ANNUAL REPORT EL26/2008

Mineral Resources Tasmania

Department of Infrastructure, Energy and Resources

Period Covered: 18th September 2012 to 17th September 2013

Licensee: Tiger Coal Pty Ltd

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Date of Report: 17 September 2013

Abstract

On the 30th May 2013 an option was entered into for South East Asia Energy Resources Pty Ltd (SEARS) to acquire EL 26/2008 from Tiger Coal Pty Ltd. (TC). As part of the agreement SEARS was to fund an immediate start to a drilling program, which commenced on the 1st June 2013.

During the reporting period, two phases of drilling took place over licence EL25/2008 and EL26/2008. This drilling was designed to investigate the continuity and quality of coal seams intercepted in drilling that took place during the previous reporting period (2011/2012).

A total of 25 holes were drilled over the two licence areas, 19 of these falling within EL26/2008. Out of the 19 holes, 11 were diamond drilled (526.31m) and 8 were open hole (380m). 9 of these holes were drilled off Bowhill Road in the Oatlands area, 7 were drilled off Mudwalls Road near Jericho and 3 in the northern reaches of the property “Northumbria” at Jericho (Figure 2 & Figure 3).

Based on results from OJ001 (Bowhill Road), OJ002 (Jericho), OJ003 and OJ004 (Mudwalls Road), 10 of the planned holes (WPA12/34) were designed as proximal step-outs from the original holes. OJ008, OJ013, OJ014 and OJ016 stepped out to the south, west, east and far south of OJ001 (Figure 2). OJ012, OJ021 and OJ022 stepped out to the north and south of OJ003 (Figure 3). OJ005, OJ011 and OJ015 stepped out to the north, south and west of OJ004 (Figure 3). There were also 9 additional holes (from WPA13/24) drilled both as distal step-outs and attempted linkages between the 4 original diamond holes: OJ017, OJ024 and OJ025 were drilled to link OJ001 and OJ002, OJ018 was drilled as a distal westerly step out to OJ002, OJ020 tested overall westerly extent, OJ026, OJ027 and OJ028 were attempts at distal step-outs from OJ001 (Figure 2) and OJ029 was drilled to link OJ003 and OJ004 (Figure 3). OJ005 was drilled in September of 2012 and as such were not included in the report for that period, and has been included in this report.

OJ005 was drilled approximately 500m to the north of OJ004 using the open-hole method to a depth of 100m. This hole was entirely composed of dolerite.

OJ008 was drilled approximately 200m to the south of OJ001 using the open-hole method and was sampled from 12-13m, 20-22m, 28-30m and 51-52m before the hole ended at 100m. Samples were not sent for analysis immediately and results are still pending. The sampled intervals were composed of carbonaceous mudstone and coal.

OJ011 was diamond drilled roughly 200m to the south of OJ004 to a depth of 41.3m and encountered no significant intercepts.

OJ012 was diamond drilled roughly 400m to the north of OJ003 to a depth of 41.45m and encountered 3 seams of dominantly heavy, dull coal from 19.88-20.65m, 31.61-32.03m and 35.30-36.12m.

OJ013 was diamond drilled approximately 200m to the west of OJ001 to a depth of 65.4m and encountered, and sampled, 8 significant intercepts ranging from borderline carbonaceous mudstone to moderately bright coal from 10.62-11.26m, 15.49-16.09m, 16.66-17.31m, 24.52-24.90m, 45.52-46.87m, 59.30-59.57m and 60.09-60.60m.

OJ014 was diamond drilled roughly 200m to the east of OJ001 to a depth of 60.6m and encountered 3 significant intercepts from 19.88-20.65m, 31.61-32.03m and 35.30-36.12m which were sampled and composed dominantly of heavy dull coal.

OJ015 was diamond drilled approximately 200m to the east of OJ004 to a depth of 49.58m and encountered 2 seams, which were sampled, from 19.67-20.57m and 20.57-21.11m before hitting dolerite at 35.2m

OJ016 was diamond drilled roughly 1.5km south of OJ001 to a depth of 51.48m and encountered (and sampled) 5 seams of variable quality coal from 4.72-5.50m, 9.08-9.35m, 9.70-10.41m, 18.43-18.81m and 41.94-44.07m before encountering dolerite at 45.4m.

OJ017 was diamond drilled roughly 2km south of OJ001 to a depth of 60.33m. 3 seams of dominantly heavy dull coal with some moderately bright coal from 17.59-18.17m, 18.50-18.78m and 18.89-19.95m were sampled.

OJ018 was diamond drilled approximately 2km to the east of OJ002 to a depth of 27.49m. No significant intercepts were encountered and dolerite was intercepted at 20.01m.

OJ020 was diamond drilled approximately half way between OJ001 and OJ002 and over 2km to the west (on the western licence border of EL26/2008) to a depth of 54.71m. No seams were intercepted, but particular attention was paid to the upper parts of this hole; which displayed prominent carbonaceous mudstone that may represent the outer extent of previously encountered seams. There were also significant amounts of quartz-rich sandstone present.

OJ021 was drilled approximately 400m to the south-south-east of OJ003 using the open hole method. This hole was drilled to 60m and encountered 4 prospective intervals from 17-19m, 46-47m, 51-53m and 59-60m, which were subsequently sampled. A significant amount of water was encountered from an early stage in this hole, and as such, the sample sizes and possibly their reliability was of lower quality.

OJ022 was drilled approximately 200m to the south-south-east of OJ003 using the open hole method. This hole was drilled to 44m and encountered 3 prospective intervals from 8-10m, 27-34m and 38-41m, which were subsequently sampled.

Again, a significant amount of water was encountered and sample size and quality subsequently suffered. The hole had to be ended early due to collar degradation (likely another result of water levels).

OJ024 was drilled roughly 2km to the north of OJ002 using the open hole method. This hole was drilled to 31m, all dolerite.

OJ025 was drilled almost 2km west of OJ017 using the open hole method. This hole was drilled 33m and encountered no significant intersections but hit a dolerite sill from 14-16m and more dolerite from 28m.

OJ026 was drilled approximately 500m to the west of OJ001 using the open hole method, but was only able to reach a depth of 10m due to significant amounts of mud and clay. A second attempt (OJ0027) was made around 60m to the north of the first but only reached 2m depth due to similar problems and the decision was made to attempt this with a diamond rig instead. This third attempt, OJ028, was drilled close to the collar of OJ026 and reached 42.22m without encountering any significant intercepts.

OJ029 was diamond drilled roughly 2.5km south of OJ004 to a depth of 32.75m, all dolerite.

Gamma Ray logging was carried out on OJ008 (along with other holes encompassed by different licences) in May 2013, with results analysed by B.R. Senior & Associates. Early indications are that the seams logged in holes to south appear to have similar gamma ray depth profiles and a marker zone in common with OJ008. Further geophysical work is intended on the remaining holes, with all being PVC lined and capped in preparation.

Lab results for all holes are still pending, along with graphic logs for the most recent drilling and overall section work to examine possible correlations between seams but cursory examination appears to indicate localised correlation between holes in some areas. Frequent faulting known to exist in the area, complicates any regional correlation work, but inroads are being made, with plans for data input into three-dimensional viewing software in the future.

Further drilling will likely be required, but will be planned following the return of results and result analysis of drilling to date.

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1 Introduction

1.1.1 Exploration rationale (objective) and geological setting

The operator's (Midlands Energy/South East Asia Resources) principal objective of exploration in the area is to delineate any coal seams within the near surface Triassic coal measures for the purpose of defining one or more resources suitable for open cut mining.

The geology of the area is dominated by the freshwater sequence of mudstones, sandstones and siltstones of the Upper Parmeener of the Triassic intruded by Jurassic Dolerite. Typically the Coal measures are found within a lithic sandstone sequence (dominantly within the grabens) that has been preserved in some areas by Jurassic dolerite capping. Structurally, the Jericho area (and surrounds) is dominated by a series of north to north-north-western troughs/grabens upwards of 50 by 1 kilometres in size and disrupted by numerous north-east trending faults.

1.1.2 Licence details

Tenement number:	EL 26/2008
Tenement name:	Lake Tiberias
Tenement location:	Southern Midlands: Oatlands/Jericho/Colebrook
Reporting period:	18 September 2012 – 18 September 2013
Tenement holder:	Tiger Coal Pty Ltd
Exploration manager:	South East Asia Resources (Tas.) Pty Ltd
Licence area:	220 square km
Licence category:	Category 2 (coal)

1.1.3 Location

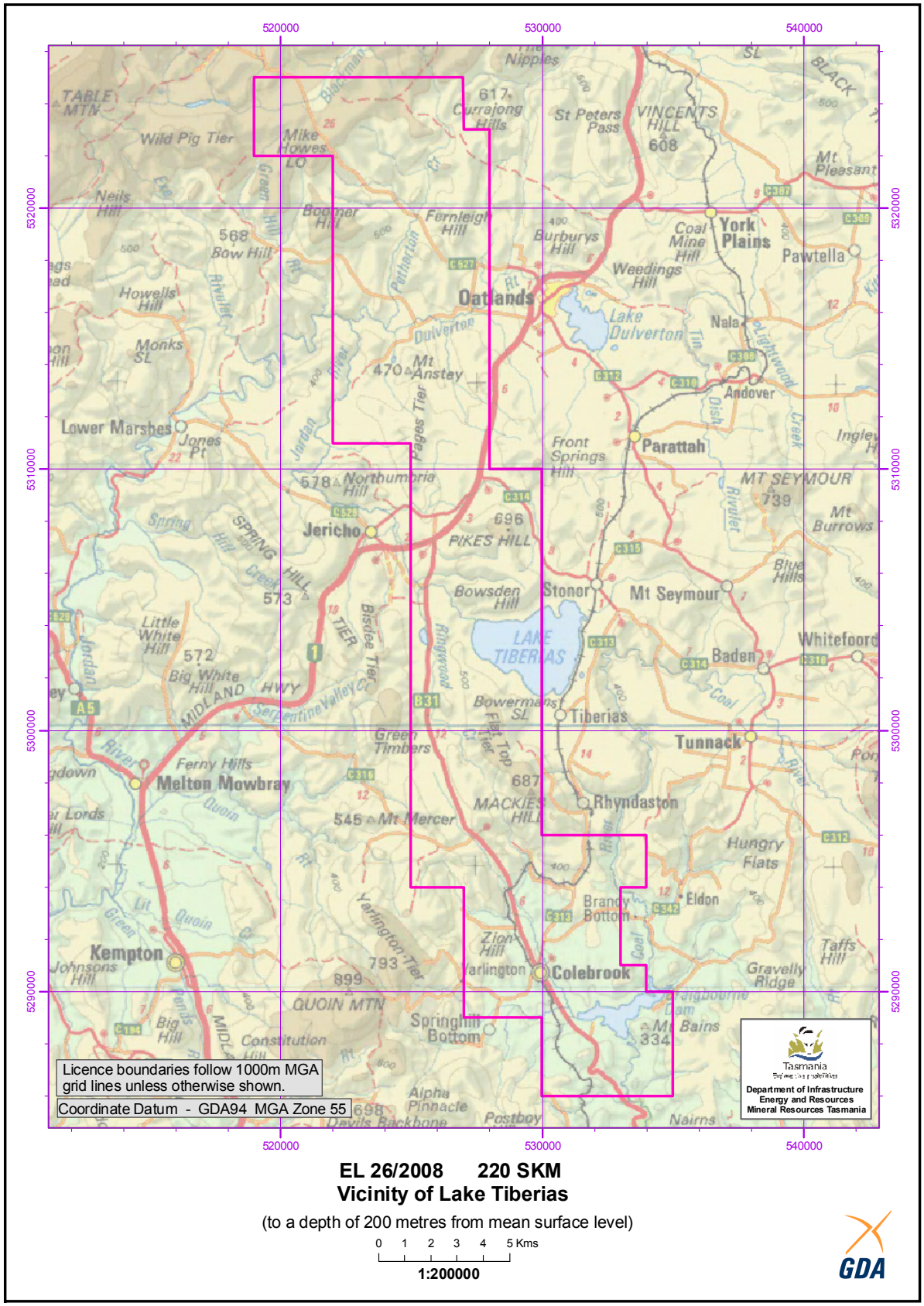


Figure 1. EL26/2008 Location Map

1.1.4 Tenure

Five years from 18 September 2008 to 17 September 2013

2 Review of previous work

2.1.1 Prior to current tenement

Modern exploration has only taken place since 1980 when Capricorn Mining Ltd was granted EL 28/1979. Capricorn conducted a regional exploration program over a wide area that included reconnaissance geology, remote sensing, structural interpretation and some drilling (reports: TCR80_1513, TCR81_1682 and TCR82_1798). This included a percussion hole (O-05) drilled in 1982, to the east of Jericho which failed to intercept any coal (see Capricorn Mining Limited, 1982).

CRA Exploration Pty Ltd conducted a program over three licences in the Oatlands-Jericho-Kempton area: EL18/1982, EL19/1982 and EL20/1982 (see Summons, 1984). Part of this program involved the use of LANDSAT imagery to identify overall structural trends in the area. This was followed up with a percussion drilling program to identify the prospectivity of graben structures. 8 percussion holes were drilled around Jericho and to the south (adjacent to Mudwalls Road) to an average depth of 50m. No assays were reported for these holes but CRA Exploration di define an upper “Sequence 1” which had up to 6 seams greater than 0.5m in thickness in the Jericho holes. Down-hole geophysics was used extensively in this exploration program and lends a degree of confidence to the conclusions made. It was also pointed out that there are significant elements of complexity due to the highly faulted nature of the area and the frequent presence of dolerite intrusions were also identified (report TCR84_2213). Summons (1982) also recommended that cored holes should be drilled to assist in the calibration of geophysical responses.

2.1.2 During current tenement

A brief geological survey of road outcroppings in both EL25/2008 and EL26/2008 was carried out in June 2012 (by Karen Adams). Although carbonaceous mudstone and flacer banding was observed in some outcrops but no areas of outstanding prospectivity were noted, with the dominant geology observed being lithic sandstone, mudstone, some carbonaceous mudstone and dolerite. A brief summary of observations was composed and is included as Appendix 1. Recommendations formed as a result of this survey include more detailed geological mapping of the entire licence area.

A small diamond drilling program was undertaken from March to April of 2012 comprised of 4 diamond holes, drilled over EL25/2008 and EL26/2008. 3 of these holes was drilled on EL26/2008; OJ001, OJ003 and OJ004.

Figure 2. Drilling Location Map 1

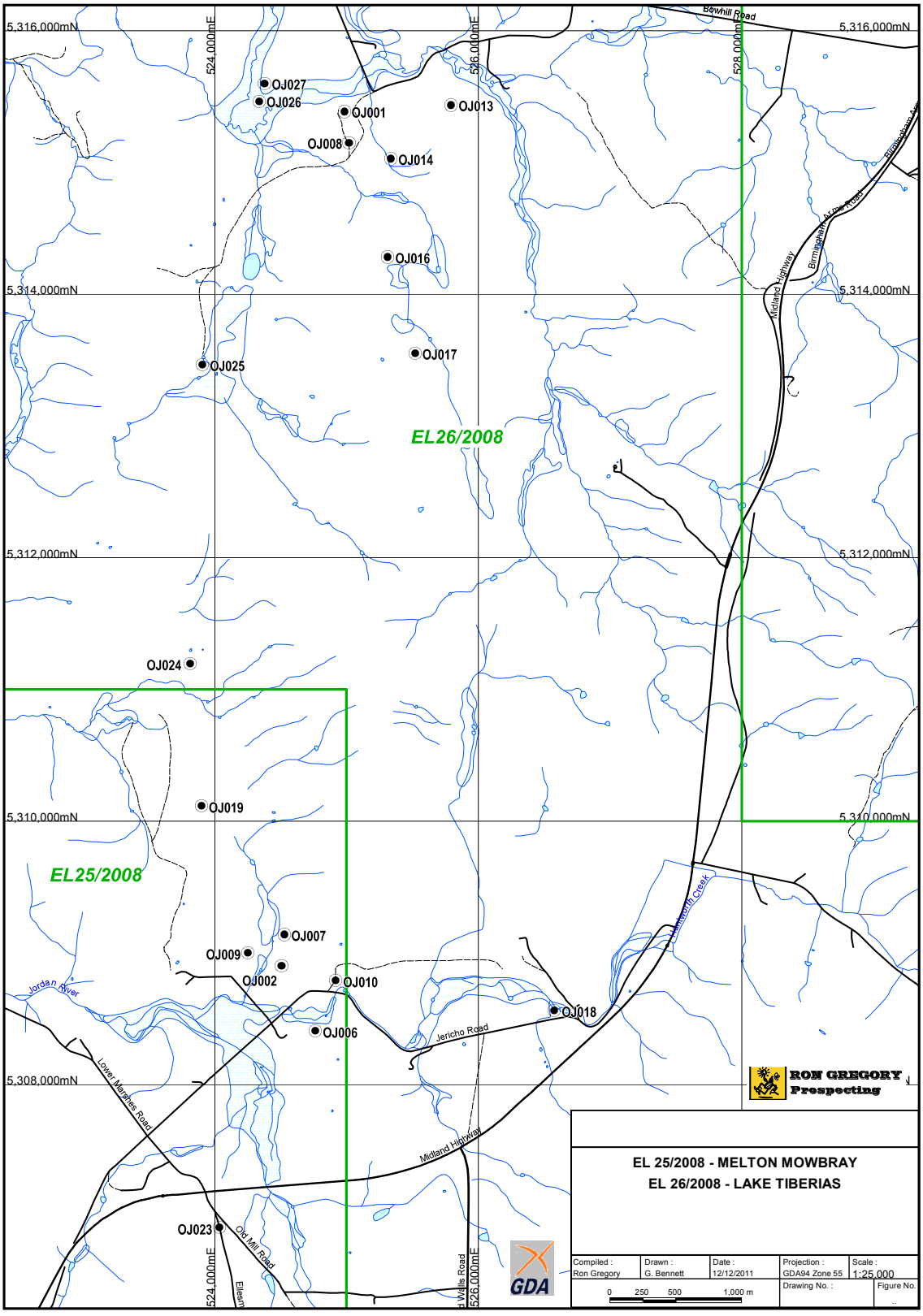
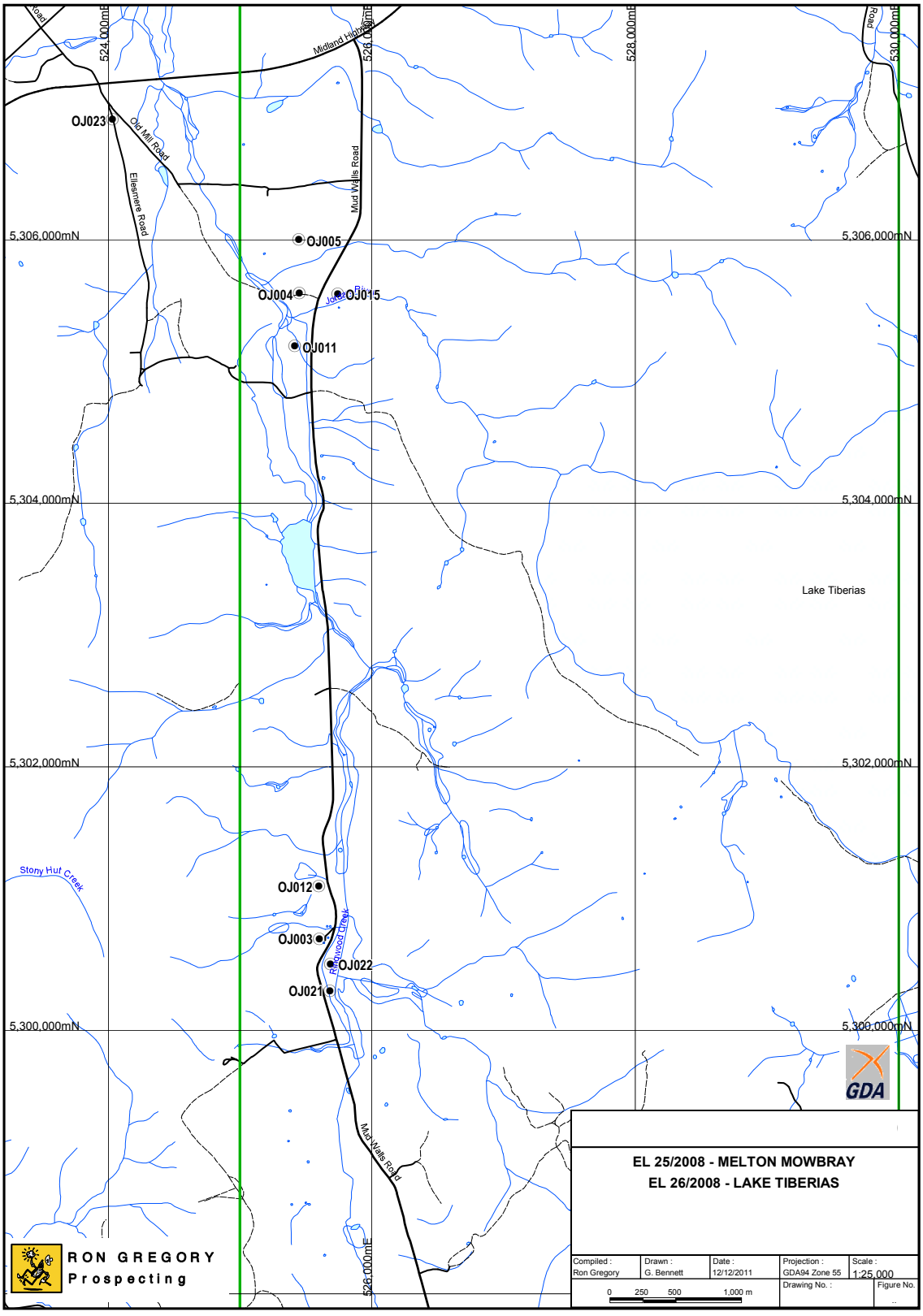


Figure 3. Drilling Location Map 2



OJ001 was drilled off Bowhill Road near Oatlands (Figure 2), to a depth of 102.25m. 3-4 seams were encountered and 4 intervals were sampled, the results for which are listed below (Figure 4). Lithological log for OJ001 is listed as Appendix 2.

