



EL1/2015

AVOCA WEST COAL PROJECT

**ANNUAL REPORT FOR THE PERIOD
24TH APRIL 2017 TO 23RD APRIL 2018**

Tenement Holder:	Junction Coal Pty Ltd
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GEOLOGICAL CONSULTANTS

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Executive Summary

EL1/2015 Avoca West Coal Project is held 100% by privately-owned company Junction Coal Pty Ltd which has just completed Year 3 exploration activities for the tenement. These include:

- Compilation and encoding of all available coal quality data;
- Digitising and registering to MGA zone 55 of all historical mine plans for the Old and New Stanhope Collieries, Fenhope Colliery, 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;
- Seam correlation, modelling, and resource estimation to the 2012 JORC Code standard;

The difficulty in correlating some of the seams outside the mined areas delayed the completion of the coal quality model and subsequently the resource estimate. Structural modelling validated previous reporting, indicating a general dip of 5° to 15° (degrees) on the limbs of a faulted anticlinal axis. Faulting is mostly at mine scale (2-6m) but has disrupted mining in the past.

The main recommendation to arise from the modelling exercise is the need for more drilling to supplement the coal quality from sparse historical drilling and ambiguously located underground channel sampling. Therefore, a ten (10) hole drilling program, including three (3) large diameter cored holes are required to test float/sink washability and potential coking properties of the main target seams (Stanhope and Delta) at the Mt Christie and Bonney's Plains localities. The drilling program is planned to commence in Quarter 2 2019.

Introduction

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 (Table 1). 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 straddles the southwestern EL boundary. The tenure covers an area of 82km² (Figure 2).

This report documents the 12 months of exploration activities completed for Year 3, the current reporting period which ended on the 23rd April 2018.

Table 1: 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: EL1/2015 Location

