p>It was noted that the geology of the area is complicated by the proximity to the Castle Carey fault with numerous associated faults seen in the mine workings. Dolerite has intruded the mine sequence and forms all the surrounding elevated areas.</p> <p>Avoca concluded that open cut mining potential was restricted to an area bounded by boreholes ATS 52 and 57 with a fault to the west, dolerite to the south and Old Stanhope to the north. The New Stanhope was dismissed as having little open cut potential because the pillars had been extracted and the steep topography and seam dip would limit accessible reserves.</p> <p>At the New Stanhope Colliery borehole ATS 56 intersected the seam at 20.43m. It has a competent sandstone roof and is comprised of two coal plies 2.61m and 1.06m thick (Pemberton, 2013).</p> <p>Merrywood Coal Company</p> <p>The Merrywood Coal Company evolved from the Avoca Transport Company and was granted EL 21/91 in 1993. Two (2) open holes (MS-1 and MS-2) were drilled in the Stanhope mine area to confirm resources and MS-3 was drilled and abandoned in dolerite talus south-east of the New Stanhope mine near Hercules Creek (Morrison, 1997 and Morrison, 1998).</p> <p>A 1,500-tonne bulk sample was extracted in 1997 and was processed through the Merrywood wash plant and trial burns were successfully conducted with existing Merrywood customers. The product coal was reported to have calorific value 5,490 - 6,450 kcal/kg. A programme of forty (40) air track boreholes was conducted to define the depth to the top of the main seam and locate seam fault displacements accurately. Eighteen (18) of these air track boreholes were surveyed however records are sketchy. The program also identified that an upper and lower seam that had not been previously mined was present above and below the main seam (the Stanhope). Mining Lease 1640P/M covering 249ha within the licence was granted to Merrywood in 1997 (Pemberton, 2013).</p> <p>Spitfire Resources</p> <p>Marston International Pty Ltd conducted an exploration drilling program on EL 27/2008 for Spitfire Resources in April and May 2010 (Fraser, 2012). Sixteen (16) open holes and two (2) cored holes were drilled for a total of 1,119.2m. None were geophysically logged.</p> <p>The holes were in the general vicinity of the Stanhope and New Stanhope mines. The objective of the drilling programme was to test for extensions of known coal occurrences around the historical mines, identify additional resource in previously unexplored areas and test</p>

Criteria/JORC Code explanation	Commentary
	<p>extensions of the seams beneath the dolerite cover.</p> <p>Seven (7) open holes collared in the dolerite were abandoned due to poor ground conditions. Six open holes successfully intersected coal measures beneath dolerite cover. Four (4) of the five (5) holes on the Triassic intersected coal measures with coal seams 0.5m - 3.0m thick. Rock chip samples were taken through the coal intervals but do not appear to have been analysed</p> <p>Two (2) cored holes were designed to sample the best coal intercepts located by the open hole drilling. Hole DDH001 was drilled to the north of the New Stanhope mine and intersected 2.4m of good quality coal. Hole DDH002 was drilled on the slopes of Greenstone Hill to the west of the Stanhope open cut and intersected 1.9m and 2.9m of high ash stony coal (Pemberton, 2013).</p> <p>Marston International concluded (Fraser, 2012):</p> <ul style="list-style-type: none"> • The coal measures have been confirmed as present for approximately 4km along the slopes of escarpments adjacent to Gipps Creek (in EL23/2010 to the north); • An extension of the underground resource was identified to the north of the New Fenhope mine. • The coal measures have been removed by erosion along the courses of the local streams. • Coal measure outcrops and seam intercepts were confirmed beneath the base of the dolerite in the area explored. • Access to drill sites designed to test coal measures beneath significant thicknesses of dolerite was extremely difficult due to the steep terrain. Only drill sites near the margin of the dolerite could be accessed. • Drilling through the dolerite to test the underlying coal measures is difficult and regional continuation of the seams has not been conclusively demonstrated to date. • Seam thickness is variable, coal quality appears to deteriorate rapidly in some areas, faulting is common and seam correlation is uncertain. • The presence of the nearby regional Castle Carey fault may have had a significant impact on structural disruption of the seams in the area. • The steep topography dictates there is no potential to identify open cut resource in the area explored. • The observed, reported and interpreted faulting indicates limited potential to identify extensive mineable underground resource in the area explored. • Additional exploration potential may exist further to the west where the influence of the Castle Carey fault is diminished, where dolerite cover appears thinner and topography is less rugged. <p>Fraser, (2012) concluded that:</p> <ul style="list-style-type: none"> • Further exploration of the lithic and feldspathic lithic sandstone facies in areas where the dolerite is not present, mainly along creeks and surrounding flat areas, is not justified as the unit appears to have been removed by erosion. • Further exploration around the New Stanhope mine is also not