Figure 4. OJ001 Results

m From	m To	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture	Description
5.4	5.9	0.5	1.84	50.6	0.18	3086	6.6	Zonally weathered coal & carbonaceous mudstone
6.2	7.1	0.9	1.49	20.3	0.53	6322	3	Broken, moderately bright coal (including 10cm of core loss)
12.98	13.64	0.66	1.89	57.6	0.41	2584	7	Heavy, zonally bright coal
55.33	55.54	0.21	1.69	40.8	0.33	4362	4.9	Bright vitric coal with some mudstone bands

OJ003 was drilled off Mudwalls Road, to a depth of 45.65m. 4 seams were intercepted and sampled, the results for which are listed below (Figure 5). Dolerite was encountered from 40.37m. Lithological log for OJ003 is listed as Appendix 3.

Figure 5. OJ003 Results

mFrom	mTo	Interval	Relative Density	Ash %	Total Sulphur	Calories Kcal/Kg	Moisture	Description
4.2	4.6	0.4	1.86	39.7	0.14	2266	15.9	Cuttings from collar
11.66	12.32	0.66	1.58	24.9	0.25	5584	2.4	Moderately bright coal
24.9	25.52	0.62	2.23	68.5	0.05	1504	6.1	Coal and carbonaceous mudstone
27.1	27.25	0.15	2.54	87.2	0.02	238	3.2	Coal and carbonaceous mudstone

OJ004 was drilled off Mudwalls Road, to a depth of 48.65m. 2 seams were intercepted and sampled, the results for which are listed below (Figure 6). Dolerite was encountered from 37.5m. Lithological log for OJ004 is listed as Appendix 4.

Figure 6. OJ004 Results

mFrom	mTo	Interval	Relative Density	Ash %	Total Sulphur	Calories Kcal/Kg	Moisture	Description
28.35	29.1	0.75	1.73	42.2	0.42	4218	3.9	Dull Coal
12.82	13.94	1.12	1.59	29.2	0.44	5784	1.8	Dull Coal

A review of water borehole data in both licence areas (EL25/2008 & EL26/2008) was carried out in August 2012 and a summary of boreholes containing possible prospective geology was produced (Appendix 5). This data was used to assist in planning further drilling.

3 Exploration completed during the reporting period

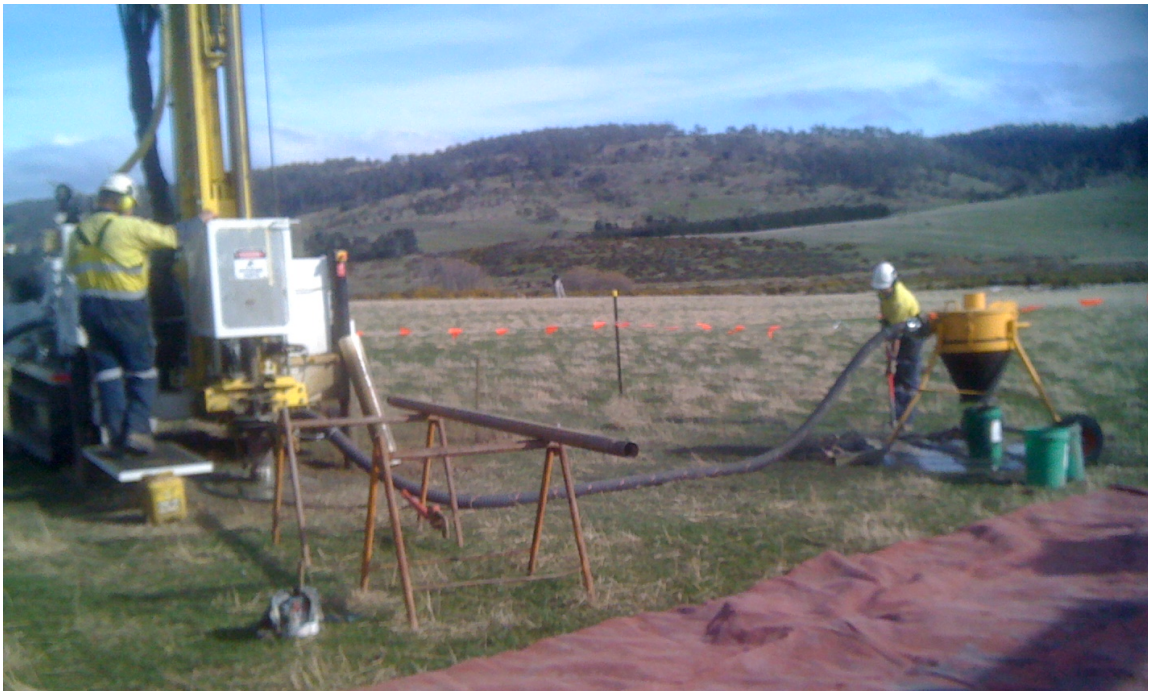
3.1.1 Prospect- based exploration activities

A 16 hole drilling program (WPA12/34) was designed to follow up on the initial 4 diamond holes. The intention was for all of these holes to be drilled using the open hole method, with four step-outs intended to follow up the intercepts in each diamond hole. As such, of the 16 planned holes, 12 were intended for EL26/2008 with 4 step outs for each hole. The step outs for OJ001 were planned to the east, west and south by approximately 200m and one further south by approximately 1.5km. The step outs from OJ003 were planned to be 200m and 400m to both the north and south. The step outs from OJ004 were planned to be around 200m to the south and west, and 200m and 400m to the north. This follow up program was started in August, 2012. This obviously fell into the previous reporting period, but as it was in progress only minimal initial data was available to be reported on, with the remaining information to be provided during this reporting period.

Of the 12 planned holes for EL26/2008, 2 were drilled before the program was temporarily halted in September 2012; OJ005 and OJ008.

OJ005 was drilled roughly 500m to the north of OJ004 (Figure 3), and encountered nothing but dolerite until the hole ended at 100m. The lithology log for OJ005 is included as Appendix 7.

Figure 7. OJ005 Drilling



OJ008 was drilled approximately 200m to the south of OJ001 (Figure 2), and encountered 5 prospective intervals (which were sampled, but not sent for assay immediately) before it was ended at 100m deep. A list of sampled intervals is shown in Figure 8 and the lithological log is listed in Appendix 8.

Figure 8. OJ008 Sampled Intervals

m From	m To	Description
12	13	Soft dark grey mudstone and black carbonaceous mudstone. Small sample
20	21	Black carbonaceous mudstone and possible coal with minor grey mudstone
21	22	Black carbonaceous mudstone and dark grey mudstone
28	29	Black carbonaceous mudstone and possible coal with minor grey mudstone
29	30	Grey mudstone and black carbonaceous mudstone
51	52	Black with minor dark grey carbonaceous mudstone and possible coal

Figure 9. OJ008 Drilling



A gamma ray survey was carried out (in May 2013) of the initial phase of the holes drilled for WPA12/34 including OJ005 and OJ008. This survey was carried out by B.R. Senior & Associates Pty Ltd and the resulting report written is included as Appendix 9. Dr Senior stated that the gamma ray depth profiles present in OJ006 and OJ007 (EL25/2008 – Figure 2) were similar and that a marker zone was present in both holes, and were also identified as similar to a marker zone in OJ008. It was also recommended that the gamma ray logging of future holes should be carried out so that any existing consistencies can be clarified.

Figure 10. Down-Hole Geophysical Surveying (OJ008 Site)



Out of the 12 remaining planned holes for EL26/2008 from WPA12/34, 10 were drilled from June to August of 2013 after an extension for WPA12/34 was requested and granted. The two remaining holes were postponed due to weather in an effort to minimise damage to farmland. These remaining 2 holes are unlikely to be drilled under WPA12/34 (for which the extension has expired), but will likely be drilled in future work programs.

OJ011 was diamond drilled approximately 200m to the south of OJ004 (Figure 3) and did not encounter any significant intercepts before ending at 41.3m. The logs and core photos for OJ011 are included as Appendix 10.

Figure 11. OJ011 Drilling



Figure 12. OJ011 Drilling 2 (Adjacent Resident)



OJ012 was diamond drilled approximately 400m to the north of OJ003 (Figure 3) and encountered 1 significant intercept (that was sampled in 2 intervals – Figure 13), before hitting dolerite at 24.42m and then ending at 41.45m. The logs and core photos for OJ012 have been included as Appendix 11.

Figure 13. OJ012 Sampled Intervals

mFrom	mTo	Interval	Description
9.4	10.15	0.75	Broken coal (incl. cave-in: difficult to distinguish)
10.15	11.24	1.09	Dominantly heavy dull coal

Figure 14. OJ012 Drilling



OJ013 was diamond drilled approximately 200m to the west of OJ001 (Figure 2) and encountered 7 significant intervals (Figure 15) before the hole ended at 65.4m deep. The logs and core photos for OJ013 are included as Appendix 12.

Figure 15. OJ013 Sampled Intervals

mFrom	mTo	Interval	Relative Density
10.62	11.26	0.64	Carbonaceous mudstone +/- coal
15.49	16.09	0.6	Heavy dull coal and carbonaceous mudstone
16.66	17.31	0.65	Heavy dull coal. Approx 1% vitrinite & minor calcite veining
24.52	24.9	0.38	Carbonaceous mudstone +/- coal
45.42	46	0.58	Carbonaceous mudstone +/- heavy dull coal
46	46.54	0.54	Carbonaceous mudstone +/- heavy dull coal
46.54	46.87	0.33	Grading from moderately bright coal to heavy dull coal
59.3	59.57	0.27	Broken, heavy dull coal with approximately 2% vitrinite
60.09	60.6	0.51	Carbonaceous mudstone +/- heavy dull coal

Figure 16. OJ013 Drilling



OJ014 was diamond drilled to 60.6m, approximately 300m to the west of OJ001 (Figure 2) and encountered 3 significant intervals (Figure 17). The logs and core photos are included as Appendix 13.

Figure 17. OJ014 Sampled Intervals

mFrom	mTo	Interval	Description
19.88	20.65	0.77	Heavy dull coal and carbonaceous mudstone
31.61	32.03	0.42	Heavy dull coal and some carbonaceous mudstone
35.3	36.12	0.82	Heavy dull, zonally moderately bright coal

Figure 18. OJ014 Drilling



OJ015 was diamond drilled approximately 200m to the west of OJ004 (Figure 3) and encountered a single seam that was sampled in 2 intervals (Figure 19) before hitting dolerite at 35.2m and ending at 49.58m. The logs and core photos for OJ015 are included as Appendix 14

Figure 19. OJ015 Sampled Intervals

mFrom	mTo	Interval	Description
19.67	20.57	0.9	Heavy, dull coal with zonally brighter coal
20.57	21.11	0.54	Laminated coal and carbonaceous mudstone

Figure 20. OJ015 Drilling

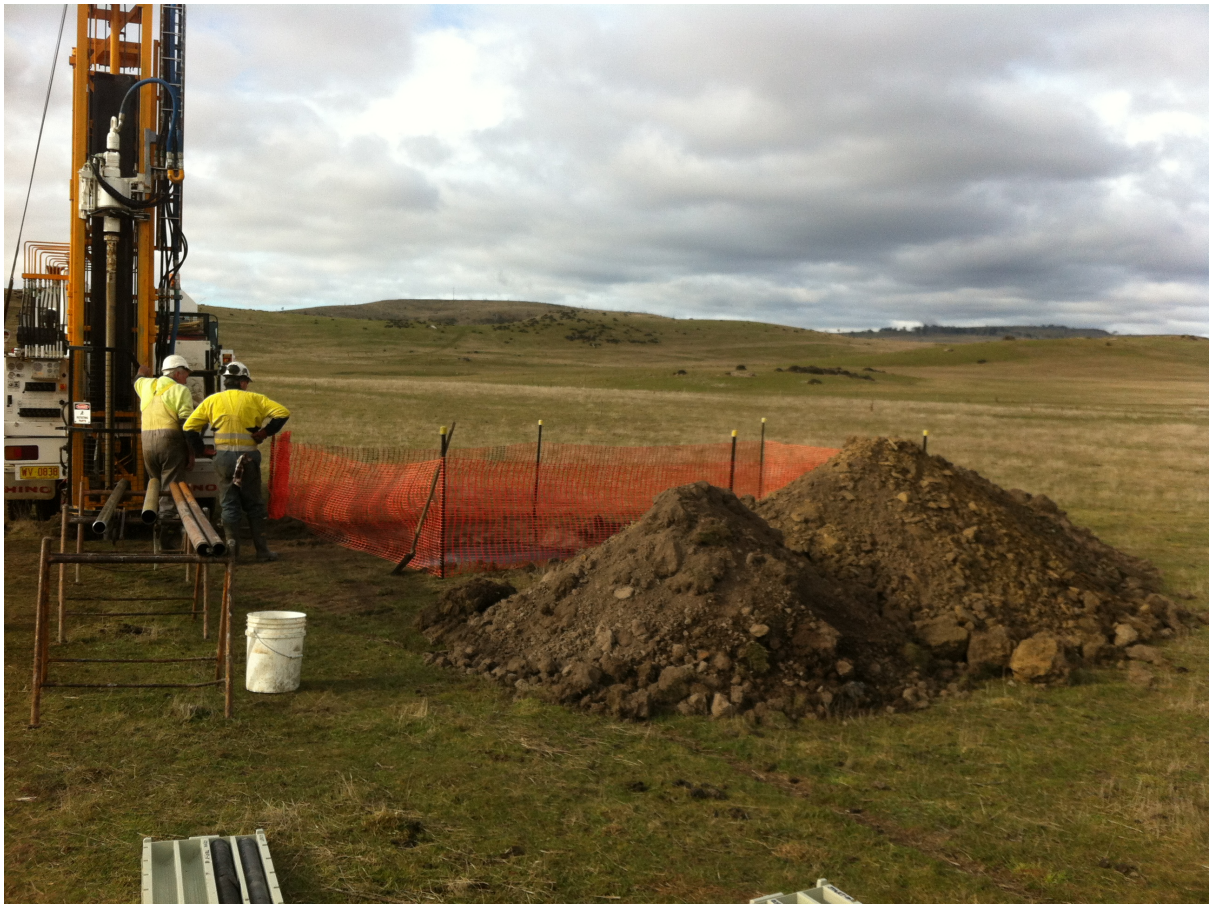


OJ016 was drilled roughly 1.5km south of OJ001 (Figure 2) and encountered 6 significant intervals (Figure 21) before hitting dolerite at 45.4m and ending at 51.48m. Logs and core photos are included as Appendix 15.

Figure 21. OJ016 Sampled Intervals

mFrom	mTo	Interval	Description
4.72	5.5	0.78	Heavy dull coal + carbonaceous mudstone
9.08	9.35	0.27	Zonally bright, but dominantly heavy, dull coal
9.7	10.41	0.71	Zonally bright, but dominantly heavy, dull coal
18.43	18.81	0.38	Heavy dull coal + some ash banding and weathering
41.94	43	1.06	Carbonaceous mudstone +/- heavy dull coal
43	44.07	1.07	Carbonaceous mudstone +/- heavy dull coal

Figure 22. OJ016 Drilling

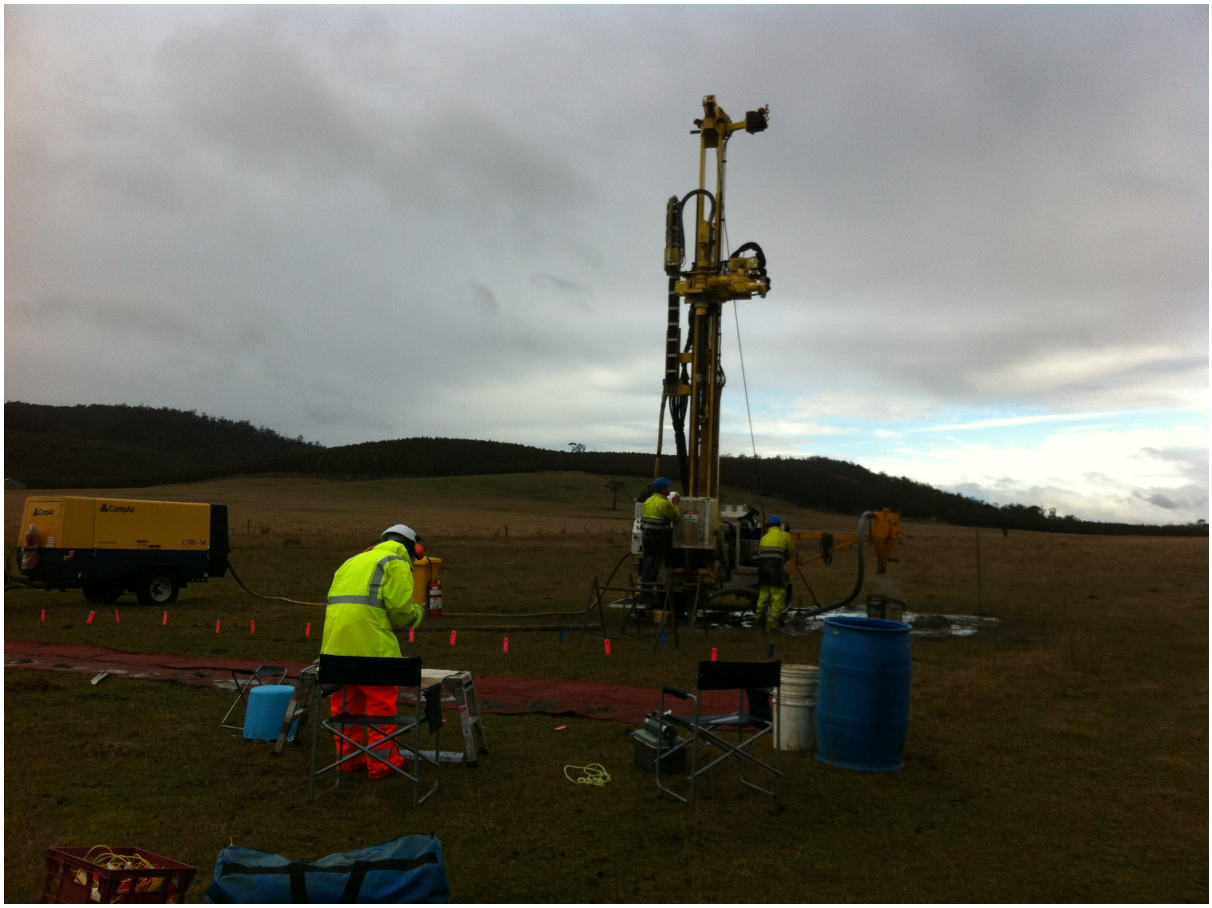


OJ021 was drilled approximately 400m to the south-south-east of OJ003 (Figure 3) using the open hole method and encountered 4 prospective intervals (Figure 23) before ending at 60m. Lithology log for OJ021 is included as Appendix 16.