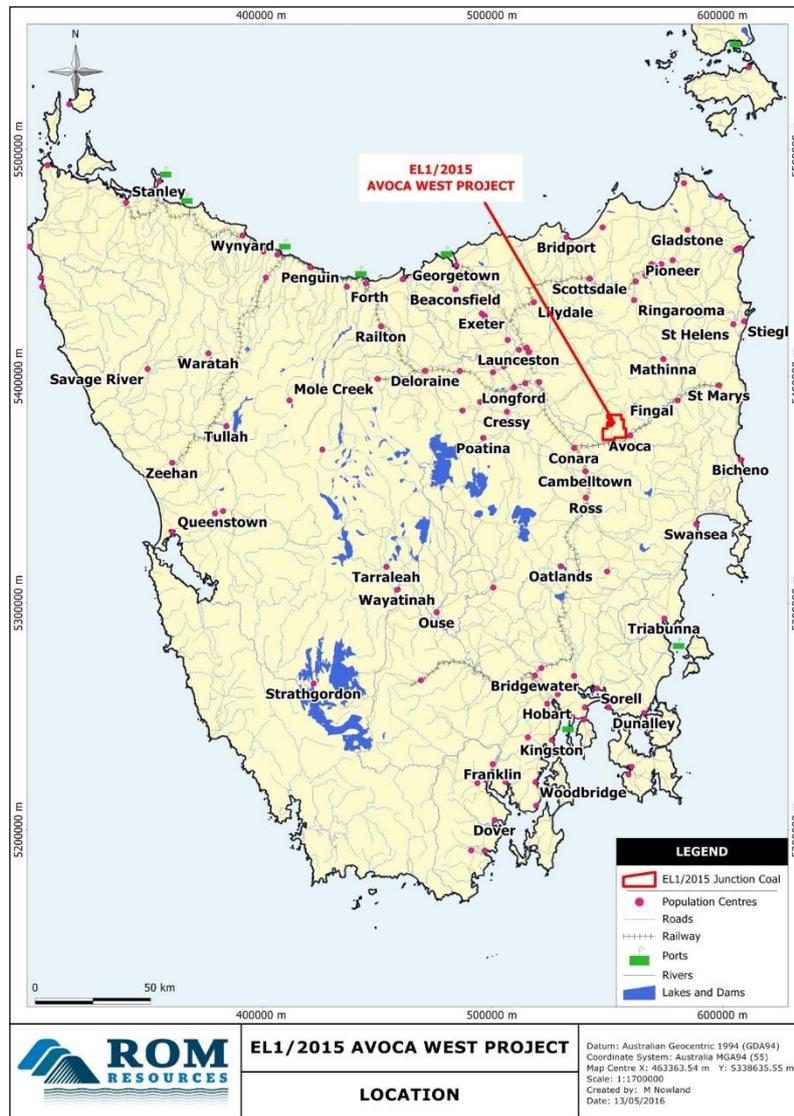
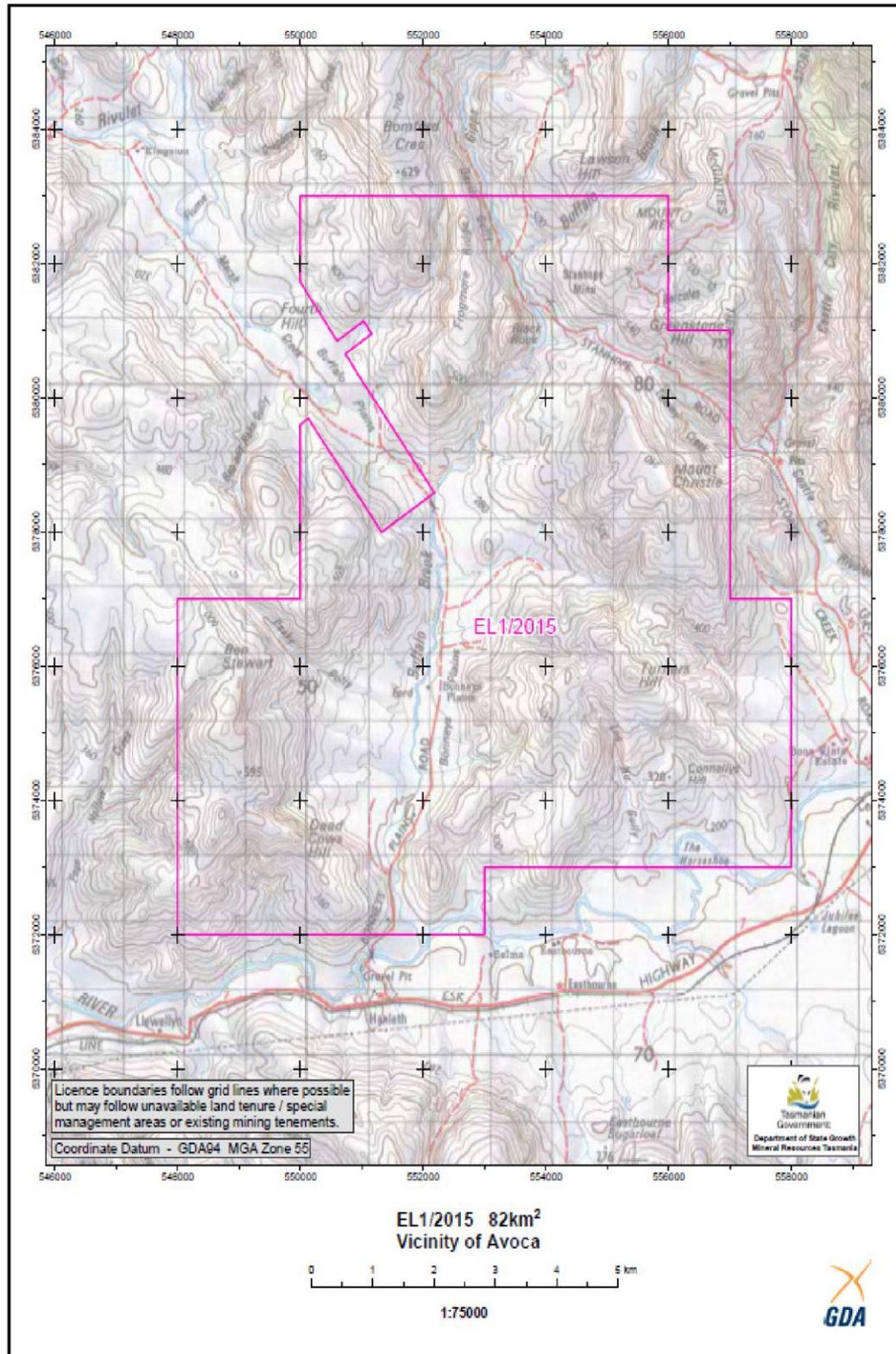