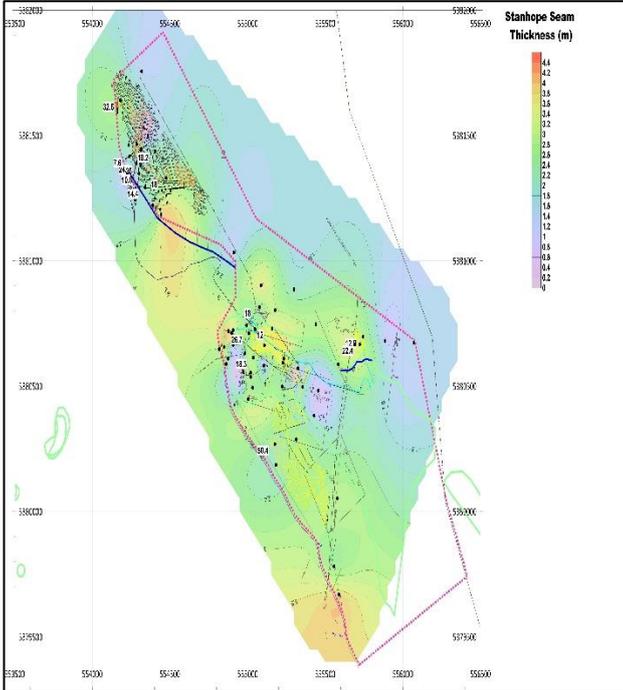
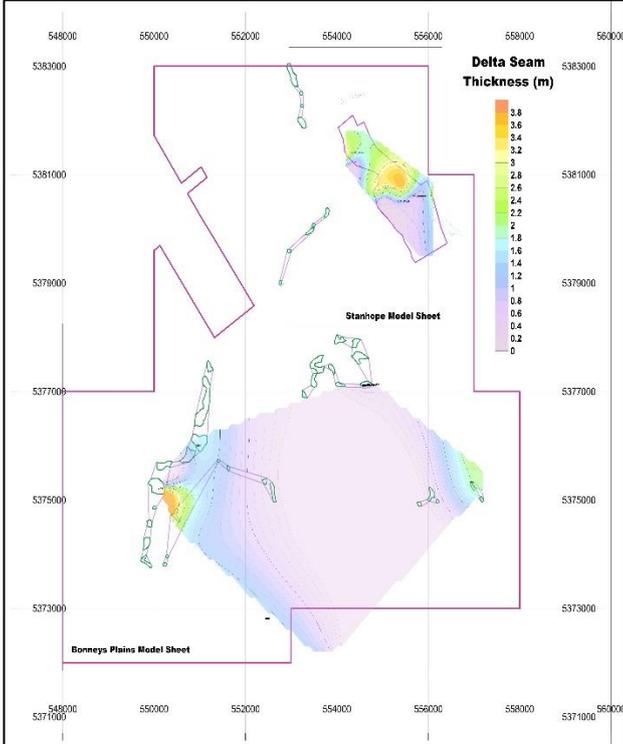
Criteria/JORC Code explanation	Commentary
	<p>warranted due to the presence of thick overlying dolerite, the close proximity to the Castle Carey Fault and deteriorated coal quality in nearby drill holes.</p> <ul style="list-style-type: none"> The only area recognised that has not been fully explored is the Bonney's Plains area approximately 3.5km south of the New Stanhope Open-cut. At Bonney's Plains, Hills et al, (1922) reported coal measures in the workings comprising thin coal and carbonaceous shale over 2m thick. The reported quality of samples collected and analysed by Hills indicated moderate to high ash (28.7%, adb). Western Mining Company intersected thin coal seams to the east of the workings in TAR 1. <p>Fraser, (2012) interpreted the drill hole intercept and seam exposures in the Bonney's Plains area to represent the basal section of the coal measures and that the upper part of the sequence remains untested. A drilling program of four (4) holes to test this interpretation was proposed but the program did not eventuate, with no holes drilled (Pemberton, 2013).</p>
<p>Geology</p> <p><i>Deposit type, geological setting, and style of mineralisation.</i></p>	<p>Regional Geology</p> <p>The exploration licence is located on the north-eastern margin of the Permo-Triassic Tasmania Basin. The basin basement consists of the Lower Palaeozoic Mathinna Beds and the Devonian Age Ben Lomond Granite. A generalised stratigraphic column is shown in Figure A1.</p> <p>Figure A1: Regional Stratigraphy of the Permo-Triassic Tasmanian Basin</p> <p>Modified after (Noldart, 1975)</p> <p>Parmeener Super Group</p> <p>The Parmeener Super Group is divided into lower and upper sections</p>