Figure 23. OJ021 Sampled Intervals

mFrom	mTo	Interval	Description
17	18	1	Carbonaceous mudstone +/- coal, sandstone + mudstone
18	19	1	Carbonaceous mudstone with minor mudstone
46	47	1	Carbonaceous mudstone with sandstone and mudstone
51	52	1	Carbonaceous mudstone with mudstone
52	53	1	Sandstone and Carbonaceous mudstone
59	60	1	Carbonaceous mudstone and mudstone

Figure 24. OJ021 Drilling Intervals



OJ022 was drilled roughly 200m to the south-south-east of OJ003 (Figure 3) and encountered 3 prospective intervals (Figure 25) before ending at 44m. The hole was prematurely ended as a result of collar degradation. Lithology log for OJ022 is included as Appendix 17.

Figure 25. OJ022 Sampled Intervals

mFrom	mTo	Interval	Description
8	9	1	Lithic sandstone with minor carbonaceous mudstone
9	10	1	Mudstone with minor sandstone & carbonaceous mudstone
27	28	1	Lithic sandstone & carbonaceous mudstone
28	29	1	Mudstone & carbonaceous mudstone
29	30	1	Mudstone & some carbonaceous mudstone
30	31	1	Mudstone & minor carbonaceous mudstone
31	32	1	Mudstone & black carbonaceous mudstone
32	33	1	Carbonaceous mudstone & some mudstone
33	34	1	Mudstone, some carbonaceous mudstone & sandstone
38	39	1	Mudstone & some carbonaceous mudstone
39	40	1	Mudstone & carbonaceous mudstone
40	41	1	Mudstone with some carbonaceous mudstone

A second drilling program (WPA13/24) was designed and executed in conjunction with the WPA12/34 program. This program was intended to be composed of 9 holes (with 11 drilled

in the end), drilled using the open hole method, with 7 of the planned holes to be drilled within EL26/2008. 9 holes were actually drilled on EL 26/2008, with one planned hole requiring 3 attempts (the third of which was successful). 5 of these holes (OJ017, OJ018, OJ020, OJ028 and OJ029) were diamond drilled instead of using open hole, but the remainder were open hole.

OJ017 was drilled approximately 2km south of OJ001 (Figure 2) and intercepted 3 seams which were sampled in 4 intervals (Figure 26) before ending at 60.33m. OJ017 logs and core photos are included as Appendix 18.

Figure 26. OJ017 Sampled Intervals

mFrom	mTo	Interval	Description
17.59	18.17	0.58	Heavy dull coal and carbonaceous mudstone
18.5	18.78	0.28	Heavy dull coal with approximately 1% vitrinite
18.89	19.63	0.74	Moderately bright brittle coal with approximately 40% vitrinite
19.63	19.95	0.32	Heavy dull coal and carbonaceous mudstone

OJ018 was drilled roughly 2km east of OJ002 (Figure 2) to a depth of 27.49m. No significant intervals were encountered before hitting dolerite 20.01m. OJ018 logs and core photos are included as Appendix 19.

Figure 27. OJ018 Drill Site



OJ020 was drilled on the western edge of EL26/2008 (Figure 2) and encountered no significant intercepts before ending at 54.71m. No samples were taken, however a number of carbonaceous mudstone beds were encountered in the upper parts of the hole. A significant amount of quartz-rich sandstone was also present. Logs and core photos for OJ020 are included as Appendix 20.

OJ024 was drilled roughly 2km to the north of OJ002 (Figure 2) using the open hole method and encountered nothing but dolerite until ended at 31m. Logs for OJ024 are included as Appendix 21.

Figure 28. OJ024 Drill Site



OJ025 was drilled almost 2km to the west of OJ017 (Figure 2) using the open hole technique and encountered no prospective intervals before ending at 33m. Dolerite was intercepted from 14-16m (sill) and from 28-33m (EOH). Lithology log for OJ025 is included as Appendix 22.

Figure 29. OJ025 Drill Site



OJ026 was drilled approximately 500m west of OJ001 (Figure 2) using the open hole method. The hole only reached a depth of 10m due to a significant amount of mud and clay ,before it was decided to begin a second attempt on slightly higher ground. The lithology log for OJ026 is included as Appendix 23.

Figure 30. OJ026 Drilling



OJ027 was a second attempt at drilling OJ026, approximately 80-100m to the north of OJ026 (Figure 2) but only reached 2m, having the same problems as OJ026. It was then decided that a diamond drilling attempt would likely be more successful.

OJ028 was diamond drilled adjacent to OJ026 (Figure 2) to a depth of 42.22m. It encountered no significant intercepts, and was dominantly composed of soft, clay-rich sandstone and mudstone with occasional remnant coal and carbonaceous mudstone rip up clasts. The logs and core photos for OJ028 are included as Appendix 24.

Figure 30. OJ026 Core Close-Up



OJ029 was diamond drilled approximately half-way between OJ003 and OJ004 on the eastern side of Mudwalls Road. This hole encountered nothing but dolerite and ended at 32.75m. Logs and core photos for OJ029 are included as Appendix 25.

Figure 31. OJ029 Sumps



All holes drilled have been PVC lined to facilitate further geophysical logging in the area. All hole information is listed in a meta data table (Figure 32). In July 2013, Northern Surveying Services was brought in to survey the holes drilled to date. Holes surveyed were: OJ006-OJ018, OJ021-OJ023 and OJ025-OJ027. The remainder of the holes will be surveyed except for OJ001-OJ004, which have already been rehabilitated completely and are unable to be surveyed.

Figure 32. Meta Data

Hole ID	Co-ordinates			Licence	Location	Drill Company	Drill Method	Drill Date	Hole Depth	WPA
	Easting	Northing	Elevation							
OJ001	524982	5315385	371	EL26/2008	Bowhill Rd	KMR	DIAMOND	Mar-12	102.25	-
OJ003	525602	5300695	443	EL26/2008	"Elesmere" Mudwalls Rd	KMR	DIAMOND	Apr-12	45.65	-
OJ004	525451	5305593	407	EL26/2008	"Elesmere" Mudwalls Rd	KMR	DIAMOND	Apr-12	48.65	-
OJ005	525447	5306001	416	EL26/2008	"Bowsden" Mudwalls Rd	KMR	OPEN HOLE	Aug-12	100	WPA12/34
OJ008	525019	5315147	364	EL26/2008	Bowhill Rd	KMR	OPEN HOLE	Sep-12	100	WPA12/34
OJ011	525417	5305194	401	EL26/2008	"Elesmere" Mudwalls Rd	Whole Core	DIAMOND	Jun-13	41.3	WPA12/34
OJ012	525599	5301094	437	EL26/2008	"Elesmere" Mudwalls Rd	Whole Core	DIAMOND	Jun-13	41.45	WPA12/34
OJ013	525794	5315433	351	EL26/2008	Bowhill Rd	Whole Core	DIAMOND	Jul-13	65.4	WPA12/34
OJ014	525337	5315026	371	EL26/2008	Bowhill Rd	Whole Core	DIAMOND	Jul-13	60.6	WPA12/34
OJ015	525743	5305590	404	EL26/2008	"Elesmere" Mudwalls Rd	KMR	DIAMOND	Jun-13	48.58	WPA12/34
OJ016	525313	5314279	389	EL26/2008	Bowhill Rd	KMR	DIAMOND	Jun-13	51.48	WPA12/34
OJ017	525520	5313550	389	EL26/2008	Bowhill Rd	KMR	DIAMOND	Jul-13	60.33	WPA13/24
OJ018	526577	5308563	404	EL26/2008	"Northumbria" Jericho	KMR	DIAMOND	Jul-13	27.49	WPA13/24
OJ020	522069	5311626	357	EL26/2008	"Northumbria" Jericho	KMR	DIAMOND	Jul-13	54.71	WPA13/24
OJ021	525683	5300300	440	EL26/2008	"Elesmere" Mudwalls Rd	KMR	OPEN HOLE	Jul-13	60	WPA12/34
OJ022	525688	5300500	439	EL26/2008	"Elesmere" Mudwalls Rd	KMR	OPEN HOLE	Jul-13	44	WPA12/34
OJ024	523815	5311193	395	EL26/2008	"Northumbria" Jericho	KMR	OPEN HOLE	Jul-13	31	WPA13/24
OJ025	523907	5313463	366	EL26/2008	Bowhill Rd	KMR	OPEN HOLE	Jul-13	33	WPA13/24
OJ026	524337	5315462	350	EL26/2008	Bowhill Rd	KMR	OPEN HOLE	Jul-13	10	WPA13/24
OJ027	524376	5315597	352	EL26/2008	Bowhill Rd	KMR	OPEN HOLE	Jul-13	2	WPA13/24
OJ028	524327	5315457	358	EL26/2008	Bowhill Rd	KMR	DIAMOND	Jul-13	42.22	WPA13/24
OJ029	525759	5302647	439	EL26/2008	"Elesmere" Mudwalls Rd	KMR	DIAMOND	Jul-13	32.75	WPA13/24

4 Discussion of results

Results from samples taken from all holes drilled during this reporting period are still pending, along with work on drill sections and further geophysical surveys. Further drilling has been proposed on a results basis, however until assays, geophysics and further analysis are complete, this has been postponed. A summary of the significant intercepts can be seen in Figure 33.

Figure 33. Significant Intercept Summary

Hole ID	Intercept 1		Intercept 2		Intercept 3		Intercept 3		Intercept 4		Intercept 5		Intercept 6	
	From	To	From	To	From	To	From	To	From	To	From	To	From	To
OJ001	5.70	5.90	6.2	7.1	12.98	13.64	55.4	55.5	64.8	64.9	-	-	-	-
OJ003	4.20	4.60	11.66	12.32	24.9	25.52	27.1	27.25	-	-	-	-	-	-
OJ004	12.80	13.94	28.35	29.12	-	-	-	-	-	-	-	-	-	-
OJ005	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ008	12	13	20	22	28	30	51	52	-	-	-	-	-	-
OJ011	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ012	9.4	11.24	-	-	-	-	-	-	-	-	-	-	-	-
OJ013	10.62	11.26	15.49	16.09	16.66	17.31	24.52	24.9	45.42	46.87	59.3	59.57	60.09	60.6
OJ014	19.88	20.65	31.61	32.03	35.3	36.12	-	-	-	-	-	-	-	-
OJ015	19.67	21.11	-	-	-	-	-	-	-	-	-	-	-	-
OJ016	4.72	5.5	9.08	9.35	9.7	10.41	18.43	18.81	41.94	44.07	-	-	-	-
OJ017	17.59	18.17	18.5	18.78	18.89	19.95	-	-	-	-	-	-	-	-
OJ018	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ020	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ021	17	19	46	47	51	53	59	60	-	-	-	-	-	-
OJ022	8	10	27	34	38	41	-	-	-	-	-	-	-	-
OJ024	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ025	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ026	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ027	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ028	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OJ029	-	-	-	-	-	-	-	-	-	-	-	-	-	-

5 Conclusions

Drilling undertaken during this reporting period was designed to both test the proximal extents of the known coal seams encountered in the 4 original diamond holes (OJ001-OJ004), and to investigate possible links between these holes on a more regional scale. While initial signs appear somewhat encouraging, further work is definitely required.

The scope of the down hole geophysical survey was somewhat limited, however the interim results and the extrapolations made from them are also encouraging and warrant the continuation of the survey now that more holes are available.

Pending assay results, further down-hole geophysical surveys and detailed section work, means that drawing distinct conclusions at this stage would be premature, however based on the information available it seems that the coal measures are reasonably consistent locally but on a broader scale, the influence of frequent faulting and dolerite intrusions is significant.

6 Environment

EL26/2008 is dominantly composed of undulating agricultural land with some dry sclerophyll forest. Drilling took place exclusively on agricultural land. This land has been either heavily grazed or cultivated, has little to no native flora remaining and generally contains a number of invasive weed species including gorse and thistles.

Phillip Milner carried out the most recent botanical survey for WPA13/24 and the subsequent report is included as Appendix 25. All recommendations made in this report were followed and the impact on the farmland minimised as much as possible.

Negotiations with land owners for access to their land were carried out in accordance with the Mineral Exploration Code of Practice and relationships with land owners continues to be cordial.

All sites have been rehabilitated (sump filled and ground levelled) except for the grouting of the PVC lined holes. This will take place upon completion of the down-hole geophysical surveys. These holes are PVC lined and capped. Once the geophysics has been completed, the PVC will be cut below ground level and the holes individually grouted up to plough depth (approximately 1m below surface).

Figure 34. OJ008 Rehabilitation



Figure 35. OJ011 Rehabilitation



Figure 36. OJ012 Rehabilitation



Figure 37. OJ013 Rehabilitation



Figure 38. OJ014 Rehabilitation



Figure 39. OJ015 Rehabilitation



Figure 40. OJ016 Rehabilitation



Figure 41. OJ017 Rehabilitation



Figure 42. OJ018 Rehabilitation



Figure 43. OJ020 Rehabilitation



Figure 44. OJ021 Rehabilitation



Figure 45. OJ022 Rehabilitation



Figure 46. OJ024 Rehabilitation



Figure 47. OJ026 & OJ028 Rehabilitation



Figure 48. OJ027 Rehabilitation



Figure 49. OJ029 Rehabilitation



7 Expenditure

Full details of the expenditure on recent drilling and the data compilation are not known at this time due to Mr Greg Cox; Project Supervisor on behalf of South East Asia Energy Resources (Tas.) Pty Ltd was required to attend to urgent business overseas. The required SEARS expenditure information is expected to be included in the July – September Quarterly Report.

Value of exploration works conducted 2012-2013:

Drilling	- June - July 2013 (WC)	$68,161
Drilling – June July 2013 ()		$44,051
Rehabilitation		$2,630
Geology and drilling logistics -		$62,946
Annual rental		$12,824
SEARS drilling logistics		Unknown
Geophysics		Unknown
	SUBTOTAL of known value	$190,612

8 References

TCR80_1513 *Final report of Tasmanian Coal Prospects for Capricorn Mining Ltd.* General Geological Services. February 1981.

TCR81_1682 *Tasmanian coal prospects. Six month progress report, 17 April to 16 October 1981, for Capricorn Mining Ltd.* General Geological Services.

TCR82_1798 *Capricorn Mining Ltd, Relinquishment Report, Coal EL28/79, Oatlands Tasmania.* May 1982

TCR84_2213 *Parattah EL18/82, Kempton EL19/82, Jericho EL20/82. Exploration report for the year ending 30 September 1984.* CRA Exploration Pty Ltd. Report 12862.

Appendix 1. Geological Road Outcrop Survey (By Karen Adams, June 2012)

"Geological Road Outcrop Survey" By Karen Adams, June 2012.

A geological survey of road-side outcrops along the public roads contained within EL25/2008 and EL26/2008, was carried out over two days (6th-7th June, 2012). The survey was intended as a brief visual analysis of the 'publicly available' outcrops within the licence for the purpose of identifying areas that might be potentially prospective for coal and as such warrant further exploration.

The majority of outcrops observed were dolerite and/or sandstone-mudstone and all correspond with the available geological data. There were a few noteworthy areas including in the south of EL25/2008, to the west of Kempton, and in the south of EL26/2008 to the north east of Colebrook.

The southern area of EL25/2008 was of particular interest given that a series of holes drilled ('KP' holes) by CRAE in the 1980's to follow up on the Mount Vernon coal seam, ended in dolerite at reasonably shallow depths. Upon examination of the outcrops in the valleys and leading up the hills upon which the holes were drilled, a number of dolerite outcrops separated by sandstone (and some mudstone) were observed and would tend to indicate that these are likely to be sills. In which case, the KP series of drill holes were likely ended too early. There were also two outcrops of highly degraded carbonaceous mudstone observed in the vicinity of the eastern intersection of Clifton Vale Road and Fosters Road (see photo below).

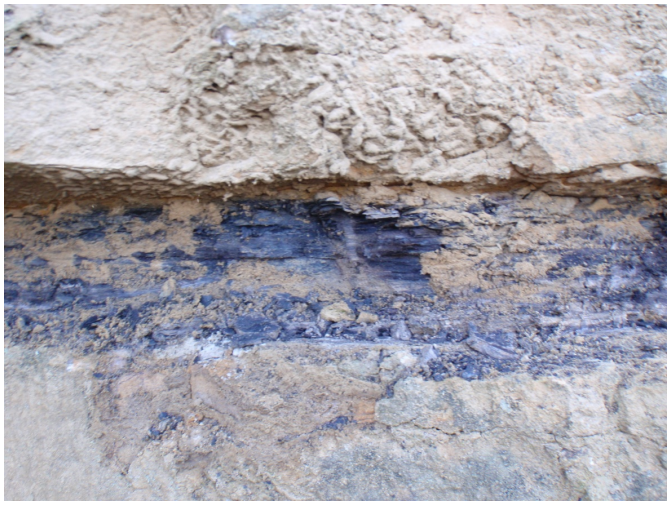


There is a report of coal outcropping in the Kempton area, observed in the 1980's in what was likely to have been a fresh outcrop at the time. It is likely that this outcrop has degraded greatly or has been covered by debris. As such, it has not been re-discovered. It is possible, that the above pictured outcrop once had some associated coal, or was proximal to coal.

A relatively fresh outcrop of mudstone and lithic sandstone with flacer banding and some carbonaceous mudstone was observed along Rhyndaston Road in the southern part of EL26/2008, to the north-east of Colebrook (pictured below).







This survey has identified and/or confirmed areas of potential coal prospectivity, but is just an initial step. Further, more detailed mapping within privately owned land on the licences is probably advisable, and more detailed mapping in the areas identified in this survey is definitely warranted. It may also be advisable to consider continuing where CRAE left off with the KP series drill hole.

Appendix 2. OJ001 Lithology Log

Drill Hole ID: OJ001

Project: Southern Midlands Coal
License: EL 26/2008 (Anstey Road
Date Drilled: 14/3/12 - 20/3/12

Collar: Easting: 55 524 982
Northing: 5 315 385
Elevation: 371m
(GDA - GPS)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	4	Cutting Bit - No Core
4	5.11	Moderately weathered, dark cream to grey mudstone with increasing amounts of sandstone and flacer banding downhole
5.11	5.4	Moderately weathered dark grey mudstone and carbonaceous mudstone
5.4	5.7	Moderately weathered, dark grey to black dull coal and carbonaceous mudstone
5.7	5.75	Dark orange clay seam - fault (?)
5.75	5.9	Dull coal with minor vitric banding
5.9	6.2	Grey mudstone and minor carbonaceous mudstone
6.2	6.8	Coal - some bright vitric banding and minor carbonate veining
6.8	6.9	Core Loss - broken ground
6.9	7.1	Broken, brittle, moderately bright coal with vitric bands
7.1	7.67	Dark grey carbonaceous mudstone and mudstone with very minor coal band at 7.4m
7.67	7.77	Core Loss - ground away
7.77	12.15	Grey to dark grey mudstone and sandstone with some carbonaceous mudstone and flacer banding. Sequence appears to be fining up hole.
12.15	12.2	Pug and clay-filled fault
12.2	12.98	Grey to dark grey mudstone and carbonaceous mudstone with minor sandstone containing flacer banding. Irregular down hole contact approximately 70 degrees to core axis
12.98	13.64	Moderately heavy, zonally bright coal with vitric banding
13.64	13.7	Dark grey carbonaceous mudstone with downhole conformable bedded contact at 30-40 degrees
13.7	18.63	Grey to dark grey mudstone and carbonaceous mudstone with zonal medium-grained sandstone (featuring flacer banding) increasing in abundance down hole, tending to indicate an upwardly fining sequence. 'Micro' faulting, cross-bedding and flame structures present. 2.5 joint sets present, both planar rough with little to no alteration: At 30-40 & 70 degrees. Downhole contact, conformable (bedding) at approximately 80 degrees to core axis
18.63	18.79	Grey mudstone
18.79	18.87	Grey medium-grained sandstone
18.87	19.72	Grey to dark grey mudstone and carbonaceous mudstone
19.72	24.15	Dark grey to grey, fine to medium-grained sandstone interbedded with dark grey to black carbonaceous mudstone and minor vitric coal bands. Conglomeratic, carbonaceous mudstone rip-up clasts at 20.65-20.75m.