Figure 2: EL1/2015 Tenement



Source: Mineral Resources Tasmania, (2015)

Review of Previous Work

Year 1: No field work was undertaken during the reporting period however the following activities were completed:

- The re-logging and photography of the coal-bearing intervals missing from DOM Bonneys Plains No. 1 core data which is housed in the MRT Core Shed at Mornington, Hobart.
- Resolution of the stratigraphy, seam nomenclature and seam correlations for the study area;
- Creation of the geological database “Avoca West”;
- Compilation and encoding of historical borehole locations to the database;
- Compilation and encoding of historical lithological borehole data (in CoalLog format) to the database;
- Correlation of seam picks;
- Compilation and encoding of all available coal quality data;

Year 2: No field work was undertaken during the reporting period however the following activities were completed:

- Continuation of Year 1’s activities;
- Obtained more historical plans and geo-registered workings;
- Digitising and registering to the current Geodatum GDA94 zone 55 of all historical mine plans for the Old and New Stanhope Collieries, Fenhope Colliery, 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;
- Began structural and coal quality models
- Began initial resource modelling and estimation;

Exploration Completed during the Reporting Period

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 has been rescheduled due to a delay in funding.

No other 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. Some of these issues were resolved during this reporting period with the assistance of the Mineral Resources of Tasmania (MRT):

1. Many reports researched quoted "Threader (1968)" however no electronic copy could be located by MRT. During the period the actual hardcopy of Threader (1968) was found within the MRT archives and subsequently copied and released on open-file;
2. Numerous discussions have taken place between the MRT and Junction Coal regarding 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 zone 55 coordinate system of all historical mine plans for the Old and New Stanhope Collieries, Fenhope Colliery, other Stanhope exploratory adits and shafts, 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).

The deposit is being correlated and modelled in Minescape mine planning software, with the following tasks either completed or nearing completion:

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.

The last three activities have taken longer to complete than anticipated due to the locational ambiguity of some coal quality sampling, particularly the underground channel samples. Considerable effort was made to include this data in the model as most sampling also included detailed lithological descriptions across the entire exposed seam. This has delayed the modelling and resource reporting until the next period. Seam nomenclature and seam correlations are also taking time to resolve. Despite the extensive mining history, the lack of modern downhole geophysical logging has hampered seam correlation and painstaking matching to available mine records has been required.

Discussion of Results

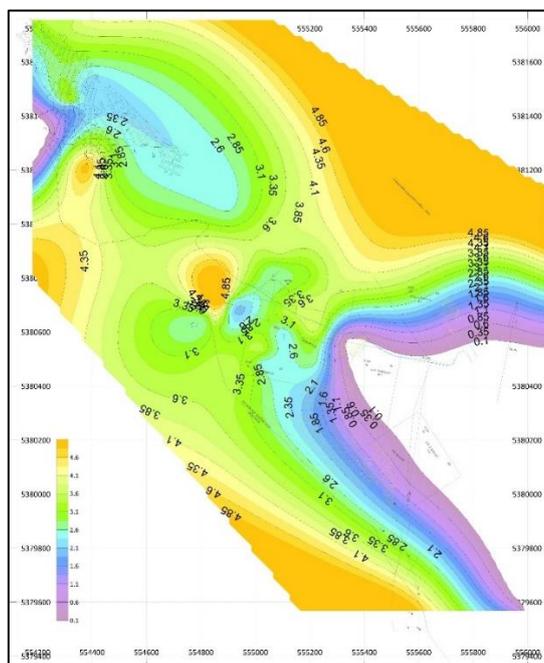
The mine planning package Minescape 5.12 was used to generate a grid mesh model. The seam statistics for the current model are given in Figure 3.