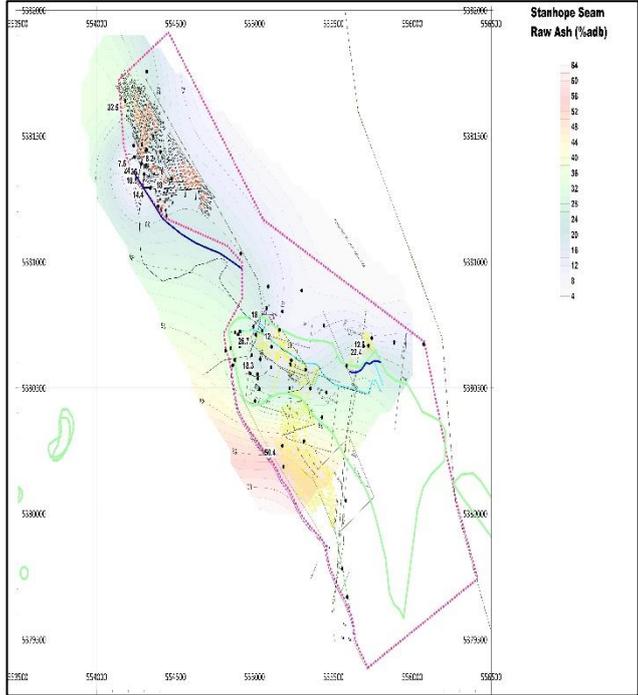
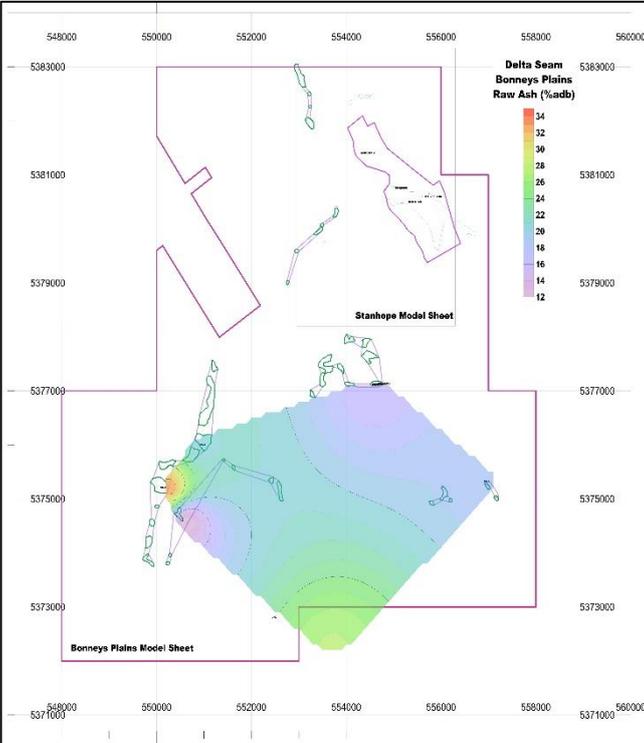
Criteria/JORC Code explanation	Commentary
	<p>of Permian and Triassic-age respectively. The two sections are disconformable. The Super Group contains three coal measure sequences, two occurring in the Permian section and the third within the Triassic. Within the tenure, coal seams of economic potential are restricted to the unnamed Triassic-age coal measure sequence (Water, 1978).</p> <p>Lower Parmeener Super Group</p> <p>The Lower Parmeener Super Group unconformably overlies the Silurian Mathinna Beds. No complete exposed section is present within the tenure.</p> <p>The basal unit Cascades Group comprises a sequence of mudstone and siltstone overlain by limestone. The lower mudstone/siltstone unit is up to 40 metres thick and is often fossiliferous. The limestone is usually highly fossiliferous and ranges in thickness from 10-50 metres.</p> <p>The Ferntree Group appears to conformably overlie the Cascades Group, although no contact was found outcropping within the tenure. The Ferntree Group comprises the Risdon Sandstone in the lower section and a dark grey silty mudstone-siltstone with occasional quartz grains and pebbles in the upper section. The Risdon Sandstone was not recognized in outcrop. The upper mudstone-siltstone unit ranges in thickness from 25-50 metres. No marine or plant fossils were found within this group (Water, 1978).</p> <p>Upper Parmeener Super Group</p> <p>Various sub-divisions of the Triassic sequence have been proposed since Hills et al, (1922) but are now considered obsolete (Bacon, 1991). Thus, the Triassic is now referred to as the Upper Parmeener Super Group with no further sub-division. Locally the coal measure sequence within the EL has been informally named the Avoca Coal Measures (Morrison, 1998), but no formal stratigraphic definition has been published.</p> <p>Outcrop of the coal measures in the valley floors and upper valley slopes is generally poor, due to alluvium and dolerite scree. However, good exposures of the coal measures and coal seams commonly occur within the various creek beds.</p> <p>The Triassic coal measure sequence consists of quartz sandstone with interbedded mudstone, siltstone and rare coal in the lower section, the feldspathic lithic sandstone with interbedded mudstone, siltstone, carbonaceous mudstone and coal in the upper section.</p> <p>Surface mapping by previous explorers and logging information from Mines Department boreholes within the tenure area indicate that the thickest coal seams occur within the upper 200 metres of the coal measures, and that the lower 100-metre-thick quartz sandstone (locally the Ross Sandstone) section is usually barren of coal. The quartz sandstone and interbeds in the lower section of the coal measures appear too thin to the east. In some parts of the area a thin pebble conglomerate/granular conglomerate occurs at the base of the Triassic.</p> <p>Cainozoic- Tertiary: No Tertiary-age sedimentary rocks or basalt have</p>