24.15	27.9	Dark grey mudstone and carbonaceous mudstone. Increasing amounts of fine-grained sandstone proximal to downhole contact. Up-hole: conformable bedded contact at 80 degrees
27.9	28.73	Interbedded carbonaceous mudstone, mudstone and siltstone
28.73	28.84	Fault zone with some clay alteration
28.84	28.93	Core Loss - ground away
28.93	29.23	Fault zone with some clay alteration
29.23	29.68	Grey mudstone and carbonaceous mudstone and minor fine to medium-grained sandstone
29.68	30.62	Dark grey carbonaceous mudstone interbedded with mudstone
30.62	32.28	Grey, fine to medium-grained sandstone with some carbonaceous mudstone banding. 'Micro'-faulting present.
32.28	33.17	Dark grey carbonaceous mudstone with minor sandstone. Bedding at 85-90 degrees to core axis
33.17	34.1	Dark grey to black carbonaceous mudstone with minor sandstone banding
34.1	37.44	Dark grey carbonaceous mudstone with increasing dark grey sandstone down hole. 2mm vitric coal banding at 35.83 & 36.6m
37.44	38.39	Heavy, dull coal with frequent carbonaceous mudstone and mudstone banding. Somewhat gradational down hole contact
38.39	39.28	Black carbonaceous mudstone interbedded with fine to medium-grained cream sandstone. Minor vitric coal banding at 38.7m
39.28	41.65	Grey to pale grey sandstone interbedded with some carbonaceous mudstone and mudstone
41.65	42.6	Dark grey mudstone and carbonaceous mudstone with minor sandstone
42.6	44.02	Pale grey to cream, medium to coarse grained quartz sandstone with dark grey carbonaceous mudstone banding
44.02	46.25	Pale grey to cream, medium to coarse-grained quartz sandstone with minor dark grey carbonaceous mudstone banding
46.25	46.95	Dark grey mudstone to medium grained sandstone (fining upwards)
46.95	50.37	Pale grey to cream, medium-grained quartz sandstone with carbonaceous mudstone flacer banding
50.37	51.27	Dark grey carbonaceous mudstone with minor coal and very minor vitric bands
51.27	51.75	Dark grey carbonaceous mudstone
51.75	55.35	Medium to dark grey mudstone and carbonaceous mudstone with very minor vitric coal bands
55.35	55.55	Bright vitric coal with some carbonaceous mudstone bands
55.55	58.4	Medium to dark grey mudstone with minor carbonaceous mudstone and minor medium-grained sandstone
58.4	59.1	Grey to dark grey, medium-grained sandstone with carbonaceous mudstone flacer banding
59.1	62.18	Medium to dark grey mudstone and carbonaceous mudstone with minor sandstone increasing down hole
62.18	64.12	Grey, medium-grained lithic sandstone with dark grey to black flacer banding in a series of small fining upward cycles
64.12	64.4	Dark grey to black carbonaceous mudstone
64.4	64.8	Interbedded dark grey to black carbonaceous mudstone and medium-grained sandstone
64.8	64.9	Bright broken coal
64.9	64.97	Black carbonaceous mudstone and coal
64.97	69.52	Interbedded fine to medium-grained sandstone with carbonaceous mudstone flacer banding. Frequent cross-bedding

69.52	75.13	Light grey, fine to medium-grwined sandstone interbedded with mudstone and carbonaceous mudstone. Increasing sandstone abundance down hole. Carbonaceous, conglomeratic sized, mudstone rip-up clasts at 74.5m
75.13	76.45	Interbedded dark grey to black, carbonaceous mudstone, mudstone and medium-grained pale sandstone
76.45	79.8	Pale grey, medium-grained quartz sandstone with minor carbonaceous mudstone flacer banding
79.8	81.18	Medium-grained, pale grey quartz sandstone with dark grey to black carbonaceous mudstone flacer banding
81.18	94.73	Grey Lithic sandstone with minor to very minor carbonaceous mudstone banding up hole. Compressed carbonaceous mudstone clasts and *dichroidium*fossils throughout. Carbonaceous mudstone banding also present at 90.2, 91, 93.3m and base of unit. Carbonaceous mudstone rip-up clasts at 83.7-84m
94.73	96	Pale grey, medium-grained quartz sandstone with minor carbonaceous mudstone banding
96	97.15	Grey mudstone and carbonaceous mudstone interbedded with minor sandstone
97.15	102.25	Dark grey to grey mudstone and carbonaceous mudstone with increasing sandstone down hole. Carbonaceous mudstone clasts at 102m
	EOH	

Appendix 3. OJ003 Lithology Log

Drill Hole ID: OJ003

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 29/3/12 - 2/4/12

Collar: Easting: 55 525 602
Northing: 5 300 695
Elevation: 443
(GDA - GPS)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	4.75	Cutting bit - No core. Weathered coal intecepted from 3.3-3.75m & 4.2-4.6m
4.75	4.86	Black clay
4.86	5.16	Orange and grey clay
5.16	6.8	Orange to brown, strongly to moderately weathered interbedded mustone and sandstone
6.8	8.34	Grey, medium to fine-grained lithic sandstone
8.34	9.15	Grey mudstone
9.15	9.8	Grey, fine-grained dolerite
9.8	11	Grey to brown mudstone. Very broken at up and downhole boundaries
11	11.41	Core Loss - broken ground
11.41	11.66	Brown mudtsone and carbonaceous mudstone
11.66	12.32	Moderately bright, brittle coal with calcite veining. Somewhat dull and weathered up hole proximal to fault.
12.32	12.6	Dark brown carbonaceous mudstone
12.6	17.23	Grey mudstone and minor carbonaceous mudstone and minor fine-grained sandstone increasing downhole. Bedding visible at 15.4m and cross bedding around 17m
17.23	20.57	Grey to pale grey, medium to fine-grained lithic sandstone with minor carbonaceous mudstone flacer banding
20.57	23.5	Grey to dark grey mudstone and carbonaceous mudstone. Carbonaceous mudstone increasing in abundance down hole. Frequent Jointing to 21.2m
23.5	23.64	Carbonaceous mudstone
23.64	23.72	Coal and carbonaceous mudstone with calcite cleats
23.72	23.85	Carbonaceous mudstone and coal mud
23.85	24.9	Dark grey to grey interbedded carbonaceous mudstone and mudstone
24.9	25.5	Coal and carbonaceous mudstone with minor calcite veining up hole
25.5	26.37	Frequently jointed grey mudstone
26.37	27.18	Grey mudstone
27.18	27.25	Coal and carbonaceous mudstone
27.25	27.35	Grey to dark grey mudstone and carbonaceous mudstone
27.35	33.3	Pale grey, frequently jointed, silica-sericite altered mudstone. Increasing degree of alteration down hole. Appears to be dolerite related contact metamorphism
33.3	33.45	Core Loss - Ground away/broken ground
33.45	40.37	Frequently fractured, pale grey, silica-sericite altered (hornfelsed) mudstone and sandstone. Sandstone increasing in abundance downhole. Calcite veining abundant in proximity with downhole contact
40.37	45.65	Grey-green, medium-grained dolerite. Fine-grained chilled margin and some vein brecciation proximal to uphole contact. Frequent calcite veining throughout.

Appendix 4. OJ004 Lithology Log

Drill Hole ID: OJ004

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 16/4/12 - 17/4/12

Collar: Easting: 55 525 451
Northing: 5 305 593
Elevation: 407
(GDA - GPS)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	9.9	Cutting bit - No Core
9.9	12.82	Orange weathered, medium to coarse-grained lithic sandstone with 5cm mudstone rip-up clasts at 11.6m
12.82	13.94	Dull, heavy coal with minor bright brittle bands and some mudstone banding
13.94	14.38	Pale grey, broken mudstone
14.38	15.25	Core Loss - washed away (water return grey)
15.25	17.28	Grey mudstone with minor darker grey mudstone banding and small intervals of pale grey, fine-grained sandstone down hole. Minor flacer banding in sandstone
17.28	18.21	Pale grey, fine to medium-grained lithic sandstone with some flacer banding
18.21	18.58	Grey to dark grey interbedded mudstone and fine-grained lithic sandstone with minor carbonaceous mudstone. Bedding at 18.4m at 85 degrees to core axis
18.58	19.83	Pale grey, fine-grained lithic sandstone with minor mudstone and carbonaceous mudstone
19.83	19.9	Dark grey mudstone and carbonaceous mudstone
19.9	19.97	Minor bright coal with vitrinite banding
19.97	22.81	Grey to dark grey mudstone with minor carbonaceous mudstone and very minor sandstone
22.81	23.45	Grey sandstone with minor sandstone. Cross bedding present
23.45	28.35	Grey, medium to coarse-grained lithic sandstone with *dichroidium* fossils and zonal flacer banding (especially 26.25-26.45m) and prominant cross bedding (24.6-25.1m)
28.35	29.12	Dull, moderately heavy coal with minor vitrinite
29.12	30.88	Grey mudstone and minor fine-grained sandstone
30.88	31.1	Pale grey, fine to medium-grained lithic sandstone with minor mudstone up hole and minor flacer banding down hole
31.1	32.2	Strongly flacer banded, pale grey to grey, fine to medium-grained lithic sandstone with minor mudstone. 'Micro' faulting at 31.7 & 32.2m
32.2	33.57	Pale grey, fine to medium-grained lithic sandstone with flacer banding common and gradational down hole contact
33.57	37.23	Green, altered medium-grained lithic sandstone with very minor flacer banding. 'Grey'ing downhole
37.23	37.5	Black to green, highly altered coal(?) and medium to coarse-grained sandstone.
37.5	37.85	Green-grey, fine to very fine-grained dolerite chilled margin. 3.5 joint sets around contact
37.85	48.65	Green-grey, fine to medium-grained dolerite with frequent jointing to 41.7m and calcite veinlets
	EOH	

Appendix 5. Water Borehole Data Summary

Water Borehole Coal Data

Hole ID	Intercept	m From	m To	Width (m)	Collar Co-ordinates		Date Drilled	Company	Depth (m)	Hole type	Area
					Easting	Northing					
2649	coaly shale	25.9	27.1	1.2	531114	5293883	20/07/50	Department of Mines	59.4	Air Percussion	Colebrook
	coaly matter	30.5	32	1.5							
	coaly matter	36.6	38.1	1.5							
	coaly matter	42.1	43.3	1.2							
2698	black mudstone	14.3	17.1	2.8	530314	5291683	24/05/50	Department of Mines	38.1	Air Percussion	Colebrook
	coaly matter	30.5	34.2	3.7							
2726	coaly matter	16.2	17.4	1.2	529674	5291093	4/12/52	Department of Mines	21.3	Air Percussion	Colebrook
3584	coal	15.2	16.1	0.9	530639	5293283	10/01/94	Spaldings	57.9	Air Percussion	Colebrook
4032	black mudstone	1.52	2.7	1.18	523714	5308683	8/09/49	Department of Mines	19.8	Air Percussion	Stonor
	black mudstone	7.3	8.5	1.2							
	coaly matter	10.4	11.6	1.2							
4033	black mudstone	1.83	2.7	0.87	523814	5308783	13/09/49	Department of Mines	17.1	Air Percussion	Stonor
	coaly matter	7.9	12.2	4.3							
4034	black soil	0	0.6	0.6	523814	5308983	15/09/49	Department of Mines	9.8	Air Percussion	Stonor
	coaly matter	8.5	9.2	0.7							
	black mudstone	9.2	9.8	0.6							
4036	black soil	0	0.6	0.6	523514	5310083	6/10/49	Department of Mines	32	Air Percussion	Stonor
	coaly matter	10.7	11.3	0.6							
	black mudstone	25.3	26.5	1.2							
4067	coal	47	47.1	0.1	536314	5300433	1/01/81	RIC	53.3	Downhole Hammer	Stonor
4069	black mudstone	4.3	7.6	3.3	523914	5307783	30/04/52	Department of Mines	32	Air Percussion	Stonor
4073	black sandstone	9.8	14.9	5.1	524214	5305383	5/10/50	Department of Mines	24.4	Air Percussion	Stonor
4088	black mudstone	25.3	26.8	1.5	526514	5308683	3/01/51	Department of Mines	44.2	Air Percussion	Stonor
4096	black mudstone	8.5	9.8	1.3	524814	5306183	27/10/49	Department of Mines	30.5	Air Percussion	Stonor
	black mudstone	12.5	14	1.5							
	black mudstone	22	23.5	1.5							
	coal	27.5	29	1.5							
4103	coal	13	13.5	0.5	533364	5311233	24/11/78	RIC	24	Air Percussion	Oatlands
4106	black shale and coal like matter	2.7	4.6	1.9	522814	5297983	8/03/55	Department of Mines	38.7	Air Percussion	Colebrook
	black shale and coal like matter	5.2	9.8	4.6							
4135	coal	18	18.2	0.2	536014	5300683	9/05/79	RIC	21.5	Air Percussion	Stonor
4165	coaly	11.3	13.7	2.4	526214	5298733	20/08/52	Department	25.9	Air	Colebrook

	matter							of Mines		Percussion	
4243	mudstone, sandstone and coal	66	150	84	522314	5298933	19/11/85	Department of Mines	150	Air Percussion	Colebrook
4265	coal and mudstone	9	14	5	526614	5296883	6/11/91	Department of Mines	90	Downhole Hammer	Colebrook
	coal and mudstone	59	62	3							
15771	coal and mudstone	9	14	5	526614	5296383	12/11/91	Department of Mines	96		Colebrook
	coal and mudstone	59	62	3							
15775	sandstone with coal bands and mudstone	15	60	45	525214	5299933	19/11/91	Department of Mines	60	Air Percussion	Colebrook
15777	sandstone and coal	13	21	8	525064	5306333	25/11/91	Department of Mines	42	Air Percussion	Stonor
15781	coal	6	7	1	524914	5316083	15/03/95	Spaldings	113	Air Percussion	Oatlands
	coal	10	11	1							
	coal	15	16	1							
	coal	26	27	1							
	black mudstone	52.5	58	5.5							
	hard black mudstone	72	73	1							
15782	coal	13.5	14	0.5	525814	5312983	16/03/95	Spaldings	113	Air Percussion	Oatlands
	coal	16.5	17.5	1							
15783	black clay	0	0.2	0.2	532314	5304883	18/03/95	Spaldings	100	Air Percussion	Stonor
15784	baked carbonaceous mudstone	87	87.5	0.5	530564	5301083		Spaldings	113	Air Percussion	Stonor
15785	black mudstone	15	19.5	4.5	536264	5299233	23/03/95	Spaldings	103	Air Percussion	Colebrook
	hard black mudstone	19.5	42	22.5							
	black fractured mudstone	42	43	1							
	black mudstone	43	99	56							
	hard black mudstone	99	103	4							
17393	grey-black mudstone	9	55	46	531539	5297563	7/09/98	KMR	55	Air Percussion	Colebrook
17968	black clay	0.6	9.2	8.6	518497	5301076	28/01/99	Spaldings	39.7	Air Percussion	Stonor
18785	coal and mudstone	9	14	5	527864	5287983	6/11/91	Department of Mines	90	Air Percussion	Colebrook
	coal and mudstone	59	62	3							
19151	black clay	0.6	9.2	8.6	528244	5308758	28/01/99	Spaldings	39.7		Stonor
19157	sandstone and occasional coal seams	3.7	94.6	90.9	524531	5308350	11/10/00	Spaldings	94.6		Stonor
31283	grey sandstone - occasional coal layers	7	57	50	524531	5308300	11/10/00	Spaldings	75		Stonor
31523	black clay	0	2	2	523764	5309483	17/01/01	Spaldings	60		Stonor
2690	black mudstone and narrow bands of grit	6.1	8.2	2.1	516213	5291683	21/10/54	Department of Mines	27.4	Air Percussion	Kempton
2708	black	18.3	19.8	1.5	516313	5290883	27/07/53	Department	19.8	Air	Kempton

	mudstone							of Mines		Percussion	
3518	mudstone, sandstone and coal	0	90	90	514463	5294433	30/04/84	Department of Mines	90	Air Percussion	Kempton
4279	mudstone, sandstone and coal	50	85	35	511763	5301233	11/07/84	Department of Mines	86	Air Percussion	Bothwell
14827	black soil	0	0.9	0.9	515313	5292083	30/08/94	Spaldings	57.9	Air Percussion	Kempton
17453	mudstone and coal measures	1	72	71	515213	5286883	24/08/98	KMR	80	Air Percussion	Elderslie
17968	black clay	0.6	9.2	8.6	518497	5301076	28/01/99	Spaldings	39.7	Air Percussion	Stonor
31253	black clay	0	0.5	0.5	511248	5301233	28/03/01	Spaldings	30		Bothwell

Appendix 6. Chip Logging Key

Chip Logging Codes

Rock Type	
Code	**Description**
SS	Sandstone
MS	Mudstone
CMS	Carbonaceous Mudstone
COAL	Coal
DOL	Dolerite
CY	Clay

Alteration	
Code	**Description**
OXI	Oxidised
FR	Fresh
SE	Sericite
SI	Silica
CA	Calcite
CY	Clay

Colour	
Code	**Description**
OR	Orange
BR	Brown
GY	Grey
DKGY	Dark Grey
PLGY	Pale Grey
BK	Black
YE	Yellow
WH	White
GE	Green

Grain Size	
Code	**Description**
VFG	Very Fine Grained
FG	Fine Grained
MG	Medium Grained
CG	Coarse Grained
VCG	Very Coarse Grained

Mineralisation	
Code	**Description**
PY	Pyrite

Appendix 7. OJ005 Lithology Log

OJ005 - Open Hole Log

m From	m To	Rock Type	Colour	Alteration	Grain Size	Mineralisation	Comments
0	1	Tallus	OR/BR	OXI	VAR	-	Dolerite and mudstone tallus. Dolerite is medium-grained, mudstone is fine-grained
1	2	Tallus	OR/BR	OXI	VAR	-	Dolerite and mudstone tallus. Dolerite is medium-grained, mudstone is fine-grained
2	3	Tallus	BR(OR)	OXI	VAR	-	Dolerite and mudstone tallus. Dolerite is medium-grained, mudstone is fine-grained
3	4	Dolerite	BR(DKBL)	OXI	FMG	-	Dolerite and minor to very minor mudstone
4	5	Dolerite	BR	OXI	FMG	-	
5	6	Dolerite	BR(OR)	OXI	FMG	-	
6	7	Dolerite	BR(DKBL)	OXI/FR	FMG	-	
7	8	Dolerite	DKBL/BR	OXI/FR	FMG	-	
8	9	Dolerite	BR/DKBL	OXI/FR	FMG	-	
9	10	Dolerite	DKBL(BR)	OXI/FR	FMG	-	
10	11	Dolerite	DKBL(BR)	OXI/FR	FMG	-	
11	12	Dolerite	DKBLGY(BR)	OXI/FR	FMG	-	
12	13	Dolerite	DKBL(BR)	OXI/FR	FMG	-	Approximately 12.5m hit water. Corresponding decrease in sample size
13	14	Dolerite	DKBLGY	FR(OXI)	FMG	-	
14	15	Dolerite	DKBLGY(BR)	FR(OXI)	FMG	-	
15	16	Dolerite	DKBLGY(OR)	FR(OXI)	FMG	-	
16	17	Dolerite	DKBLGY(OR)	FR(OXI)	FMG	-	
17	18	Dolerite	DKBLGY(OR)	FR	FMG	-	
18	19	Dolerite	DKBLGY(OR)	FR	FMG	-	
19	20	Dolerite	DKBLGY(OR)	FR	FMG	PY	Trace pyrite
20	21	Dolerite	DKBLGY	FR	FMG	-	
21	22	Dolerite	DKBLGY	FR	FMG	-	
22	23	Dolerite	DKBLGY	FR	FMG	-	
23	24	Dolerite	DKBLGY	FR	FMG	-	
24	25	Dolerite	DKBLGY	FR	FMG	-	
25	26	Dolerite	DKBLGY	FR	FMG	-	
26	27	Dolerite	DKBLGY	FR	FMG	-	
27	28	Dolerite	DKBLGY	FR	FMG	-	
28	29	Dolerite	DKBLGY	FR	FMG	-	
29	30	Dolerite	DKBLGY	FR	FMG	-	
30	31	Dolerite	DKBLGY	FR	FMG	-	
31	32	Dolerite	DKBLGY	FR	FMG	-	
32	33	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite

33	34	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite, especially on fracture surfaces
34	35	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
35	36	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
36	37	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
37	38	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
38	39	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
39	40	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
40	41	Dolerite	DKBLGY	FR	FMG	-	
41	42	Dolerite	DKBLGY	FR	FMG	-	
42	43	Dolerite	DKBLGY	FR	FMG	-	
43	44	Dolerite	DKBLGY	FR	FMG	-	
44	45	Dolerite	DKBLGY	FR	FMG	-	
45	46	Dolerite	DKBLGY	FR	FMG	-	
46	47	Dolerite	DKBLGY	FR	FMG	-	
47	48	Dolerite	DKBLGY	FR	FMG	-	
48	49	Dolerite	DKBLGY	FR	FMG	-	
49	50	Dolerite	DKBLGY	FR	FMG	-	
50	51	Dolerite	DKBLGY	FR	FMG	-	
51	52	Dolerite	DKBLGY	FR	FMG	-	
52	53	Dolerite	DKBLGY	FR	FMG	-	
53	54	Dolerite	DKBLGY	FR	FMG	-	Minor pale green chips: fracture infil (?)
54	55	Dolerite	DKBLGY	FR	FMG	-	
55	56	Dolerite	DKBLGY	FR	FMG	-	
56	57	Dolerite	DKBLGY	FR	FMG	-	
57	58	Dolerite	DKBLGY	FR	FMG	-	
58	59	Dolerite	DKBLGY	FR	FMG	-	
59	60	Dolerite	DKBLGY	FR	FMG	-	
60	61	Dolerite	DKBLGY	FR	FMG	-	
61	62	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
62	63	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
63	64	Dolerite	DKBLGY	FR	FMG	-	
64	65	Dolerite	DKBLGY	FR	FMG	-	
65	66	Dolerite	DKBLGY	FR	FMG	-	
66	67	Dolerite	DKBLGY	FR	FMG	-	
67	68	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
68	69	Dolerite	DKBLGY	FR	FMG	-	
69	70	Dolerite	DKBLGY	FR	FMG	-	
70	71	Dolerite	DKBLGY	FR	FMG	-	
71	72	Dolerite	DKBLGY	FR	FMG	-	
72	73	Dolerite	DKBLGY	FR	FMG	-	
73	74	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
74	75	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
75	76	Dolerite	DKBLGY	FR	FMG	PY	Gushing water. Trace pyrite
76	77	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
77	78	Dolerite	DKBLGY	FR	FMG	-	

78	79	Dolerite	DKBLGY	FR	FMG	-	
79	80	Dolerite	DKBLGY	FR	FMG	-	Cyclone removed. Diminished sample size
80	81	Dolerite	DKBLGY	FR	FMG	-	
81	82	Dolerite	DKBLGY	FR	FMG	-	
82	83	Dolerite	DKBLGY	FR	FMG	-	
83	84	Dolerite	DKBLGY	FR	FMG	-	
84	85	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets, one pyrite veinlet
85	86	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
86	87	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
87	88	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets. Trace pyrite
88	89	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets. Trace pyrite
89	90	Dolerite	DKBLGY (WH)	FR	FMG	-	Minor to very minor quartz veinlets
90	91	Dolerite	DKBLGY	FR	FMG	-	
91	92	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets. Trace pyrite
92	93	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
93	94	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
94	95	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
95	96	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets. Trace pyrite
96	97	Dolerite	DKBLGY (WH)	FR	FMG	PY	Minor to very minor quartz veinlets. Trace pyrite
97	98	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
98	99	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite
99	100	Dolerite	DKBLGY	FR	FMG	PY	Trace pyrite

Appendix 8. OJ008 Lithology Log

OJ008 - Open Hole Log

m From	m To	Rock Type	Colour	Alteration	Grain Size	Mineralisation	Comments
0	1	MS	BR	OXI	FG	-	(Cutting bit) Mostly clay. Very small sample
1	2	MS	PLOR/CM	OXI	FG	-	Small sample
2	3	MS	BR	OXI	FG	-	Smaller sample
3	4	MS	BRGY	OXI	FG	-	Very small sample
4	5	MS	BRGY	OXI	FG	-	(Hammer bit - Collar pipe intalled - Cyclone attached) Very small sample
5	6	MS	DKBRGY	OXI	FG	-	Soft mudstone
6	7	MS	DKBRGY	OXI	FG	-	Soft mudstone
7	8	MS	DKBRGY	OXI	FG	-	Soft mudstone
8	9	MSCY	PLOR/CM	OXI	FG	-	Very small sample. Mostly clay
9	10	MSCY/CMS	BK/GY(CM)	FR(OXI)	FG	-	Soft mudstone and competent carbonaceous mudstone. Small sample
10	11	MSCY/MS	GY	FR(WK)	FG	-	Soft mudstone. Small sample
11	12	MSCY(CMS)	GY(BK)	FR(WK)	FG	-	Soft mudstone. Small sample
12	13	MS(CMS)	DKGY(BK)	FR	FG	-	Soft mudstone. Small sample
13	14	MS	GY(BK)	FR	FG	-	
14	15	MS	GY	FR	FG	-	
15	16	CMS(MS)	BK(DKGY)	FR	FG	-	
16	17	MS	GY	FR(WK)	FG	-	Soft mudstone
17	18	MS	GY	FR(WK)	FG	-	Soft mudstone
18	19	MS	GY	FR(WK)	FG	-	Soft mudstone
19	20	MS	GY/DKGY	FR	FG	-	
20	21	CMS/COAL(?)(MS)	BK(GY)	FR	FG	-	
21	22	CMS/MS	BK/DKGY	FR	FG	-	
22	23	MS/CMS	DKGY/GY	FR(WK)	FG	-	
23	24	MS	GY	FR(WK)	FG	-	
24	25	MS	GY	FR(WK)	FG	-	(Slightly damp sample)
25	26	MS	GY	FR	FG	-	
26	27	MS	GY	FR	FG	-	
27	28	MS(CMS)	GY(BK)	FR	FG	-	
28	29	CMS/COAL(?)(MS)	BK(GY)	FR	FG	-	
29	30	MS/CMS	GY/BK	FR	FG	-	
30	31	MS	GY	FR	FG	-	
31	32	MS	GY	FR(WK)	FG	-	Small sample
32	33	MS	GY	FR	FG	-	
33	34	MS	GY	FR	FG	-	

34	35	MS	GY	FR	FG	-	
35	36	MS	GY	FR	FG	-	
36	37	MS	GY	FR	FG	-	
37	38	MS/SS	GY/PLGY	FR	FG	-	Small sample
38	39	MS(CMS)	GY(BK)	FR	FG	-	
39	40	MS	GY/PLGY	FR	FG	-	
40	41	MS	GY/DKGY	FR	FG	-	
41	42	MS	DKGY	FR	FG	-	
42	43	MS	DKGY	FR	FG	-	
43	44	MS	GY	FR	FG	-	
44	45	MS	GY	FR	FG	-	
45	46	MS	GY	FR	FG	-	
46	47	MS	GY/DKGY	FR	FG	-	
47	48	MS	GY	FR	FG	-	
48	49	MS	GY	FR	FG	-	
49	50	MS(CMS)	GY(DKGY)	FR	FG	-	
50	51	MS(CMS)	GY(DKGY)	FR	FG	-	
51	52	CMS/COAL(?)	BK(DKGY)	FR	FG	-	
52	53	MS/CMS	GY(DKGY)	FR	FG	-	
53	54	MS	GY(DKGY)	FR	FG	-	
54	55	MS	GY(DKGY)	FR	FG	-	
55	56	MS	GY(DKGY)	FR	FG	-	
56	57	MS	GY(DKGY)	FR	FG	-	
57	58	MS	GY(DKGY)	FR	FG	-	
58	59	MS	GY(DKGY)	FR	FG	-	
59	60	MS	GY(DKGY)	FR	FG	-	
60	61	MS	GY	FR	FG	-	
61	62	MS(CMS)	GY(DKGY)	FR	FG	-	
62	63	MS	GY	FR	FG	-	
63	64	MS(CMS)	GY(BK)	FR	FG	-	
64	65	MS(CMS)	GY(DKGY)	FR	FG	-	
65	66	MS	DKGY	FR	FG	-	
66	67	MS	DKGY	FR	FG	-	
67	68	MS	GY	FR	FG	-	
68	69	MS	GY/DKGY	FR	FG	-	
69	70	MS	GY	FR	FG	-	
70	71	MS	GY	FR	FG	-	
71	72	MS	GY	FR	FG	-	
72	73	MS(CMS)	DKGY(BK)	FR	FG	-	
73	74	MS	GY	FR	FG	-	
74	75	MS	GY	FR	FG	-	
75	76	MS	GY	FR	FG	-	
76	77	MS	GY	FR	FG	-	
77	78	MS	GY	FR	FG	-	
78	79	MS	GY	FR	FG	-	
79	80	MS	GY	FR	FG	-	
80	81	MS/CMS	DKGY/BK	FR	FG	-	

81	82	MS/CMS	GY/BK	FR	FG	-	
82	83	MS(CMS)	GY(BK)	FR	FG	-	
83	84	MS	GY	FR	FG	-	
84	85	MS	GY	FR	FG	-	
85	86	MS	GY	FR	FG	-	
86	87	MS(CMS)	GY(BK)	FR	FG	-	
87	88	MS	GY	FR	FG	-	
88	89	MS	GY	FR	FG	-	
89	90	MS(CMS)	GY(BK)	FR	FG	-	
90	91	MS	GY	FR	FG	-	
91	92	MS	GY	FR	FG	-	
92	93	MS	GY	FR	FG	-	
93	94	MS	GY	FR	FG	-	
94	95	MS	GY	FR	FG	-	
95	96	MS(CMS)	GY(DKGY)	FR	FG	-	
96	97	MS(CMS)	GY(DKGY)	FR	FG	-	
97	100	MS/CMS	GY/DKGY/GO	FR	FG	PY	Approximately 5% pyrite, large chips. Last 3m combined due to very poor sample

Appendix 9. Gamma Ray Logging of Coal Exploration Drill Holes in the Woodbury, Jericho and Mount Vernon Areas, Tasmania

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24.5.2013

GAMMA RAY LOGGING OF COAL EXPLORATION DRILL HOLES IN THE WOODBURY, JERICHO AND MOUNT VERNON AREAS, TASMANIA.

Introduction.

Gamma ray logging of eight PVC cased coal exploration drill holes were undertaken on the 15th and 16th of May 2013 in the Woodbury, Jericho and Mount Vernon coal exploration areas in northern Tasmania. This program was implemented to see if systematic gamma ray logging of future exploration drill holes would provide an efficacious method to assist identification and lateral continuity of coal measure sequences. The gamma ray logging showed that provided the drill holes in the Woodbury area are spaced at about 1 kilometre centres it is possible to correlate individual seams. In the Jericho area it seems likely that correlation between the coal measure sequences can be made over distances of about 7km or more and may indicate an extensive area of coal linking two adjacent valley systems.

1. The Woodbury Area.

Drill holes W69, 70, 71 & 72 were gamma ray logged in the Woodbury area and all show good gamma ray signatures indicating variation of rock types with depth. Unfortunately these holes were not logged to total depths of 100m because the casing has collapsed at depths between 65 and 75m.

Good lateral continuity of gamma ray logs occurs between W70 & W71 that are separated by a horizontal distance of about 750m. Although the distinctive coal measure sequences can be seen, only Seam B appears to continue to W70 and the remaining seams (Seams A, C, & D) appear to have 'wedged out' due to lateral facies changes at some point between these two drill holes.

Drill holes W69 & W72 appear to be too widely separated to show any certain correlation characteristics. From the examples of drill holes W70 & W71 which also show quite rapid lateral changes, it seems likely that drill holes in this coal basin will need to be spaced at 1km centres to provide reliable correlation between individual coal seams.

2. The Jericho Area.

The gamma ray logs of the Jericho area are distinctly different from those of the Woodbury area indicating that the sequence may represent an older or younger sequence within the coal basin. Drill holes OJ006 & OJ007 are approximately 1km apart and exhibit similar gamma ray depth profile characteristics and a gamma ray marker zone is shown on each log. This marker zone appears to persist for a further 7.75km to the north and is identified in OJ008. If this correlation is correct, it seems likely that this coal basin extends from the Midland Highway area, north-westwards through OJ006 & OJ007 and occupies the valley delineated in the topographic contour map. These coal measures probably lie at shallow depths and may continue across the drainage divide and connect with the north-trending valley where OJ008 is situated. This correlation indicates that a large area of shallow coal exists and may persist under the dolerite capped hills that separate these two valley systems. Gamma ray logging of drill holes spaced on a grid with 1km centres would appear to be a very good means for future exploration of this area.

3. The Mount Vernon Area.

An attempt was made to gamma ray log MTV002 which is PVC lined drill hole drilled to a depth of 242m. Unfortunately this hole has collapsed at a depth of about 90m and no information was obtained through the deeper-lying coal measure sequence.

Conclusions.

Although this gamma ray logging program was fairly limited to just eight drill holes situated in three different coal sub-basins, the results obtained show that this type of logging would form a useful adjunct to future coal exploration drilling. The positive correlation between W70 & W71 in the Woodbury area shows that drill holes approximately 1km apart are likely to assist in correlation of coal seams within this basin which appears to have sudden lateral changes in continuity of individual coal seams.

The gamma ray logs of the Jericho area show different characteristics to those in the Woodbury area. The coal seams are apparently more continuous and relate to a gamma ray marker zone which is identified in the three drill holes. The lateral continuity of the gamma ray marker zone indicates that the coal measure sequence is continuous from the Midland Highway area, northwards and may underlie two valley systems. If the correlation is correct a broad area of flat-lying coal is anticipated in this otherwise little-explored coal sub-basin.

B.R.Senior (Dr)

Attachments

Drill logs of the Woodbury area, W69, W70, W71 & W72.

Drill hole location map of the Woodbury area.

Drill hole logs of the Jericho area, OJ006, OJ007 & OJ008.

Drill hole location map of the Jericho area.

Drill hole log from the Mount Vernon area, MTV002.

Appendix 10. OJ011 Logs and Core Photos

Hole ID: **OJ011**

Collar:	Northing:	5305194	mN	Datum:	GDA	
	Easting:	525417	mE	Locating Method:	Survey	
	Elevation:	401	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Ellesmere, Mudwalls Road				

Surveys:

Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)	
Depth:	41.3	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Diamond (HQ3)	
Date Drilled:	23/6/2013 - 24/6/2013	
Drilling Company:	Whole Core	
Site Geologist:	Karen Adams	
Logging Geologist:	Karen Adams	

Sampled: No Sampling

Notes: PVC lined to 23m

No significant intercepts

Drill Hole ID: OJ011

Project: Southern Midlands Coal

Licence: 26/2008

Date Drilled: 23rd to the 24th of June, 2013

Collar: Easting: 55 525 417
Northing: 5 305 194
Elevation: 401
(GDA - Survey)

Azimuth: n/a

Dip: -90 degrees

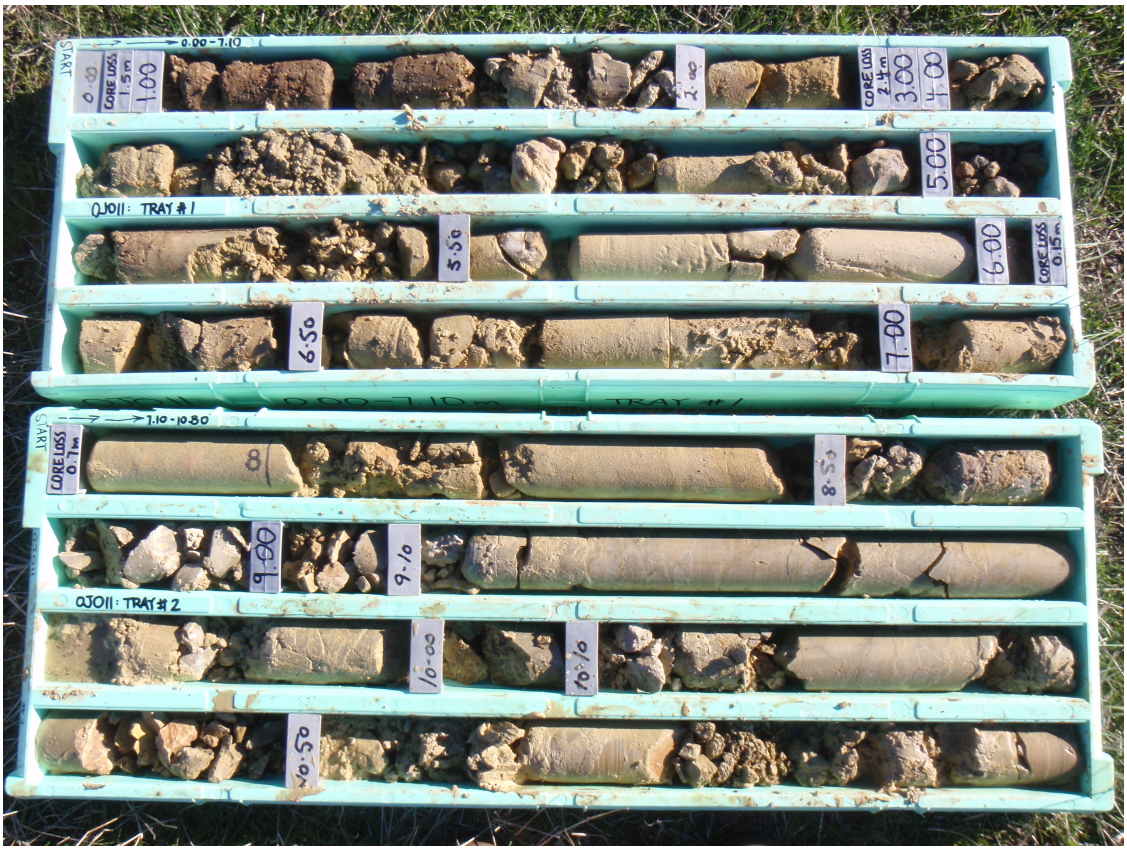
mFrom	mTo	Description
0	1.5	Core Loss
1.5	2.2	Strongly weathered red-brown to pale orange sandstone and clay
2.2	4.6	Core Loss
4.6	5.2	Strongly weathered, red-brown to pale orange tallus
5.2	6	Cream to orange, moderately to strongly weathered medium-grained lithic sandstone
6	6.15	Core Loss - Washed away
6.15	7.1	Soft, moderately to strongly weathered orange to pale orange, medium to fine-grained lithic sandstone
7.1	7.8	Core Loss - Washed away
7.8	8.6	Soft, weathered, orange medium to fine-grained sandstone
8.6	11.7	Frequently fractured, orange, weathered & soft clay rich mudstone
11.7	13.3	Orange-grey, partially weathered mudstone with zonally strong fracture zones (possible fluid pathways)
13.3	13.45	Core Loss - Washed away
13.45	13.65	Strongly broken, orange-grey clay-rich mudstone
13.65	13.95	Core Loss
13.95	14.5	Grey, broken, clay-rich mudstone
14.5	14.7	Dark grey to black, broken carbonaceous mudstone with minor mudstone
14.7	15.2	Grey mudstone
15.2	15.45	Dark grey to black carbonaceous mudstone
15.45	18.82	Grey to green-grey mudstone with minor fine-grained sandstone increasing in abundance downhole
18.82	19.2	Green-grey, silica-sericite-chlorite altered medium-grained lithic sandstone
19.2	20.12	Alternating light brown and green-grey mudstone and sandstone beds
20.12	24.42	Green-grey, medium to coarse-grained sericite-silica-chlorite altered lithic sandstone
24.42	24.57	Black carbonaceous mudstone +/- coal
24.57	25	Orange-brown (and minor grey-green) mudstone
25	25.8	Green-grey interbedded mudstone and sandstone
25.8	26	Core Loss - Ground away
26	26.1	Green-grey mudstone and sandstone
26.1	28.44	Green-grey, fine to medium-grained, sericite-silica altered lithic sandstone with zonal iron-alteration
28.44	34.9	Green-grey, sericite-silica altered, medium to coarse-grained lithic sandstone with flacer banding from 33.5-33.65m and fossilised plants (Dichroidium?) at 32.5m
34.9	35.26	Green, chlorite altered (?) medium to coarse-grained lithic sandstone
35.26	39.3	Green-grey, sericite-silica-chlorite altered medium to coarse-grained lithic sandstone
39.3	41.3	Very broken, green-grey, sericite-silica-chlorite altered mudstone
	EOH	