Figure 3: Avoca West Minescape Model Seam Statistics

DRILLHOLE STATISTICS									
INTERVAL	NUMBER	AVERAGE	MINIMUM	MAXIMUM	S.D.	SEAKNESS	FURTOSIST	HOLE NAME	HOLE NAME
ALPHA	5	0.920	0.050	2.070	0.797	0.345	-1.074	RG1	DOM01_OSC
BETA	12	-0.654	-0.090	2.000	-0.602	1.021	-0.039	DDH15	SFR010
FEN	8	1.265	-0.500	2.060	-0.547	0.358	-1.057	SFR009	DOM09_MSC
SHU	28	1.886	-0.060	5.890	1.345	-0.214	-0.795	SFR002C	DOM01_MSC
SHL	52	2.520	0.080	5.000	1.127	-0.149	-0.271	DOM013_MSC	MNC_IAR
DELTU	0	-	-	-	-	-	-	RG3	DOM015_MSC
DELTA	14	-1.459	-0.130	4.500	-1.353	1.220	-0.271	RG3	TAR008
GAMMA	10	1.011	0.170	2.500	0.866	1.854	-2.552	DDH12	TAR001
ETA	13	-0.983	-0.100	2.750	-0.817	1.094	-0.138	TAR002	SFR011
THETA	4	1.355	-0.670	3.000	-1.106	1.100	-0.712	DOM001_BON	TAR002
IOTA	6	1.033	0.400	2.000	0.596	0.485	-0.993	DOM001_BON	DOM001_BON
BHQA	1	267.760	267.760	267.760	-	-	-	DOM001_BON	DOM001_BON
BHRE	12	293.035	196.000	477.356	90.185	1.253	-0.287	TAR005	MNC_M802
ALPHA_FLOOR	5	547.343	497.420	584.900	39.406	-0.392	-1.668	78R02	RG1
BETA_FLOOR	5	546.423	496.310	584.900	39.987	-0.382	-1.682	78R02	RG1
FEN_FLOOR	12	505.828	452.010	583.370	44.675	-0.437	-1.140	78R02	RG1
SHU_FLOOR	12	505.174	450.830	583.320	44.839	-0.447	-1.135	78R02	RG1
SHL_FLOOR	8	478.144	465.340	506.660	13.283	-1.238	-0.729	DOM016_MSC	SFR002C
DELTA_FLOOR	8	476.879	464.190	505.670	13.387	-1.260	-0.732	DOM016_MSC	SFR002C
ETA_FLOOR	28	480.246	431.875	576.780	40.384	-1.119	-0.528	MNC_IAR	RG1
THETA_FLOOR	28	478.359	430.075	576.100	40.514	-1.171	-0.414	MNC_IAR	RG1
IOTA_FLOOR	52	463.961	421.075	596.350	43.187	-1.570	-1.499	MNC_IAR	RG2
DELTU_FLOOR	11	503.727	414.530	595.450	40.567	-1.571	-1.507	DDH8A	RG2
DELTA_FLOOR	11	503.223	413.740	595.090	40.545	-0.094	-1.467	DDH8A	RG2
GAMMA_FLOOR	0	-	-	-	-	-	-	-	-
ETA_FLOOR	14	495.572	215.810	549.670	88.586	-1.207	-0.970	TAR008	RG3
THETA_FLOOR	14	494.114	211.310	548.940	89.759	-1.212	-0.970	TAR008	RG3
BHJD	0	-	-	-	-	-	-	-	-
GAMMA_FLOOR	10	409.536	254.060	515.730	88.846	-0.892	-0.470	AVD012	78R01
ETA_FLOOR	10	408.523	253.760	515.230	89.355	-0.892	-0.473	AVD012	78R01
THETA_FLOOR	13	370.898	206.100	501.980	96.029	-0.460	-1.121	TAR003	78R01
IOTA_FLOOR	13	370.016	204.000	501.460	96.165	-0.457	-1.113	TAR003	78R01
DELTU_FLOOR	4	273.697	206.310	414.020	94.708	-1.068	-0.724	AVD012	SFR003
DELTA_FLOOR	4	272.542	205.560	413.020	94.845	-1.076	-0.719	AVD012	SFR003
THETA_FLOOR	6	318.323	184.220	494.220	127.651	-0.218	-1.585	AVD012	78R01
IOTA_FLOOR	6	317.270	182.900	493.510	127.893	-0.218	-1.585	AVD012	78R01
DELTU_FLOOR	6	235.880	82.510	309.000	77.267	-0.394	-0.669	AVD012	TAR009
DELTA_FLOOR	28	387.714	152.400	582.350	118.973	-0.196	-0.711	GY15	FT_83

Figure 4 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 has been completed. The generation of raw and clean coal composite grids were still in progress at the end of the reporting period and will be completed in Year 4.