Criteria/JORC Code explanation	Commentary
	<p>been identified within the licence area (Bacon, 1986).</p> <p>Quaternary - Quaternary sediments are common within the licence and comprise alluvium on the South Esk River Valley floor and dolerite scree on the valley slopes and plateaus.</p> <p>The alluvium consists of silt and sand on the valley floors and swampy loam in the marshes on the plateaus. In the broader sections of the South Esk River Valleys the alluvium is believed to be up to 85m thick.</p> <p>Dolerite scree is common along the edges of the tiers and valley slopes. The scree ranges in size, from particles, up to blocks in excess of 10m in diameter. The abundance of dolerite scree on the slopes and in creek beds masks the dolerite/sedimentary contacts and complicates mapping and location of coal seams. In some creek beds exposed weathered dolerite scree is similar in appearance to weathered lithic sandstone. Thickness of the dolerite scree appears to vary from a thin veneer up to an estimated thickness of 40m on the northern slopes of Mount Christie (Pemberton, 2013).</p> <p>Igneous Rocks - Devonian Granite: The Upper Devonian age Ben Lomond granite intrudes the Mathinna Beds in the vicinity of Ben Lomond mineral field. The granite occurs in outcrop as low rounded hills and appears to have had some residual relief when the Permian age Lower Parmeener Super Group was being deposited. Tin mineralisation was associated with the intrusion of the granite and many tin, tungsten and uranium mines have operated near Mt Rex and Ben Lomond (Blissett, 1959).</p> <p>Jurassic Dolerite -The dolerite is of Upper Jurassic age and intrudes the Parmeener Super Group as a complex of sills, transgressive sheets and dykes. Within the tenement the dolerite usually intrudes the Upper Parmeener Super Group. North of Fingal the dolerite has been reported by Threader (1968) to intrude the Lower Palaeozoic Mathinna Beds. Dolerite outcrops over approximately 70% of licence area as plateau areas, due to its widespread intrusion and general resistance to weathering and erosion.</p> <p>The dolerite sills range in thickness from 2m in Buffalo Creek up to 307m intersected in Shell Historical hole AV13. The sills generally appear to have a thickness in excess of 200 m, especially the main 'upper sill' which forms the Mt. Foster-Fingal plateau. This 'upper sill' which has been exposed by erosion and caps the plateau appears to be a number of abutting sills formed from separate feeders.</p> <p>Structure -The dolerite sill capping the Ben Lomond Plateau, to the north of the Stanhope area, is at least 330m thick (Blissett 1959). The dolerite has intruded as a series of dykes and transgressive sheets, with minor faulting accompanying the intrusion.</p> <p>Both minor and major faulting occurs within the area, though the full extent of faulting is masked by the extensive Jurassic-age dolerite sills and Quaternary dolerite scree (see regional cross-section in Figure A2). Faulting within the tenement appears to have been associated with the intrusion of the Jurassic dolerite and Early Tertiary block movements Major faults developed during the Tertiary with the largest fault being</p>

Criteria/JORC Code explanation	Commentary
	<p>the NW-trending Castle Carey Fault, which may be traced for about sixteen (16) kilometres (Blissett, 1959). These faults have caused the formation of several horst and graben structures, which form the basis of the present-day topography (Blissett, 1959). To the south of the Stanhope-Mount Christie area the overall faulting pattern seems to consist of a series of step-faults to the south-east (Taylor, 1979).</p> <p>The general dip and strike of the strata is variable 5-25° to the southwest, with strike to the north-northwest. Mine workings have reported some seam rolls but these don't appear to have developed into large-scale folding. The dominant structural feature of the tenure is the Tertiary-aged Castle Carey Fault, which is upthrown 600-800m to the east. Mine workings have intersected many smaller mostly normal faults with throws ranging between 1-25m but with a wide spread of trends. These faults are often calcite-infilled and slickensided and did disrupt mining on numerous occasions. Work is progressing on capturing all the regional and mine-scale faulting, as no single coherent plan showing fault patterns in the area has been previously produced.</p> <p style="text-align: center;">Figure A2: Section A-B from Snowhill 1:50,000 sheet map</p>  <p style="text-align: center;"><i>Modified after (Gulline, Forsyth, Everard, Calver, & Matthews, 1991)</i></p>
<p>Drill hole Information</p> <p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <ul style="list-style-type: none"> o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length. <p><i>If the exclusion of this information is justified on the basis that the information is not material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	<p>The entire data set used for the two (2) models (Stanhope and Bonneys Plains) totals one hundred and sixteen (116) data points and is tabulated in Appendix 3. Channel samples were georeferenced off hand-copy mine plans and maps supplied by Hill (1922) and Threader (1968) locational accuracy varies but has been estimated to be ± 20_35m.</p>

Criteria/JORC Code explanation	Commentary
<p>Data aggregation method</p> <p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<p>The coal seams were modelled as recorded in the field geological records. Coal Quality was composited on a thickness x sample weight basis, where the coal seams were ply sampled. Generally, the channel samples were one bulk sample, except for the Fenhope Colliery sample which was ply sampled in great detail by the MRT.</p>
<p>Relationship between mineralisation widths and intercept lengths</p> <p><i>These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g 'down hole length, true width not known').</i></p>	<p>As there is no deviation data available for any borehole, the holes are assumed to be drilled as planned, all vertical. As the holes are shallow (mostly <150m) any true deviation from vertical will be very small (<2 degrees). Field logging records the apparent thickness, true vertical thickness are calculated by the software, using the dip surface of the roof and floor of each correlated seam.</p>
<p>Diagrams</p> <p><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></p>	<p>Plots of roof, thickness and raw ash have been generated for the Stanhope and Delta seams across each model area. These have been included below as Figures A3 to A6.</p>

Criteria/JORC Code explanation	Commentary
	<p data-bbox="730 338 1321 371">Figure A3: Stanhope Seam – Thickness Isopach (m)</p>  <p data-bbox="730 1120 1278 1153">Figure A4: Delta Seam – Thickness Isopach (m)</p> 