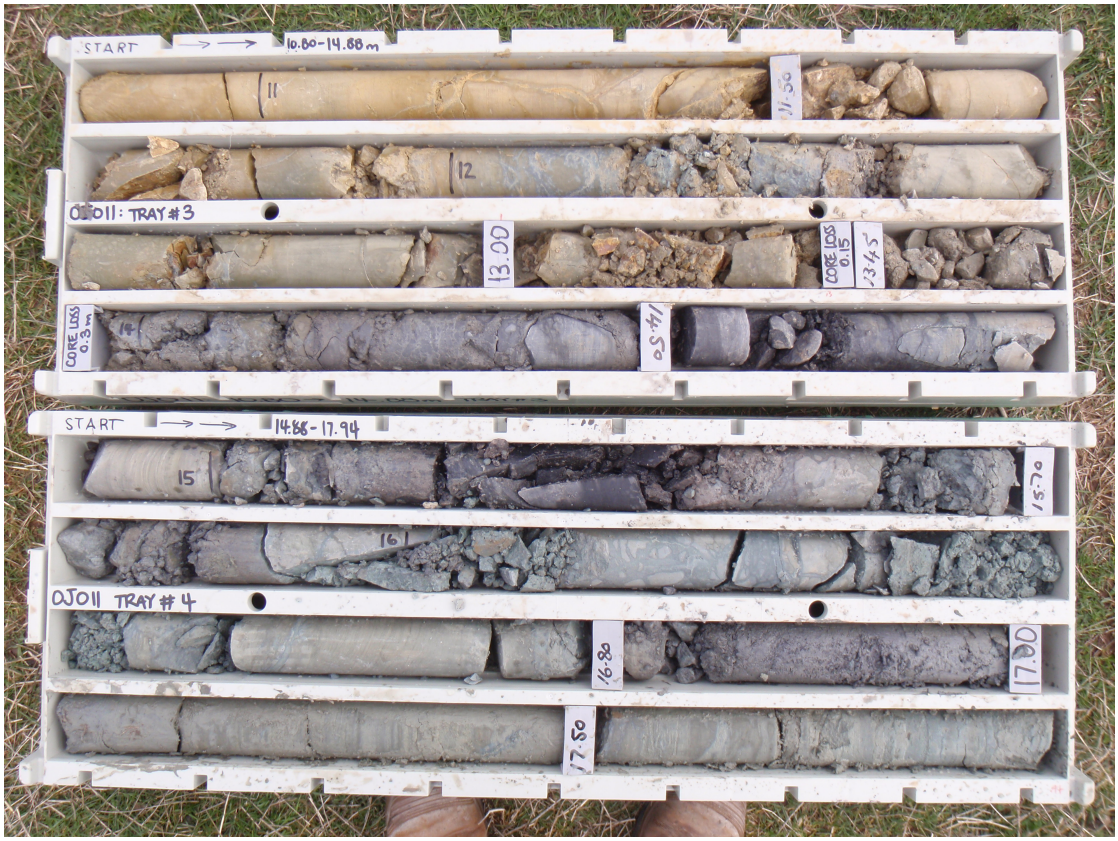
OJ011 - Structure Log

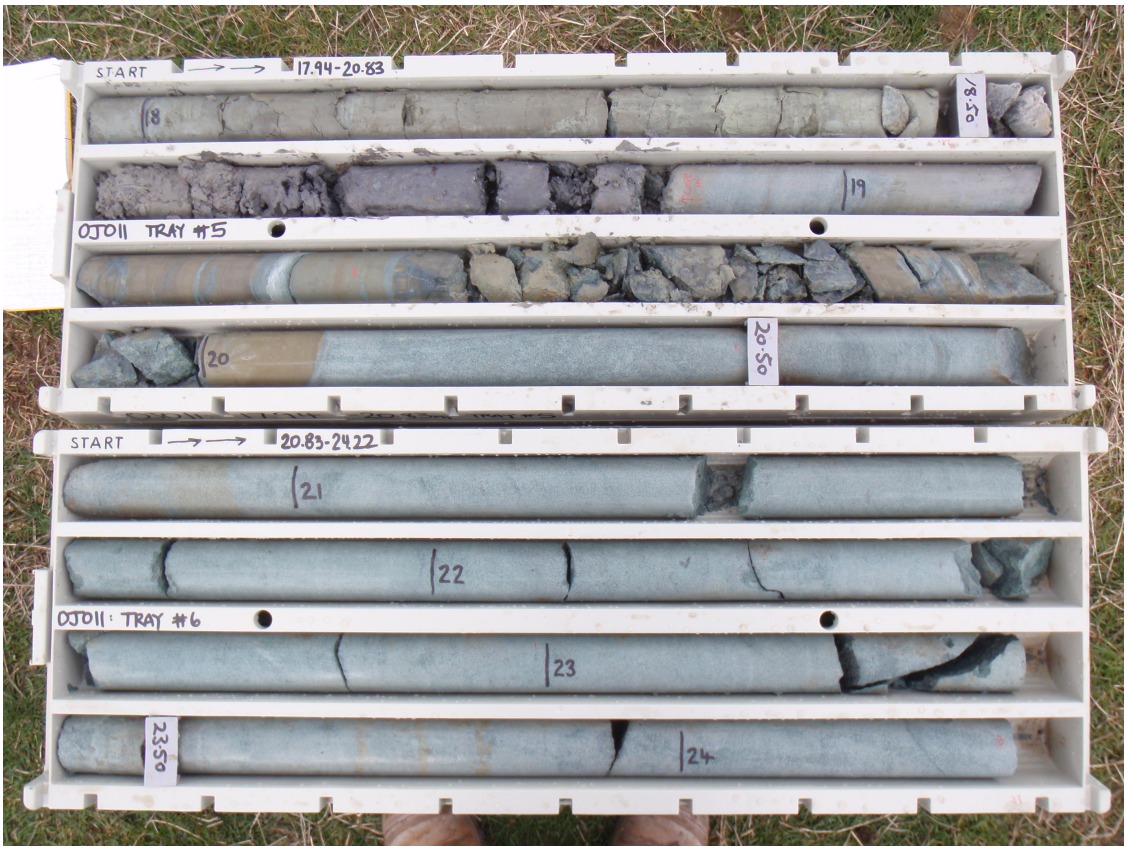
m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
0	10.8	fx		Cy		weathered and soft
11.4	20	fx		Cy		zonal fractures
18.8	20.1	bd	70			
19.5	20	jt	70		PS	
19.5	20	jt	30		PS	
24.8	26	jt	70		UR	
24.8	26	jt	30		UR	
33.5	33.65	bn	70			flacer banding
39.7	40	fx				
40.5	41.3	fx				fault

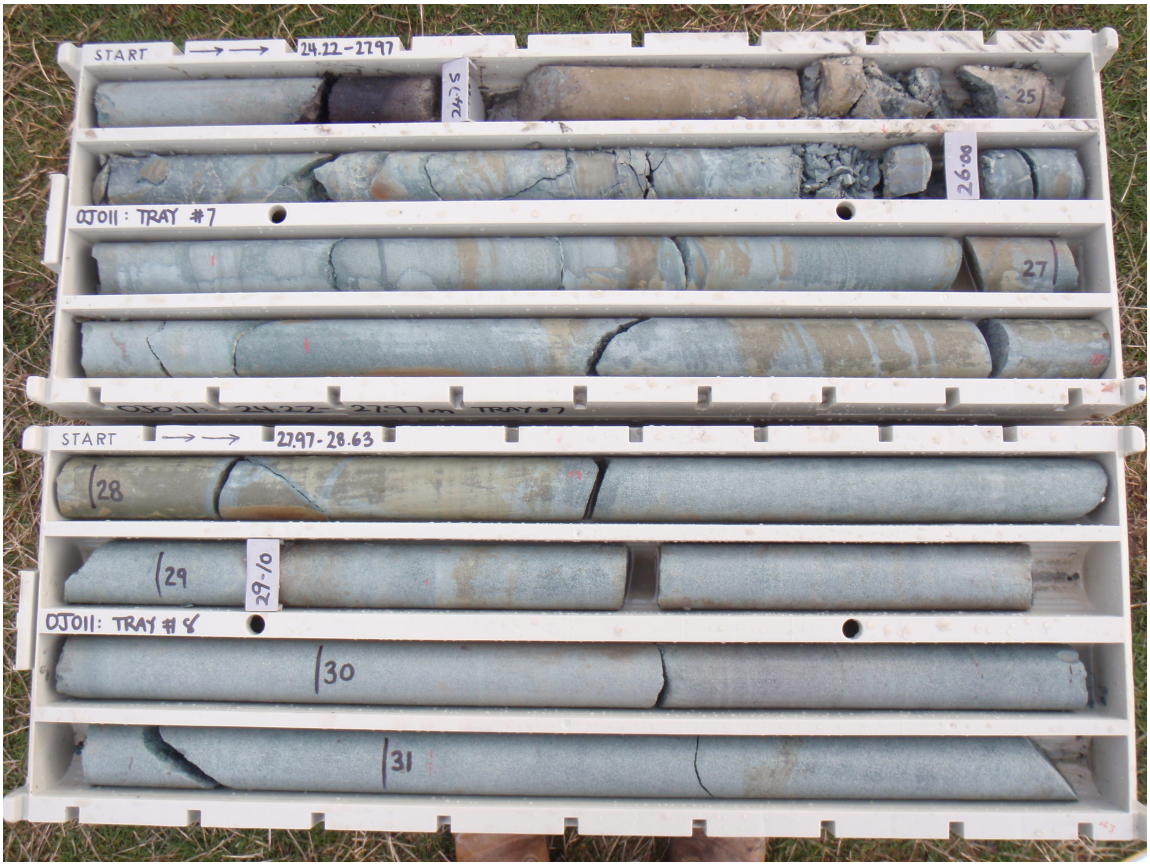
RQD - OJ011

m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	0	0	21	22	100	100
1	2	50	0	22	23	100	100
2	3	20	0	23	24	100	85
3	4	0	0	24	25	100	71
4	5	40	0	25	26	80	0
5	6	100	0	26	27	100	71
6	7	85	0	27	28	100	75
7	8	30	17	28	29	100	89
8	9	100	21	29	30	100	100
9	10	100	18	30	31	100	100
10	11	100	19	31	32	100	100
11	12	100	0	32	33	100	100
12	13	100	0	33	34	100	100
13	14	55	0	34	35	100	100
14	15	100	0	35	36	100	74
15	16	100	0	36	37	100	100
16	17	100	20	37	38	100	100
17	18	100	100	38	39	100	100
18	19	100	18	39	40	100	79
19	20	100	56	40	41	100	52
20	21	100	100	41	41.3	100	0


START
0.00-7.10
CORE LOSS 1.5m
1.00
2.00
CORE LOSS 2.4m
3.00
4.00
5.00
OJO11: TRAY #1
5.50
6.00
CORE LOSS 0.15m
6.50
7.00
7.10-10.80
CORE LOSS 0.7m
8
8.50
9.00
9.10
OJO11: TRAY #2
10.00
10.10
10.50


START
10.80-14.88 m
11
11.50
12
OJO11: TRAY #3
13.00
CORE LOSS 0.15
13.45
CORE LOSS 0.3m
14
14.50
START
14.88-17.94
15
15.20
16
OJO11 TRAY #4
16.80
17.80
17.50


START
17.94-20.83
18
18.50
19
OJ011 TRAY #5
20
20.50
START
20.83-24.22
21
22
OJ011: TRAY #6
23
23.50
24


START
24.22-27.97
24.75
25
26.00
OJ011: TRAY #7
27
START
27.97-28.63
28
29
29.10
OJ011: TRAY #8
30
31


START
31.63-35.26
32
32.20
33
OJ011 TRAY #9
34
35
START
35.26-39.02
35.30
36
37
OJ011 TRAY # 10
38
38.40
39


START
39.02-41.3
EOH
39.80
40
40.60
OJ011: TRAY # 11
41.00

Appendix 11. OJ012 Logs and Core Photos

Hole ID: **OJ012**

Collar:	Northing:	5301094	mN	Datum:	GDA	
	Easting:	525599	mE	Locating Method:	Surveyed	
	Elevation:	437	m	Accuracy:		m
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Ellesmere, Mudwalls Road				

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)		
Depth:	41.45	m	
Azimuth:	n/a	degrees	
Dip	-90	degrees	
Drilling Method:	Diamond (HQ3)		
Date Drilled:	26/6/13 - 28/6/13		
Drilling Company:	Whole Core		
Site Geologist:	Karen Adams		
Logging Geologist:	Karen Adams		

Sampled:				
9.4	m to	10.15	m	Broken coal (incl. cave-in: difficult to distinguish)
10.15	m to	11.24	m	Dominantly heavy dull coal

Results:	mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
	9.4	10.15	0.75					
	10.15	11.24	1.09					

Notes: Sample interval: 9.4 - 10.15m includes cave-in material
PVC lined to EOH
Dolerite at 24.42m

Drill Hole ID: OJ012

Project: Southern Midlands Coal

Licence: 26/2008

Date Drilled: 26th - 28th June, 2013

Collar: Easting: 55 525 599
Northing: 5 301 094
Elevation: 437
(GDA - Surveyed)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	1.02	Core Loss
1.02	1.86	Clay and dirt
1.86	2.3	Orange-brown, highly weathered, clay-rich, fine to medium-grained sandstone and minor mudstone
2.3	2.56	Core Loss
2.56	4.82	Orange-brown, weathered, fine to medium-grained sandstone with flacer banding at 3.77m and 2-3cm rounded, mudstone clasts
4.82	6.9	Zonally broken, brown-orange mudstone and carbonaceous mudstone with minor fine-grained sandstone and flacer banding at 5.76m
6.9	7	Very broken, grey, clay-rich mudstone
7	7.4	Core Loss
7.4	7.7	Very broken, grey to black, clay-rich, carbonaceous mudstone and mudstone
7.7	8.4	Core Loss
8.4	9.4	Grey, clay-rich mudstone and minor carbonaceous mudstone
9.4	10.2	Black, very broken coal with calcite veins and cleats (including some cave-in that is difficult to distinguish)
10.2	11.22	Dominantly heavy, dull coal with minor calcite veining and some carbonaceous mudstone
11.22	11.9	Interbedded grey mudstone and carbonaceous mudstone
11.9	12.86	Grey interbedded fine-grained sandstone and mudstone
12.86	13.3	White to very pale grey, heavy, fine-grained, moderate to intensely altered rock with tensional carbonate veining, clasts (xenoliths??) of up to 3cm in size and varigation of alteration (possibly preferential alteration of flow banding??)
13.3	16	Grading from grey, fine-grained sandstone with mudstone beds, to dominantly dark grey mudstone with prominant finely interbedded carbonaceous mudstone
16	16.36	Carbonaceous mudstone
16.36	24.42	Zonally broken, pale grey, silica-sericite altered and somewhat clay-rich mudstone with some fine-grained sandstone increasing downhole
24.42	41.45	Dominantly medium-grained (with finer grained chilled margin proximal to uphole contact), grey-green dolerite with calcite filled vessicles to 28.2m, stong to moderate calcite veining uphole and vein brecciation at and around 26.6m. Some minor blebby pyrite associated with calcite veining and selvedges downhole
	EOH	

Drill Hole ID: OJ012

Detailed Logs

mFrom	mTo	Description
8.4	9.4	Grey, clay-rich mudstone with minor carbonaceous mudstone
9.4	10.2	Very broken coal with calcite veining and cleating. Significant amounts of cave-in, difficult to distinguish
10.2	10.63	Heavy, dull coal and carbonaceous mudstone with minor calcite veining
10.63	10.92	Finely interbedded carbonaceous and coal with minor mudstone
10.92	11.15	Heavy, dull coal and some carbonaceous mudstone
11.15	11.22	Moderately bright coal with calcite cleats and approximately 1% vitrinite
11.22	11.9	Interbedded grey mudstone and carbonaceous mudstone, grading from dominantly carbonaceous mudstone to dominantly mudstone
11.9	12	Grey interbedded fine-grained sandstone and mudstone

OJ012 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
5.76	5.82	bn	80			70-90 deg - variable flacer banding
6.55	10.2	fx		cy		broken ground - fault?
10.2	11.5	jt	45		US	fault associated broken ground
10.2	11.5	jt	70	gr	US	
12.05	12.16	jt	60	cy	UR	
12.05	12.16	jt	20	cy		
12.86	12.86	Cn	70			contact
13.3	13.4	fx				
13.35	16	bd	85			
15.17	15.27	jt	45		PS	
16.99	17.43	jt	30			
22.38	22.7	fx			UR	
22.8	23.6	fx			UR	
24.43	24.43	jt	85	ca	UR	
24.64	24.78	vn		ca	UR	
25.63	27.54	vn	10	ca	UR	
27.6	27.68	jt	60	ca	UR	
28.61	28.67	jt	70	ca	UR	
29.17	29.3	jt	60	ca	UR	
29.45	29.54	jt	10	ca	UR	
29.45	29.54	jt	30	ca	UR	
32.22	32.45	jt	45	ca	UR	
36.45	38.3	jt	10	ca	UR	
24.5	41.5	bd	90			

RQD - OJ012							
m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	0	0	21	22	100	19
1	2	100	0	22	23	100	62
2	3	74	35	23	24	100	41
3	4	100	27	24	25	100	81
4	5	100	58	25	26	100	79
5	6	100	30	26	27	100	100
6	7	100	0	27	28	100	72
7	8	30	0	28	29	100	100
8	9	60	0	29	30	100	100
9	10	100	0	30	31	100	100
10	11	100	13	31	32	100	100
11	12	100	30	32	33	100	74
12	13	100	36	33	34	100	100
13	14	100	91	34	35	100	95
14	15	100	67	35	36	100	100
15	16	100	67	36	37	100	100
16	17	100	78	37	38	100	100
17	18	100	62	38	39	100	68
18	19	100	52	39	40	100	100
19	20	100	24	40	41	100	100
20	21	100	19	41	41.45	100	100


START
0-4.62
2.00
2.30
CORE LOSS 0.26m
OJ012 TRAY #1
START
4.62- 9.05
OJ012 TRAY #2
6.70
7m
7.40
CORE LOSS 0.4m
8m
8.40
9m
9.05


START
9.05-11.81
9.40
CAVE IN
CAVE IN
ZONAL CAVE IN?
10m
9.95
OJ012 TRAY #3
10.70
11.40
START
11.81-15.32
12m
13m
13.40
OJ012: TRAY #4
14m
14.40
15m


START
15.32-18.83m
15.70
16
OJ012 TRAY #5
17
17.50
18
18.40
START
18.83-22.16
19
20
20.00
OJ012 TRAY #6
21
22


START
22.16-25.76
23.00
23.40
OJ012 TRAY #7
24
25
START
25.76-29.27
26
26.50
27
OJ012 TRAY #8
28
29


START
29.29-33.00
29.50
30
31
OJ012: TRAY #9
32
32.50
START
33.00-36.71
33
34
OJ012: TRAY # 10
35
35.50
36


START
36.71-40.37
37
38
38.50
OJ012: TRAY #11
39
40
START
40.37-41.45 EOH
41
41.50
OJ012: TRAY #12

Appendix 12. OJ013 Logs and Core Photos

Hole ID: **OJ013**

Collar:	Northing:	5315433	mN	Datum:	GDA	
	Easting:	525794	mE	Locating Method:	Survey	
	Elevation:	351	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Road, Oatlands				

Surveys:	Depth	Dip	Azimuth

Company: South East Asia Resources (Tas.)