Figure 4: Stanhope Seam Thickness Isopach (m)



Conclusions

The following tasks were completed during the reporting period:

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 coal seam structural model.

All of these activities have taken longer to complete than anticipated due to the ambiguity between the available historical maps and “as-mined” data. This has delayed the coal quality modelling and resource reporting until the next period (Year 4). Seam nomenclature and seam correlations took time to resolve. Despite the extensive mining history, the lack of modern downhole geophysical logging has hampered seam correlation outside the mined area.

Nonetheless, Junction Coal remains optimistic and considers the following as pointers towards success:

- Identified remaining resources are in the order of 10-15Mt;
- The area is in the known Tasmanian coalfields/coal mining area;
- The Tasmanian Government looking for projects to create local jobs;
- The MRT has indicated granting of a mining lease possible;
- Australian Bauxite Limited (ASX: ABX) are mining bauxite nearby at Campbelltown so some infrastructure and equipment available;
- Proving a semi-soft coking coal resource in the unmined D seam would increase the valuation of the project;

Future exploration is directed towards completing a large diameter drilling program to clarify that the coking properties of the Delta and Gamma seams can produce a semi-soft coking product. A small operation of 1-2Mt per annum could be sustained from the current resource base. Work is in progress to upgrade these resources to a 2012 JORC Code resource estimate.

Future Exploration

Infill drilling program and coal utilisation studies were planned for Year 4 however the Year 3 drilling program which was delayed is now expected to begin towards the end of Year 4.

The geological modelling completed to-date has identified three (3) under-explored areas and the assessment of these, forms the basis of the planned exploration program for Year 4. These target areas in and around Stanhope and Bonneys Plains are:

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-hole program with drill sites designed to hopefully intercept the full thickness of the coal measures.

It is concluded that further exploration of the lithic sandstone facies outcrops to the north west of the mined areas (where the dolerite is not present), and mainly along creeks and surrounding alluvial scree, is not justified as the unit appears to have been removed by erosion. Further exploration to the north east the New Stanhope mine is also not 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.

Previous investigations (Fraser, 2012), (Pemberton, 2013) recognised that one area that had not been fully explored is Bonney's Plains approximately 3.5km south of the MWC Stanhope Open cut. It is 3 - 4km distant from the Castle Carey Fault. Hills (1922) reported coal measures in the workings at the Bonney's Plains 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). Hills (1922) interpreted the workings to correlate with the Delta (D) Seam in the Mt. Christie area. Borehole TAR1 drilled by Western Mining intersected coal measures 3.5m thick to the east of the workings. Interpretations suggest that the drill hole intercept and seam exposures in the Bonney's Plains workings represent the basal section of the coal measures and that the upper part of the sequence remains untested.

It is proposed to test for the complete sequence by locating drill holes up sequence from these locations. This would however require drilling through 50 - 70m 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, sites 2019_01 - 2019_10, are shown in Figures 5 and 6. The proposed borehole details are also given in Table 2.