Criteria/JORC Code explanation	Commentary
	<p style="text-align: center;">Figure A5: Stanhope Seam – Raw Ash (% adb)</p>  <p style="text-align: center;">Figure A6: Delta Seam – Raw Ash (% adb)</p> 

Criteria/JORC Code explanation	Commentary
<p>Balanced reporting</p> <p><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</i></p>	<p>All available data from previous explorers was used where it could be confidently located. About 20% of all data could not be successfully located, and as such was discarded from the model.</p>
<p>Other substantive exploration data</p> <p><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></p>	<p>There is no other substantive data other than MRT open-file airborne geophysical surveys and surface geochemical sampling which does show some Sn (tin) anomalism on the eastern edge of the tenure.</p> <p>No detailed ground geophysical surveys have been carried out.</p>
<p>Further work</p> <p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<p>Further work should include</p> <ul style="list-style-type: none"> • A ten (10) hole drilling program consisting of three (3) partially-core holes and seven (7) rotary chip holes, • Downhole geophysically logging, • CQ sampling and analysis.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

CRITERIA /JORC Code Explanation	COMMENTARY
<p>Database integrity</p> <p><i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.</i></p>	<p>All relevant geological data was loaded and validated to Minescape GDB relational database. Coal seam correlation and validation was achieved through the creation of east – west and north-south cross sections and reference to mine plans. Hard copy seam roof data for the Stanhope seam at New Stanhope was also used for validation and included in the models.</p>
<p>Site visits</p> <p><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></p>	<p>Mr Mark Biggs (competent person) has visited the area on numerous occasions and has 32 years coal exploration and evaluation experience and 22 years coal mine site experience.</p>
<p>Geological interpretation</p>	<p>The confidence of the model is supported by numerous mine</p>

CRITERIA / JORC Code Explanation	COMMENTARY
<p><i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made.</i></p> <p><i>The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.</i></p>	<p>plans and records of mining. Seam correlation and cross-section interpretation has shown that the Stanhope seam is the same as the Fenhope and New Stanhope seams. The Delta seam is well defined. The other lesser seams below the Delta are less confidently correlated. All seams were clipped in the model where the raw ash >55% adb.</p>
<p>Dimensions</p> <p><i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i></p>	<p>The Old and New Stanhope workings and unmined coal extend for 3,200m in a north-to-south direction and 1,350m from west-to-east. The Bonneys Plains workings extend for 7,000m east-to-west, 6,200 north-to-south, including some isolated adits and shafts on the southern flanks of Mt Christite near the south Esk River.</p>
<p>Estimation and modelling techniques</p> <p><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></p> <p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</i></p> <p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables.</i></p> <p><i>Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping.</i></p> <p><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></p>	<p>The model was constructed using the mine planning software Minescape Stratmodel 5.12 as a stratiform model. Thicknesses were estimated and extrapolated using the planar method, whereas structure roof and floor use the FEM (finite element mesh) method. 5,000m was used as a search radius and the thickness limits were set between 0.05-10m. Extrapolation past the last data point was set to 2,500. The resultant grid mesh was created a 25m x 25m cell size. A total of sixty-nine (69) faults were modelled, most of them normal, with small throws. Model validation was achieved by company borehole and model data and statistical error analysis using the “leave one out” method. Raw coal quality ply analyses were loaded to Minescape tables and composited against coal seams in the drillholes. The overall relative errors in the model vary between 5-25% in thickness.</p> <p>Once coal seam groups were reasonably correlated and grid mesh models of roof, floor and thicknesses were generated, gross insitu tonnes are calculated inside resource mask areas (see Table 10) using the following formulae (Equation 1):</p> <p>Equation 1: area x thickness x relative density x geological loss</p> <p>The geological loss factor is explained the section Cut-off Parameters. Loss factors of between 5-20% were applied to various seams, depending upon the resource classification and the standard error of the seam thickness.</p>

CRITERIA /JORC Code Explanation	COMMENTARY
<p>Moisture</p> <p><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></p>	<p>The model was created on an air-dried basis as there were no Total or Equilibrium Moisture Analyses were available. The average inherent moisture across the deposit is 3.2%</p>
<p>Cut-off parameters</p> <p><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></p>	<p>Constraints on the Resource Estimates are as follows:</p> <ul style="list-style-type: none"> • Coal seams not intruded or outside the tenement boundaries of E11_2015. • Coal Thickness <0.2m excluded from reporting. • The Depth range of the estimation was from the base of weathering to 300m below surface. • Coal seams >55% adb from coal quality or estimated from downhole density logs (in g/cc) excluded from the calculations. • A discount factor varying from 10 to 25% has been subtracted from the initial calculation for unexpected geological losses. This accounts for unexpected conditions such as seam thinning, splitting, or seams missing in batten zones around faults. • The mine planning package used as was Datamine’s Minescape Stratmodel. Seam structure and thickness contours were generated using standard modelling algorithms and methodologies. Inferred masks were generated from base circles drawn 1,500m between points of Observation. • Points of Observation (Appendix 3) were defined as those boreholes that had known surveyed positions, detailed lithological logs and coverage of the target coal seams with a suite of downhole geophysical logs that must include density in units of Kg/m³, or laboratory quality results.
<p>Mining factors or assumptions</p> <p><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></p>	<p>Modelling of the coal seams showed that an open-cut operation could be viable given suitable Thermal Coal prices. This mining assumes that underground remaining pillars will be recovered by open-cut methods.</p> <p>An assessment of Reasonable Prospects criteria is required to ensure the reporting of 2012 JORC Inferred Resources. A preliminary analysis has shown that this condition is met through the fact that prior mining has taken place and that a saleable product could be economically mined and sold using open-cut mining methods, probably by a scaled truck and shovel given the size of the deposit.</p>