Depth: 65.4 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 2/7/13 - 3/7/13
Drilling Company: Whole Core

Site Geologist: Karen Adams
Logging Geologist: Karen Adams

Sampled:				
10.62	m to	11.26	m	Carbonaceous mudstone +/- coal
15.49	m to	16.09	m	Heavy dull coal and carbonaceous mudstone
16.66	m to	17.31	m	Heavy dull coal. Approx 1% vitrinite & minor calcite veining
24.52	m to	24.9	m	Carbonaceous mudstone +/- coal
45.42	m to	46	m	Carbonaceous mudstone +/- heavy dull coal
46	m to	46.54	m	Carbonaceous mudstone +/- heavy dull coal
46.54	m to	46.87	m	Grading from moderately bright coal to heavy dull coal
59.3	m to	59.57	m	Broken, heavy dull coal with approximately 2% vitrinite
60.09	m to	60.6	m	Carbonaceous mudstone +/- heavy dull coal

Results:	mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
	10.62	11.26	0.64					
	15.49	16.09	0.6					
	16.66	17.31	0.65					
	24.52	24.9	0.38					
	45.42	46	0.58					
	46	46.54	0.54					
	46.54	46.87	0.33					
	59.3	59.57	0.27					
	60.09	60.6	0.51					

Notes: PVC lined to 60.6m

Drill Hole ID: OJ013

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 2nd -3rd July, 2013

Collar: Easting: 55 525 794
Northing: 5 315 433
Elevation: 351
(GDA - Surveyed)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	1	Orange-cream-brown, weathered clay rich sandstone and some dolerite tallus
1	2	Red-brown clay and dolerite tallus from cave-in(?)
2	2.6	Core Loss
2.6	3	Red-brown clay and dolerite tallus from cave-in(?)
3	3.15	Core Loss
3.15	4	Dark grey, clay-rich mudstone and carbonaceous mudstone
4	5.25	Pale grey to dark grey, fine to medium-grained lithic sandstone and carbonaceous mudstone
5.25	7.36	Pale grey, medium to fine-grained lithic sandstone with some flacer banding
7.36	7.44	Carbonaceous mudstone
7.44	8.45	Pale grey lithic sandstone with flacer banding
8.45	9.6	Grey, fine-grained lithic sanadstone and mudstone
9.6	10.62	Grey mudstone and carbonaceous mudstone
10.62	11.26	Carbonaceous mudstone +/- coal
11.26	11.5	Core Loss - Ground away
11.5	11.79	Carbonaceous mudstone +/- coal with some ash banding
11.79	12.86	Carbonaceous mudstone and dark grey mudstone
12.86	14.03	Grey to dark grey mudstone and fine to medium-grained lithic sandstone with minor carbonaceous mudstone
14.03	15.11	Grey to dark grey mudstone and some carbonaceous mudstone with minor sandstone downhole
15.11	15.36	Carbonaceous mudstone with minor sandstone uphole
15.36	15.49	Grey, fine-grained sandstone, mudstone and carbonaceous mudstone
15.49	16.09	Heavy dull coal and carbonaceous mudstone
16.09	16.66	Greasy, silica-sericite altered, pale cream mudstone/ash(?) band
16.66	17.31	Heavy dull coal with approximately 1% vitrinite and minor calcite veining
17.31	17.46	Core Loss - Ground away
17.46	18.15	Carbonaceous mudstone and dark grey mudstone
18.15	18.22	Core Loss - Ground away
18.22	18.89	Fine to medium-grained, grey samdstone with some mudstone, increasing downhole
18.89	20.5	Dark grey mudstone with minor sandstone downhole
20.5	21.38	Grey, fine-grained sandstone and mudstone (decreasing in abundance downhole) with some carbonaceous mudstone
21.38	22.27	Grey and dark grey interbedded mudstone and carbonaceous mudstone with minor sandstone
22.27	22.36	Core Loss - Ground away
22.36	22.5	Grey and dark grey interbedded mudstone and carbonaceous mudstone with minor sandstone

22.5	23.04	Interbedded fine-grained, grey sandstone and dark grey carbonaceous mudstone and mudstone
23.04	24.2	Carbonaceous mudstone with minor ash bands
24.2	24.52	Grey fine to medium-grained sandstone with carbonaceous mudstone
24.52	24.9	Carbonaceous mudstone +/- coal
24.9	25.96	Grey-green tuffaceous sequence with some sandstone downhole
25.96	26.5	Grey, fine to medium-grained lithic sandstone with minor mudstone and carbonaceous mudstone
26.5	27.34	Grey interbedded mudstone and minor carbonaceous mudstone with very minor sandstone uphole
27.34	27.45	Carbonaceous mudstone
27.45	28.24	Grey, fine-grained sandstone with some mudstone
28.24	28.28	Carbonaceous mudstone
28.28	28.8	Grey to dark grey mudstone
28.8	30.27	Grey fine to medium-grained lithic sandstone with minor mudstone uphole
30.27	31.03	Pale grey, grey and dark grey interbedded mudstone, ash and minor carbonaceous mudstone
31.03	32.6	Grey to dark grey, fine-grained lithic sandstone with minor mudsotne and carbonaceous mudstone bands
32.6	33.03	Pale grey to white, fine-grained sandstone
33.03	33.09	Pale grey, fine-grained sandstone
33.09	37.4	Grey to dark grey mudstone, carbonaceous mudstone and minor sandstone uphole
37.4	41.41	Pale grey to grey mudstone with minor carbonaceous mudstone increasing in abundance downhole
41.41	42.62	Dark grey carbonaceous mudstone and very minor fine-grained sandstone and approximately <1% vitrinite banding containing calcite cleating
42.62	44.12	Pale grey fine-grained lithic sandstone with minor mudstone bands
44.12	45.42	Pale grey to grey mudstone and some carbonaceous mudstone, increasing in abundance downhole
45.42	46.46	Carbonaceous mudstone +/- heavy dull coal
46.46	46.54	Carbonaceous mudstone and ash bands
46.54	46.87	Grading from moderately bright coal to heavy dull coal
46.87	46.92	Carbonaceous mudstone
46.92	49.42	Grey mudstone interbedded with fine to medium-grained, pale grey lithic sandstone with small coal clasts and carbonaceous mudstone banding increasing downhole
49.42	53.12	Carbonaceous mudstone with minor to very minor sandstone banding
53.12	55.64	Mudstone and carbonaceous mudstone with coal clast (containing calcite veining) at 54.59m and coal and calcite band at 54.88m
55.64	55.81	Carbonaceous mudstone
55.81	56	Mudstone and carbonaceous mudstone
56	57.25	Pale cream, with minor grey, medium to fine-grained, somewhat quartz-rich sandstone with some carbonaceous mudstone banding
57.25	58.16	Interbedded carbonaceous mudstone and cream sandstone
58.16	58.58	Cream, medium to fine-grained sandstone
58.58	59.3	Grey to dark grey mudstone and carbonaceous mudstone
59.3	59.57	Broken, heavy dull coal with approximately 2% vitrinite
59.57	59.77	Carbonaceous mudstone
59.77	60.09	Cream, fine to medium-grained sandstone
60.09	60.6	Carbonaceous mudstone +/- heavy dull coal
60.6	60.78	Interbedded mudstone and carbonaceous mudstone

60.78	61.32	Carbonaceous mudstone
61.32	62.7	Interbedded fine-grained grey lithic sandstone, carbonaceous mudstone and mudstone
62.7	63.34	Carbonaceous mudstone
63.34	63.69	Grey mudstone
63.69	63.82	Carbonaceous mudstone
63.82	64.12	Grey mudstone and minor fine-grained sandstone
64.12	64.46	Carbonaceous mudstone
64.46	65.4	Grey mudstone with minor carbonaceous mudstone and ash bands
	EOH	

Drill Hole ID: OJ013

Detailed Logs

mFrom	mTo	Description
9.6	10.62	Grey mudstone and carbonaceous mudstone
10.62	11.26	Carbonaceous mudstone +/- coal
11.26	11.5	Core Loss - Ground away
11.5	11.79	Carbonaceous mudstone +/- coal with some ash banding
11.79	12.86	Carbonaceous mudstone and dark grey mudstone
14.03	15.11	Grey to dark grey mudstone and some carbonaceous mudstone with minor sandstone downhole
15.11	15.36	Carbonaceous mudstone with minor sandstone uphole
15.36	15.49	Grey, fine-grained sandstone, mudstone and carbonaceous mudstone
15.49	16.09	Heavy dull coal and carbonaceous mudstone
16.09	16.66	Greasy, silica-sericite altered, pale cream mudstone/ash(?) band
16.66	17.31	Heavy dull coal with approximately 1% vitrinite and minor calcite veining
17.31	17.46	Core Loss - Ground away
17.46	18.15	Carbonaceous mudstone and dark grey mudstone
18.15	18.22	Core Loss - Ground away
18.22	18.89	Fine to medium-grained, grey samdstone with some mudstone, increasing downhole
23.04	24.2	Carbonaceous mudstone with minor ash bands
24.2	24.52	Grey fine to medium-grained sandstone with carbonaceous mudstone
24.52	24.9	Carbonaceous mudstone +/- coal
24.9	25.96	Grey-green tuffaceous sequence with some sandstone downhole
25.96	26.5	Grey, fine to medium-grained lithic sandstone with minor mudstone and carbonaceous mudstone
44.12	45.42	Pale grey to grey mudstone and some carbonaceous mudstone, increasing in abundance downhole
45.42	46.46	Carbonaceous mudstone +/- heavy dull coal
46.46	46.54	Carbonaceous mudstone and ash bands
46.54	46.87	Grading from moderately bright coal to heavy dull coal
46.87	46.92	Carbonaceous mudstone
46.92	49.42	Grey mudstone interbedded with fine to medium-grained, pale grey lithic sandstone with small coal clasts and carbonaceous mudstone banding increasing downhole
58.16	58.58	Cream, medium to fine-grained sandstone
58.58	59.3	Grey to dark grey mudstone and carbonaceous mudstone
59.3	59.57	Broken, heavy dull coal with approximately 2% vitrinite
59.57	59.77	Carbonaceous mudstone
59.77	60.09	Cream, fine to medium-grained sandstone
60.09	60.6	Carbonaceous mudstone +/- heavy dull coal
60.6	60.78	Interbedded mudstone and carbonaceous mudstone
60.78	61.32	Carbonaceous mudstone
61.32	62.7	Interbedded fine-grained grey lithic sandstone, carbonaceous mudstone and mudstone

OJ013 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
0	3.4	fx				Broken ground - collar related
4.9	5.2	bd	80			
6	7.2	bn	85			flacer banding
9.6	10.62	bd	80			
13.15	13.2	jt	50		UR	
16.3	16.35	jt	50		PS	
18.96	19.2	jt	20		PS	
21.38	22.5	bd	75			
25.65	25.8	jt	40		US	
26.5	27.34	bd	80			
30.27	31.03	bd	80			
32.93	33.03	jt	20		UR	
33.03	65.4	bd	75			
37.6	37.7	jt	60	CyCa	PS	
40.9	41.01	jt	30		PS	
43.6	44.3	jt	10		PR	
45.3	45.4	jt	50	Ca	US	
45.6	45.7	jt	20		US	
46.55	46.7	jt	10		US	
49.15	49.3	jt	60		UR	
50.99	51.06	jt	60		US	
53.9	54	jt	45		UR	
59.3	59.77	fx				broken
62.7	63	fx				fault zone?
63.51	63.7	fx				fault zone?

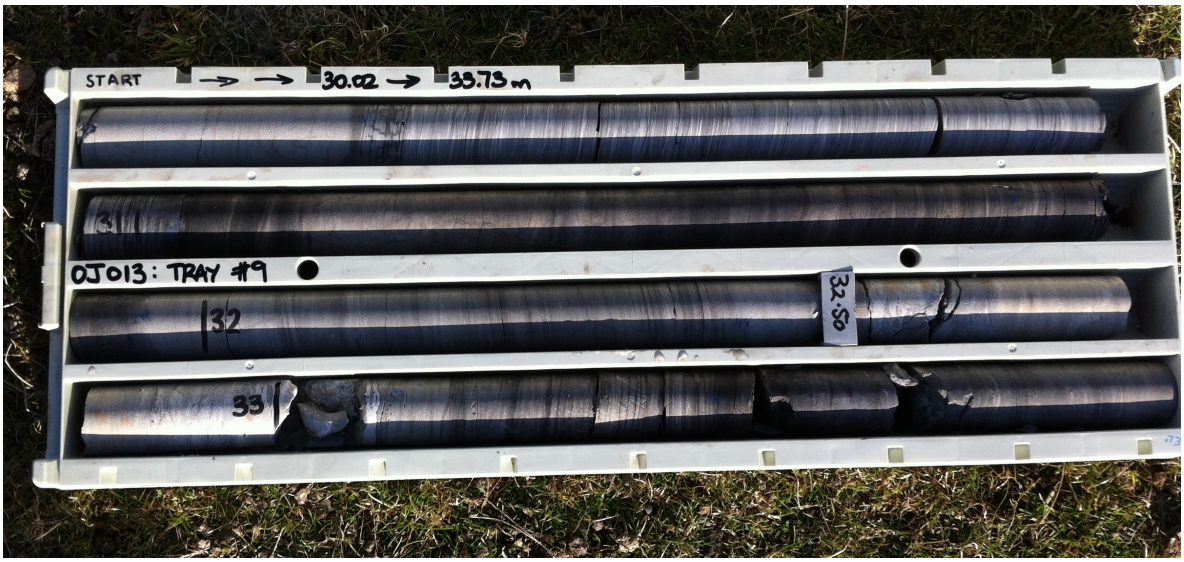
OJ013 - RQD							
m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	100	0	33	34	100	96
1	2	100	0	34	35	100	100
2	3	40	0	35	36	100	88
3	4	85	0	36	37	100	97
4	5	100	0	37	38	100	78
5	6	100	100	38	39	100	75
6	7	100	100	39	40	100	100
7	8	100	100	40	41	100	93
8	9	100	95	41	42	100	79
9	10	100	100	42	43	100	92
10	11	100	100	43	44	100	86
11	12	76	81	44	45	100	50
12	13	100	100	45	46	100	81
13	14	100	79	46	47	100	70
14	15	100	52	47	48	100	89
15	16	100	81	48	49	100	100
16	17	100	26	49	50	100	83
17	18	85	33	50	51	100	85
18	19	87	83	51	52	100	100
19	20	100	64	52	53	100	100
20	21	100	74	53	54	100	90
21	22	100	100	54	55	100	100
22	23	95	31	55	56	100	80
23	24	100	80	56	57	100	100
24	25	100	84	57	58	100	100
25	26	100	100	58	59	100	100
26	27	100	100	59	60	100	53
27	28	100	100	60	61	100	68
28	29	100	100	61	62	100	90
29	30	100	100	62	63	100	72
30	31	100	100	63	64	100	71
31	32	100	100	64	65	100	100
32	33	100	92	65	65.4	100	90


START
0.0-3.96 m
1.00
OJ013: TRAY #1
2.00
CORE LOSS NO.6m
3.00
CORE LOSS 0.15
START
3.96-7.62
4.00
4.90
5
OJ013: TRAY #2
6
7

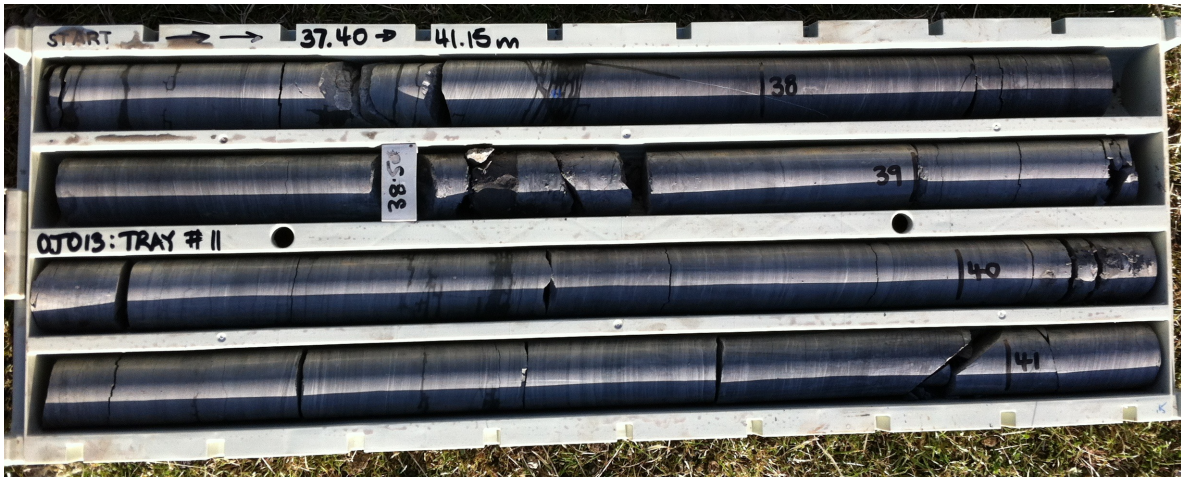

START
7.62-11.79 m
8
9
OJ013: TRAY #3
10
11
11.40
CORE LOSS 0.24
START
11.79-15.40
12
13
OJ013: TRAY #4
14.45
15

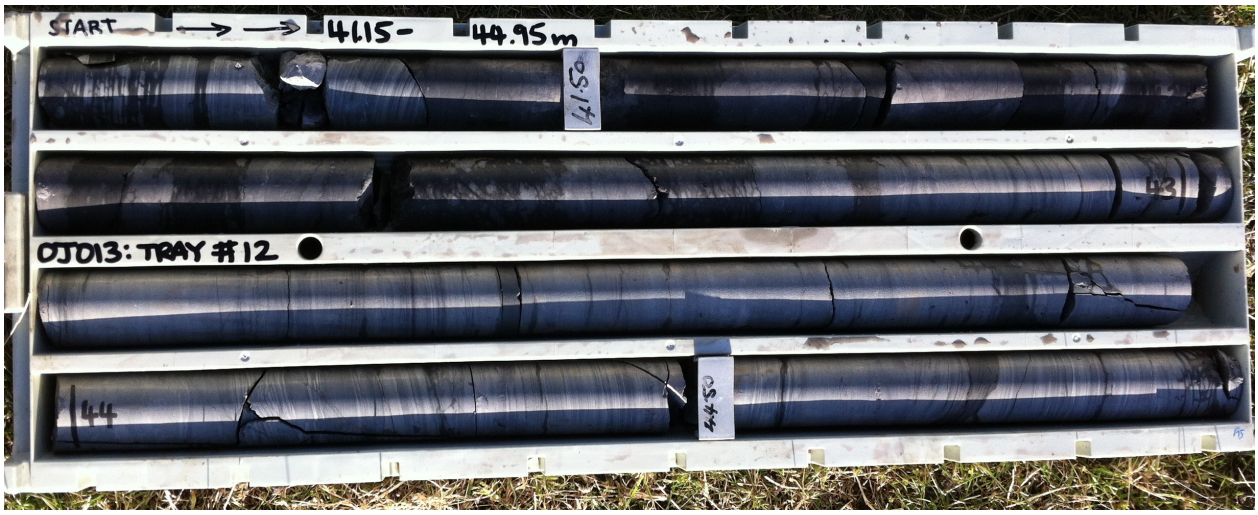

15.40-18.96m
16.30
16.50
A
QJ013: TRAY #5
17.48
CORE LOSS 0.15
17.90
18.00
CORE LOSS 0.15
START
18.96-22.73
19
20
20.50
QJ013: TRAY #6
21
22