Figure 5: Location of Exploration Boreholes at Stanhope

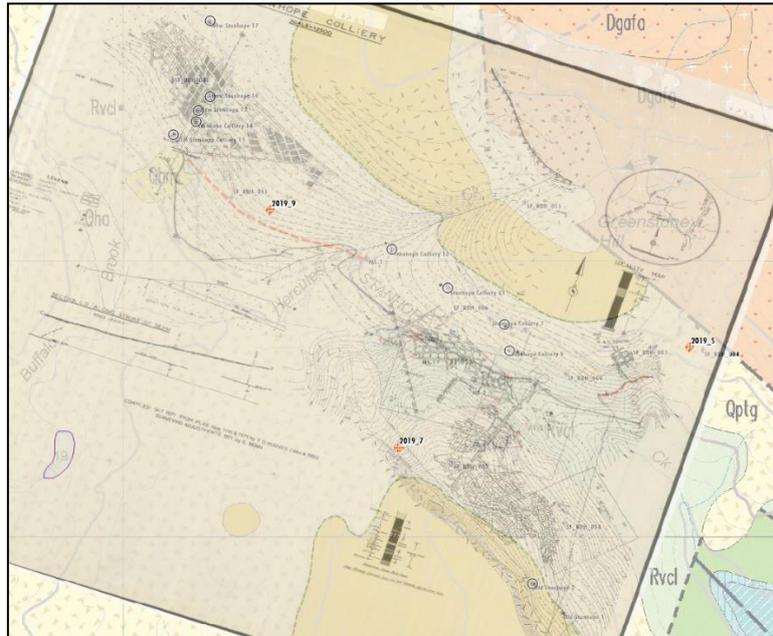


Figure 6: Location of Exploration Boreholes at Bonney's Plains

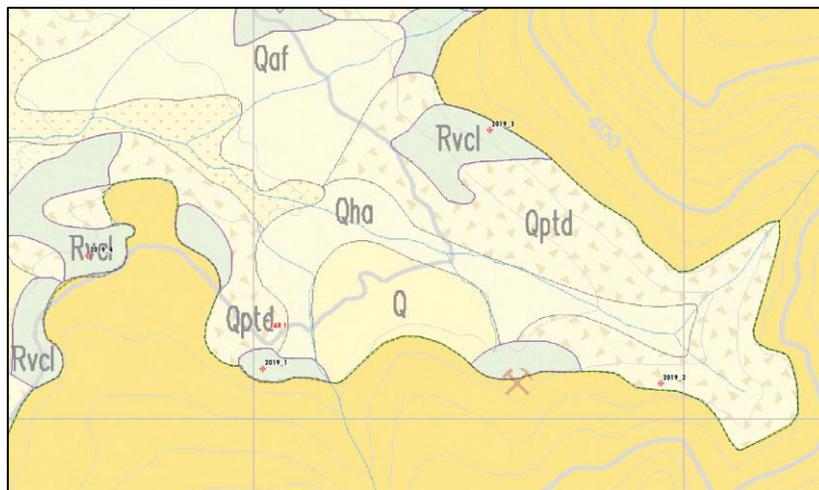


Table 2: Proposed Q1 2019 Drilling Program

SITE_ID	Location	EAST MGA94 Z56	NORTH MGA94 Z56	AHD	Total Depth	Type	Purpose
2019_1	Bonney's Plains	554025	5376735	220	120	chip	Exploration
2019_2	Bonney's Plains	554950	5376850	220	120	chip	Exploration
2019_3	Bonney's Plains	555350	5377304	220	120	chip	Exploration
2019_4	Bonney's Plains	554230	5378170	220	120	chip	Exploration
2019_5	Mt Christie	556022	5380681	300	120	Pilot	Infill and Coal Quality
2019_6	Mt Christie	556025	5380685	220	65	4C Core	Coal Quality and Geotech
2019_7	Stanhope South	554982	5380321	250	120	Pilot	Infill and Coal Quality
2019_8	Stanhope South	554990	5380320	220	65	4C Core	Coal Quality and Geotech
2019_9	Fenhope NW	554527	5381175	230	120	Pilot	Infill and Coal Quality
2019_10	Fenhope NW	554530	5381178	220	65	4C Core	Coal Quality and Geotech

Environmental Management

No surface disturbance activities took place during the current reporting period (Year 3).

Expenditure

Junction Coal has expended \$53,272.00 for Year 3. The Expenditure Statement below (Table 3) shows the breakup of monies expended on exploration activities for the year.

Table 3: Year 3 Expenditure Statement for EL1/2015

No.	Costs	Type	Annual Expenditure
1	Geoscientific	Geology	\$48,430.00
		Geochemistry	-
		Geophysics	-
		Remote Sensing	-
2	Drilling and Gridding	Gridding	-
		Drilling	-
3	Land Access		-
4	Rehabilitation	4. Rehabilitation	-
5	Feasibility Study		-
6	Other	Rental Fees	\$4,139.00
		Vehicular Track Construction	-
		Surveying	-
		Capital Equipment	-
7	Administration Costs		\$4,843.00
	TOTAL EXPENDITURE		\$57,412.00

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