CRITERIA /JORC Code Explanation	COMMENTARY
<p>Metallurgical factors or assumptions</p> <p><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.</i></p> <p><i>Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></p>	<p>There are sufficient washability and sizing data to show that the Stanhope seam can be successfully washed using standard wash-plant technology and that products will produce 8-12% ash coal at 70-80% yield.</p>
<p>Environmental factors or assumptions</p> <p><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation.</i></p> <p><i>While at this stage the determination of potential environmental impacts, particularly for a green fields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported.</i></p> <p><i>Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></p>	<p>As the majority of the resources were contained with areas that had been previously mined, environmental factors will have to assess the archaeological values of the historical railway, roads, and plant still on site.</p>
<p>Bulk density</p> <p><i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></p> <p><i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<p>Many air-dried relative density tests have been conducted. There are no moisture holding capacity or Total Moisture tests available to create a Preston and Sanders conversion, so that instead a lookup table for all seams was constructed using the formulae wet insitu density = laboratory relative density (ad)-0.025. The look-up values were used for the resource calculations.</p>
<p>Classification</p> <p><i>The basis for the classification of the</i></p>	<p>Although there has been 93 years of sporadic mining at Avoca West the Competent Person has deemed that the remaining</p>

CRITERIA / JORC Code Explanation	COMMENTARY
<p><i>Mineral Resources into varying confidence categories.</i></p> <p><i>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></p> <p><i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></p>	<p>insitu resources can only be reported to the level of Inferred until further drilling and coal quality testing outlined in this report and in Biggs (2020). The main reasons given are a lack of very accurate locational maps for the historical mining, georeferencing errors associated with siting the historical boreholes, adits and shafts, and the lack of downhole geophysical logging.</p>
<p>Audits or reviews</p> <p><i>The results of any audits or reviews of Mineral Resource estimates.</i></p>	<p>No external reviews or audits have been undertaken.</p>
<p>Discussion of relative accuracy/ confidence</p> <p><i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></p> <p><i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></p>	<p>The relative error of the Inferred Resources is estimated at $\pm 30\%$ given a preliminary geostatistical analysis. This level of error is consistent with the resource class estimated.</p>

APPENDIX 2: AVOCA WEST MODEL COMPLETION CERTIFICATE

Geological Model Completion Certificate		
Site / Project	Avoca West Coal Project	
Software Platform	Minescape v5.12	
Modules	GDB and Stratmodel	
Modeller	Mark Biggs	
Technical Specialist (GDB)	Mary Nowland	
Competent Person	Mark Biggs	
Purpose of model	<i>Coal structural and raw coal quality model in GDB/Stratmodel to be used for scoping study-level mine planning and JORC reporting (Inferred Resources) for Avoca Coal Measures</i>	
Release Directory	P:/Projects/JNC_Avocaw_f_20m1	
Date completed/released	28/03/2020	
Structure Model	File Name	Comments
Schema/s	Avocaw_f_20m1	
Topo file/s	Avocaw_topo.dgn	
Table file/s	Avocaw_f_20m1	
Grid file/s	Avocaw_f_20m1	
Borehole/s	Avocaw_dholes_apr20.dgn	
Survey file/s	Avocaw_survey.dgn	
Fault/s	Avocaw_faults.dgn	
Cadastral file/s	Avocaw_1954_plans.dgn	
Contours, posts, Lox's	Avocaw_cont_apr20.dgn	
Cross-section	Avocaw_3d_xs_apr20.dgn	
JORC Masks, calculations	Avocaw_jorc.dgn	
Model generation report/s	Avocaw_f_20m1_tablerun_v5; Avocaw_f_20m1_gridrun_v4.rpt	
Quality Model	File Name	Comments
Schema/s	Avocaw_f_20m1	
Report files	Samp_raw_load_v2	
Load table	Avocaw_raw_samp	
Composite table	Avocaw_raw_comp	
Washability table	-	
Grid files	-	
Review	Yes/No	Date
Modeller checks	Yes	26/03/2020
Peer review	Yes	30/03/2020
Internal audit	No	
External audit	No	

APPENDIX 3: ALL MODELLLED HOLES & CHANNEL SAMPLES

Borehole/Channel ID	Easting	Northing	AHD	Hole/Sample Type
AV0012	555862.8	5375634	474.62	HQ
AV0013	548362.8	5372934	494.03	HQ
BP_ADIT_1	554555.2	5377100	333	Adit/Shaft Channel Sample
BP_ADIT_2	554610.3	5377091	330.6	Adit/Shaft Channel Sample
BP_ADIT_3	554668	5377113	333	Adit/Shaft Channel Sample
BP_ADIT_4	551244	5374874	200	Adit/Shaft Channel Sample
BP_ADIT_5	550651.3	5374560	229	Adit/Shaft Channel Sample
BP_ADIT_6	551357.3	5375059	219.8	Adit/Shaft Channel Sample
BP_ADIT_8	550920	5375985	261	Adit/Shaft Channel Sample
DOM001_BON	550286.8	5375284	281.36	NQ/HQ
DOM008_BON	553112.8	5377184	254.5	NQ/HQ
ESK_RV_1	553716	5372214	190.5	Adit/Shaft Channel Sample
ESK_RV_2	557027	5375313	252	Adit/Shaft Channel Sample
ESK_RV_3	554571	5372862	200	Adit/Shaft Channel Sample
ESK_RV_4	552489	5372699	200	Adit/Shaft Channel Sample
ESK_RV_5	556055	5373553	190	Adit/Shaft Channel Sample
ESK_RV_6	557167	5375117	250.7	Adit/Shaft Channel Sample
SFR016A	557244.5	5376730	336.18	RAB
SFR016B	557439.4	5376879	298.93	RAB
TAR001	554028.3	5377222	295.58	RAB
TAR002	550265	5375211	278.19	RAB
TAR003	552678.2	5374701	248.1	RAB
TAR005	551986.8	5374519	200	RAB
TAR006	550962.8	5372984	264.93	RAB
TAR007	551086.8	5373180	227.64	RAB
TAR008	557145.8	5375379	249.81	RAB
ADIT_1_NSC	554260.0	5381439.0	439.0	Adit/Shaft Channel Sample
ADIT_2_NSC	554284.0	5381390.0	440.0	Adit/Shaft Channel Sample
ADIT_3_NSC	554339.7	5381293.0	442.0	Adit/Shaft Channel Sample
ADIT_4_NSC	554300.5	5381348.6	441.0	Adit/Shaft Channel Sample
ADIT_5_SHC	555183.0	5380186.0	469.5	Adit/Shaft Channel Sample
ATS051	555393.9	5380654.0	478.5	RAB
ATS052	555105.0	5380582.0	482.6	RAB
ATS053	555441.8	5380425.0	476.9	RAB
ATS054	555427.3	5380383.0	483.2	RAB
ATS055	554862.1	5380589.0	460.5	RAB
ATS056	554442.2	5381184.0	466.7	RAB
ATS057	554982.2	5380631.0	461.8	RAB
ATS058	555232.2	5380610.0	478.5	RAB
ATS059	555324.3	5380572.0	480.0	RAB
ATS060	555396.9	5380647.0	478.8	RAB
DOM_A_NSC	555455.0	5380482.0	470.7	RAB
DOM_FH01	555076.8	5380816.0	456.0	Adit/Shaft Channel Sample
DOM001_OSC	555555.5	5379781.0	541.0	NQ/HQ
DOM002_OSC	555459.5	5379874.0	561.2	NQ/HQ
DOM003_OSC	555588.1	5379669.0	554.2	NQ/HQ
DOM004_OSC	555564.6	5379567.0	576.0	NQ/HQ
DOM005_OSC	555595.8	5379509.0	573.7	NQ/HQ
DOM006_OSC	555551.4	5379518.0	591.6	NQ/HQ
DOM007_NSC	555313.0	5380784.0	496.0	NQ/HQ
DOM010_NSC	555292.5	5380774.0	493.2	NQ/HQ
DOM011_NSC	555086.8	5380902.0	477.3	NQ/HQ
DOM012_NSC	554911.9	5381033.0	454.6	NQ/HQ
DOM013_NSC	554249.5	5381353.0	441.0	NQ/HQ

Borehole/Channel ID	Easting	Northing	AHD	Hole/Sample Type
DOM014_NSC	554310.9	5381402.0	460.0	NQ/HQ
DOM015_NSC	554312.3	5381442.0	470.7	NQ/HQ
DOM016_NSC	554358.2	5381499.0	492.3	NQ/HQ
DOM017_NSC	554317.0	5381756.0	497.2	NQ/HQ
DOM020_NSC	554234.0	5381462.0	450.9	NQ/HQ
MC_ADIT_1	555882.0	5380424.0	462.0	Adit/Shaft Channel Sample
MC_CH1	555743.0	5380697.0	464.2	Adit/Shaft Channel Sample
MC_CH2	555691.0	5380666.0	459.0	Adit/Shaft Channel Sample
MC_CH3	555722.0	5380667.0	461.7	Adit/Shaft Channel Sample
MWC_1A	554896.9	5380711.0	438.6	AirTrack RAB
MWC_1AA	554876.6	5380720.0	437.5	AirTrack RAB
MWC_2A	554848.8	5380657.0	443.8	AirTrack RAB
MWC_2AA	554816.8	5380648.0	444.4	AirTrack RAB
MWC_3A	554769.0	5380705.0	432.2	AirTrack RAB
MWC_3AA	554795.7	5380752.0	435.1	AirTrack RAB
MWC_4A	554720.4	5380770.0	425.3	AirTrack RAB
MWC_5A	554711.8	5380616.0	428.3	AirTrack RAB
MWC_7A	554874.6	5380610.0	457.7	AirTrack RAB
MWC_7AA	554907.0	5380665.0	441.0	AirTrack RAB
MWC_7AAA	554907.8	5380724.0	439.7	AirTrack RAB
MWC_AIRSHAFT	555108.5	5380663.0	466.6	AirTrack RAB
MWC_B	555018.6	5380554.0	477.0	AirTrack RAB
MWC_D	554931.3	5380541.0	466.9	AirTrack RAB
MWC_E	554972.3	5380557.0	472.6	AirTrack RAB
MWC_F	554955.6	5380500.0	478.2	AirTrack RAB
MWC_G	555003.7	5380448.0	488.7	AirTrack RAB
MWC_H	555032.1	5380494.0	494.8	AirTrack RAB
MWC_I	554942.1	5380327.0	486.2	AirTrack RAB
MWC_JM13	555227.5	5380593.0	479.0	AirTrack RAB
MWC_MS01	555021.0	5380537.0	482.4	AirTrack RAB
MWC_MS02	555222.0	5380499.0	491.2	AirTrack RAB
MWC_MS03	554873.3	5381005.0	447.8	AirTrack RAB
MWC_TP96_1	555036.8	5380614.0	459.0	Adit/Shaft Channel Sample
OLD_STAN	555313.0	5380288.0	481.0	Adit/Shaft Channel Sample
OSH_ADIT_1	555158.0	5380730.0	457.2	Adit/Shaft Channel Sample
OSH_ADIT_2	555049.0	5380727.0	452.3	Adit/Shaft Channel Sample
OSH_ADIT_3	555008.0	5380711.0	448.7	Adit/Shaft Channel Sample
OSH_ADIT_4	555354.0	5380497.0	469.0	Adit/Shaft Channel Sample
OSH_BH1	555256.1	5380705.0	200.0	Adit/Shaft Channel Sample
OSH_BH2	555372.4	5380314.0	200.0	Adit/Shaft Channel Sample
SFR001	553992.3	5382633.0	511.0	RAB
SFR001C	554181.1	5381640.0	464.2	HQ
SFR002	553624.5	5382323.0	436.1	RAB
SFR002C	555175.9	5380269.0	540.5	HQ
SFR003	555884.8	5380680.0	504.0	RAB
SFR004	556070.4	5380673.0	514.4	RAB
SFR005	555298.6	5380886.0	511.0	RAB
SFR006	555176.1	5380803.0	484.0	RAB
SFR007	554990.1	5380344.0	493.6	RAB
SFR008A	554506.6	5379397.0	472.8	RAB
SFR008B	554473.2	5379562.0	439.8	RAB
SFR009	555583.1	5380587.0	485.6	RAB
SFR010	555439.0	5380747.0	503.4	RAB
SFR011	554389.9	5381221.0	461.4	RAB
SFR012	553109.1	5382577.0	429.6	RAB
SFR013	555966.1	5379568.0	475.9	RAB

Borehole/Channel ID	Easting	Northing	AHD	Hole/Sample Type
SFR014	555577.7	5380052.0	506.0	RAB
SFR015	555436.8	5381205.0	560.8	RAB
WS_123	554316.3	5381447.0	438.2	Adit/Shaft Channel Sample
WS_128	554404.0	5381437.0	429.3	Adit/Shaft Channel Sample
WS_134	554475.1	5381331.0	425.2	Adit/Shaft Channel Sample
WS_167	554286.4	5381466.0	440.1	Adit/Shaft Channel Sample

APPENDIX 4: POINTS OF OBSERVATION

Model	Borehole Name	Geophysical Log	Coal Quality	Model	Borehole Name	Geophysical Log	Coal Quality
Stanhope	ADIT_1_NSC	N	Y	Bonneys Plains	AVO012	N	N
Stanhope	ADIT_2_NSC	N	Y	Bonneys Plains	AVO013	N	N
Stanhope	ADIT_3_NSC	N	Y	Bonneys Plains	BP_ADIT_1	N	N
Stanhope	ADIT_4_NSC	N	Y	Bonneys Plains	BP_ADIT_2	N	Y
Stanhope	ADIT_5_SHC	N	Y	Bonneys Plains	BP_ADIT_5	N	Y
Stanhope	DOM_FH01	N	Y	Bonneys Plains	ESK_RV_6	N	Y
Stanhope	MC_ADIT_1	N	Y	Bonneys Plains	SFR016B	Y	N
Stanhope	MC_CH1	N	Y	Bonneys Plains	TAR001	Y	N
Stanhope	MC_CH3	N	Y	Bonneys Plains	TAR002	Y	Y
Stanhope	MWC_TP96_1	N	Y	Bonneys Plains	TAR003	Y	N
Stanhope	OLD_STAN	N	Y	Bonneys Plains	TAR005	Y	N
Stanhope	OSH_ADIT_1	N	Y	Bonneys Plains	TAR006	Y	N
Stanhope	OSH_ADIT_2	N	Y	Bonneys Plains	TAR007	Y	N
Stanhope	OSH_ADIT_3	N	Y	Bonneys Plains	TAR008	Y	N
Stanhope	OSH_ADIT_4	N	Y				
Stanhope	SFR001C	Y	Y				
Stanhope	SFR002C	Y	Y				
Stanhope	SFR003	Y	N				
Stanhope	SFR004	Y	N				
Stanhope	SFR005	Y	N				
Stanhope	SFR006	Y	N				
Stanhope	SFR007	Y	N				
Stanhope	SFR009	Y	N				
Stanhope	SFR010	Y	N				
Stanhope	SFR011	Y	N				
Stanhope	SFR013	Y	N				
Stanhope	SFR014	Y	N				
Stanhope	WS_123	N	N				
Stanhope	WS_128	N	Y				
Stanhope	WS_134	N	Y				