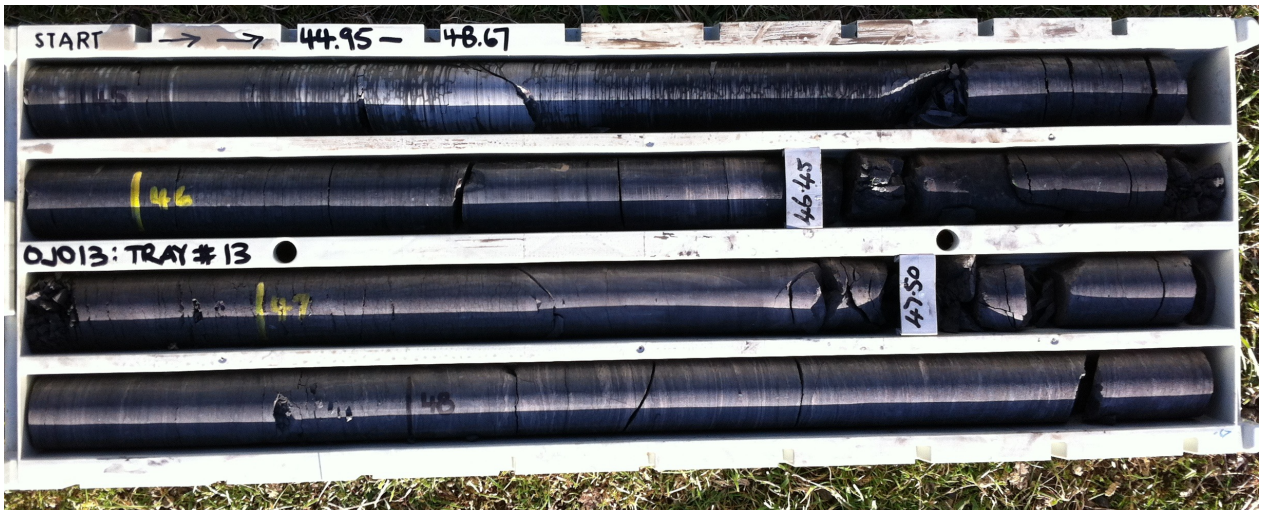

START
22.73-26.38
23
22.80
24
QJ013: TRAY #7
25.42
25
26
START
26.38-30.02
26.50
27
28
QJ013: TRAY #8
29
29.50
30

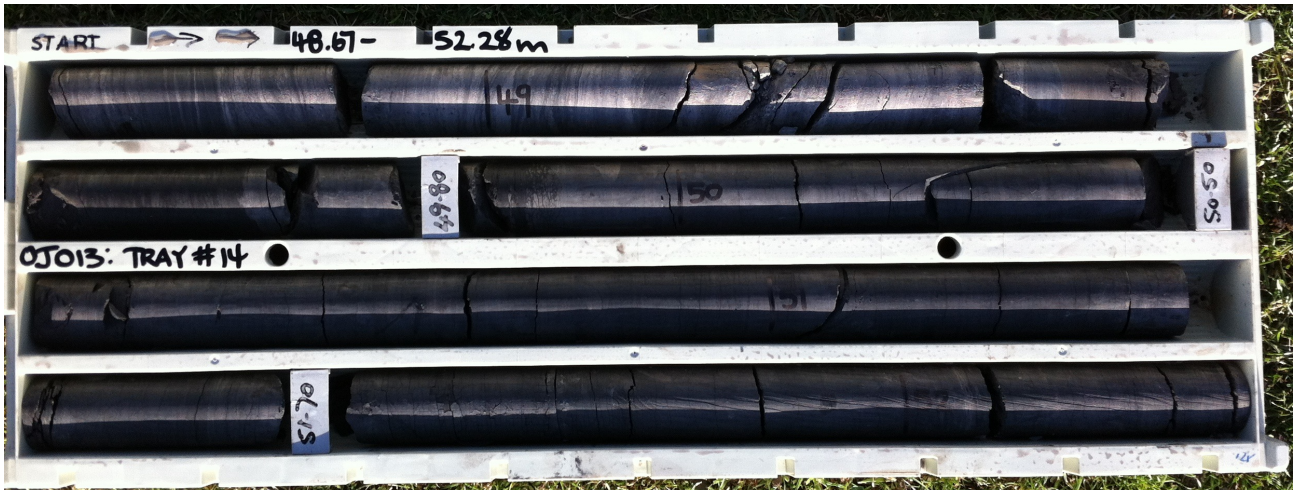

START
30.02
33.73 m
OJ013: TRAY #9
32
33
32.50

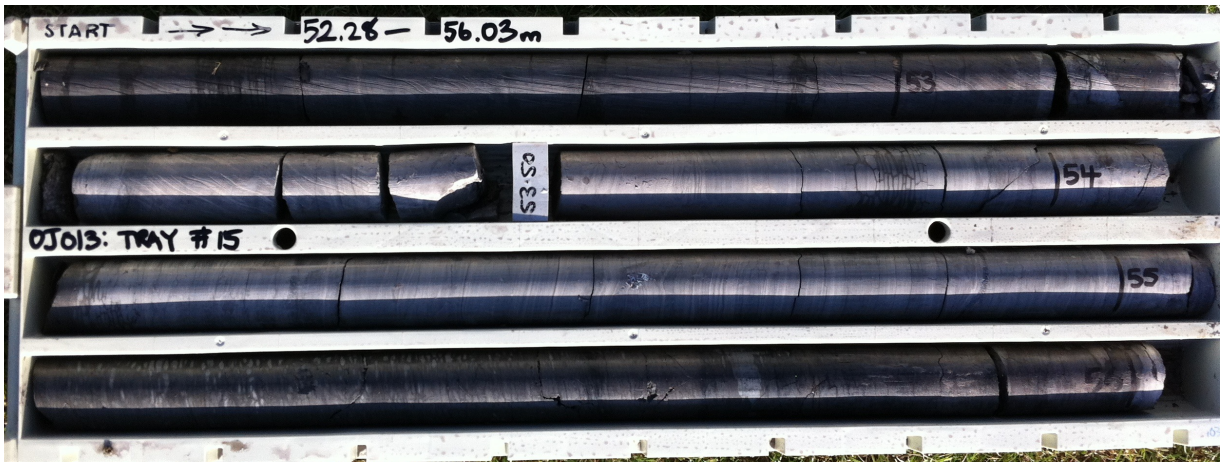

START
33.75
37.40 m
35.15
OJ013: TRAY #10
36
36.50


START
37.40
41.15 m
38
39
38.53
OJ013: TRAY #11
40
41


START
41.15 –
44.95m
OJ013: TRAY #12
44

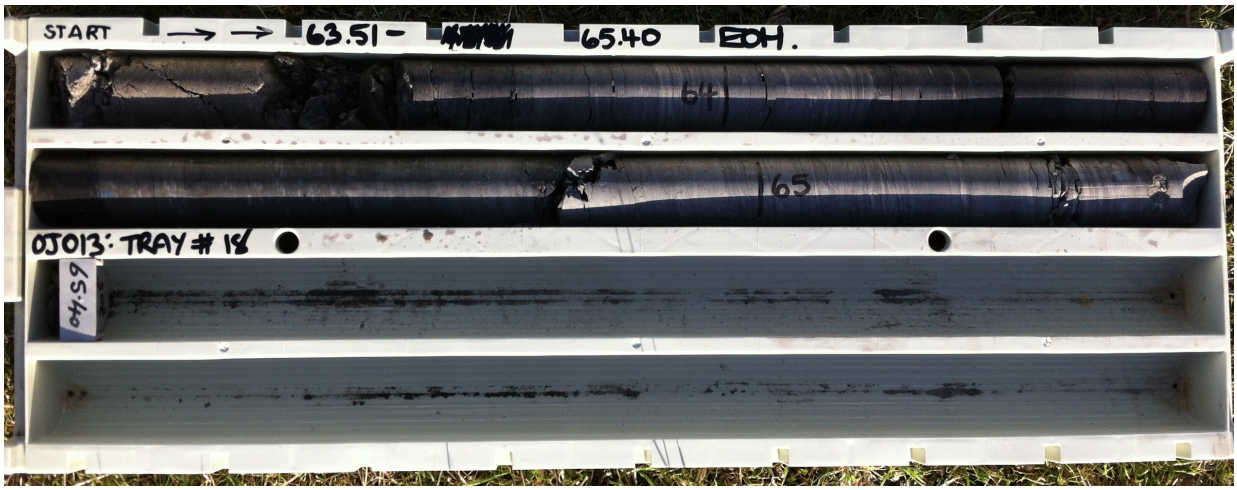

START
44.95 –
48.67
46
OJ013: TRAY #13
47
48


START
48.67 –
52.28m
49
OJ013: TRAY #14


START
52.28 – 56.03m
53.50
54
OJ013: TRAY #15
55


START
56.03 – 59.77m
56.25
57
OJ013: TRAY #16
58
59.30


START
59.77 – 63.51m
60
60.25
61
OJ013: TRAY #17
62
62.35
63


START
63.51 -
65.40
EOH.
64
65
OJ013: TRAY # 18
65.40

Appendix 13. OJ014 Logs and Core Photos

Hole ID: **OJ014**

Collar:	Northing:	5315026	mN	Datum:	GDA	
	Easting:	525337	mE	Locating Method:	Survey	
	Elevation:	371	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Road, Oatlands				

Surveys:	Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 60.6 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 5/7/13 - 10/7/13
Drilling Company: Whole Core

Site Geologist: Karen Adams
Logging Geologist: Karen Adams

Sampled:	19.88	m to	20.65	m	Heavy dull coal and carbonaceous mudstone
	31.61	m to	32.03	m	Heavy dull coal and some carbonaceous mudstone
	35.3	m to	36.12	m	Heavy dull, zonally moderately bright coal

Results:	mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
	19.88	20.65	0.77					
	31.61	32.03	0.42					
	35.3	36.12	0.82					

Notes: PVC lined to 60.6m

Drill Hole ID: OJ014

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 5th- 10th July, 2013

Collar: Easting: 55 525 337
Northing: 5 315 026
Elevation: 371
(GDA - Surveyed)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	0.6	Core Loss
0.6	1	Strongly to very strongly weathered, clay-rich, orange-brown mudstone
1	2.1	Strongly weathered, orange, clay-rich mudstone and sandstone
2.1	2.15	Strongly to very strongly weathered, orange, clay-rich mudstone
2.15	3.38	Moderately to strongly weathered, orange, clay-rich, fine to medium-grained sandstone
3.38	3.47	Dark grey, weathered carbonaceous mudstone
3.47	4.22	Weathered, orange, fine-grained lithic sandstone
4.22	5.47	Grey-brown, weakly to moderately weathered mudstone
5.47	6.24	Grey-brown, weakly to moderately weathered, fine-grained sandstone with some carbonaceous mudstone
6.24	6.44	Black to brown, weakly to moderately weathered carbonaceous mudstone with minor sandstone
6.44	7.63	Orange-grey, weakly weathered fine-grained lithic sandstone with minor carbonaceous mudstone banding
7.63	7.9	Brown-black carbonaceous mudstone with minor sandstone
7.9	8.01	Orange-grey, fine-grained sandstone and mudstone
8.01	8.8	Grey mudstone with minor fine-grained sandstone and very minor carbonaceous mudstone at 8.4m
8.8	9.4	Grey, fine-grained, lithic sandstone with very minor mudstone
9.4	10.33	Grey mudstone interbedded with minor fine-grained sandstone and minor to very minor carbonaceous mudstone
10.33	10.61	Grey-orange, weakly weathered interbedded mudstones
10.61	10.84	Grey, fine-grained sandstone
10.84	11.65	Grading from grey to dark grey, mudstone with minor carbonaceous mudstone to carbonaceous mudstone with minor ash bands
11.65	11.82	Grey, fine-grained lithic sandstone interbedded with carbonaceous mudstone
11.82	12.27	Carbonaceous mudstone with minor to very minor ash banding and heavy dull coal
12.27	13.5	Grey mudstone with some sandstone banding increasing downhole and minor carbonaceous mudstone. Millimetre thick vitrinite banding with calcite at 12.28m
13.5	13.97	Grey, fine-grained lithic sandstone with minor mudstone uphole
13.97	15.19	Grey interbedded mudstone and fine-grained sandstone with minor carbonaceous mudstone
15.19	15.35	Weathered carbonaceous mudstone
15.35	18.06	Interbedded pale grey, fine-grained lithic sandstone and mudstone and carbonaceous mudstone with cross-bedding and flame structures evident between 17 & 18m
18.06	19.88	Grey to pale grey, fine-grained lithic sandstone with minor mudstone at 19.6m

19.88	20.65	Heavy dull coal and carbonaceous mudstone with minor calcite veining at 20.3m and minor ash banding downhole
20.65	21.3	Carbonaceous mudstone
21.3	29.21	Grey to dark grey mudstone interbedded with fine-grained grey sandstone. Minor coal and calcite clasts at approximately 26m and increasing amounts of sandstone downhole
29.21	29.46	Carbonaceous mudstone
29.46	31.61	Interbedded grey mudstone & pale grey, fine-grained sandstone and some carbonaceous mudstone with clastic zone at approximately 29.6m: sub-rounded, elongated carbonaceous mudstone and mudstone clasts
31.61	32.03	Heavy dull coal and some carbonaceous mudstone
32.03	34.21	Interbedded fine to medium-grained, pale grey lithic sandstone and carbonacous mudstone
34.21	34.49	Carbonaceous mudstone and heavy, dull coal
34.49	34.83	White, altered fine-grained sandstone
34.83	35.09	Carbonaceous mudstone interbedded with pale grey, fine-grained sandstone
35.09	35.3	Carbonaceous mudstone and heavy dull coal
35.3	36.12	Heavy dull but zonally moderately bright coal with approximately 5% vitrinite and minor calcite veining
36.12	38	Carbonaceous mudstone with some fine-grained sandstone banding
38	48.45	Pale grey, fine to medium-grained lithic sandstone with carbonaceous mudstone clasts from 46.9-47.3m with increasing amounts of irregular carbonaceous mudstone bedding downhole
48.45	51.89	Interbedded grey, fine-grained lithic sandstone and carbonaceous mudstone, each one zonally dominant
51.89	52.98	Carbonaceous mudstone and heavy dull coal with some mudstone/ash banding
52.98	53.89	Interbedded carbonaceous mudstone and fine-grained grey sandstone
53.89	60.6	Grey mudstone interbedded with pale grey fine to medium-grained lithic sandstone with sandstone increasing in abundance uphole
	EOH	

Drill Hole ID: OJ014

Detailed Logs

mFrom	mTo	Description
18.06	19.88	Grey to pale grey, fine-grained lithic sandstone with minor mudstone at 19.6m
19.88	20.65	Heavy dull coal and carbonaceous mudstone with minor calcite veining at 20.3m and minor ash banding downhole
20.65	21.3	Carbonaceous mudstone
30	31.61	Interbedded grey mudstone & pale grey, fine-grained sandstone and some carbonaceous mudstone
31.61	32.03	Heavy dull coal and some carbonaceous mudstone
32.03	34.21	Interbedded fine to medium-grained, pale grey lithic sandstone and carbonacous mudstone
34.21	34.49	Carbonaceous mudstone and heavy, dull coal
34.49	34.83	White, altered fine-grained sandstone
34.83	35.09	Carbonaceous mudstone interbedded with pale grey, fine-grained sandstone
35.09	35.3	Carbonaceous mudstone and heavy dull coal
35.3	36.12	Heavy dull but zonally moderately bright coal with approximately 5% vitrinite and minor calcite veining
36.12	37	Carbonaceous mudstone with some fine-grained sandstone banding

OJ014 - Structure

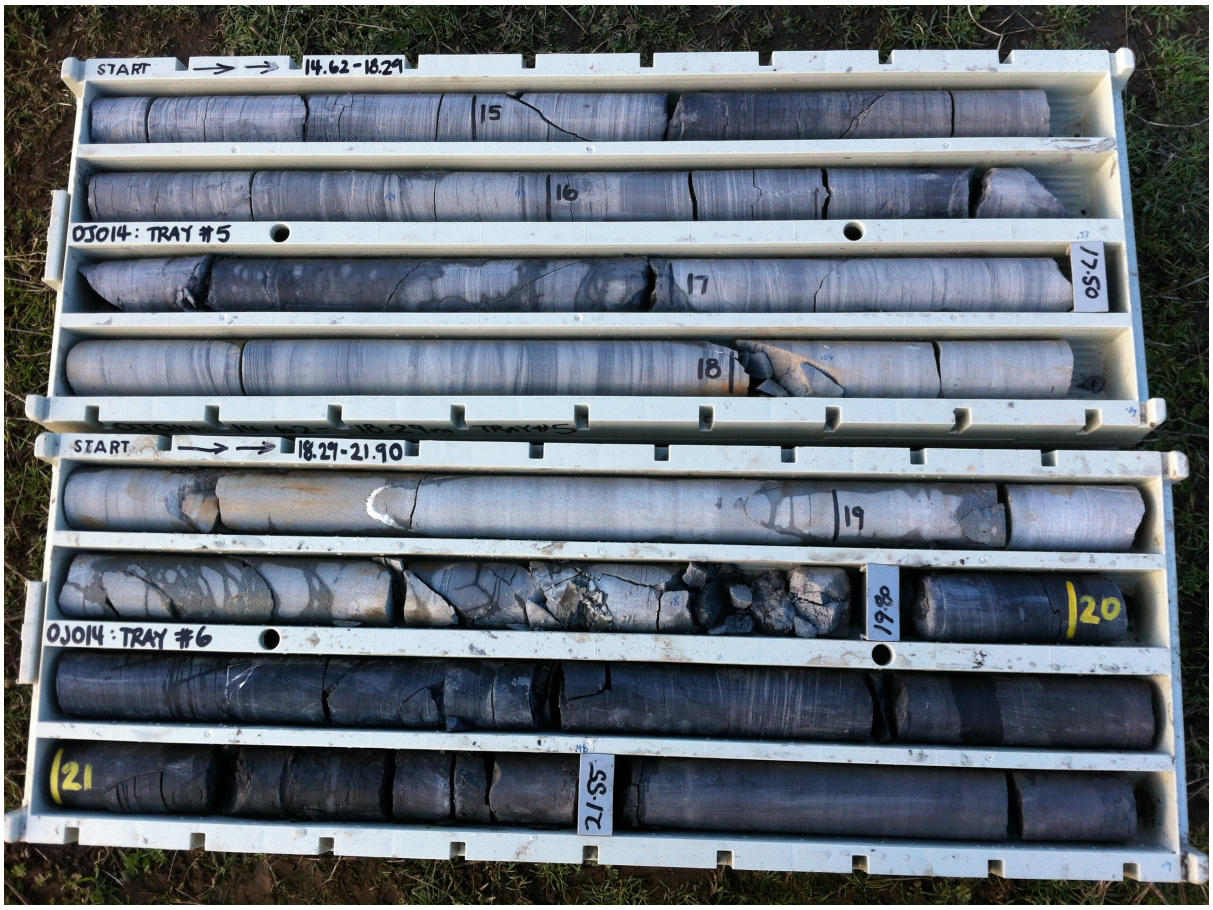
m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
0	2.15	fx				Broken ground - collar related
3.38	3.38	bd	85			
4.22	5.42	bd	85			80-90 degrees
10	10.33	bd	85			80-90 degrees
12.95	13.06	jt	40		US	
14.04	14.13	jt	50		US	
15.05	15.19	jt	35		US	30-40 degrees
17.96	18.08	jt	35		UR	30-40 degrees
18.39	19.88	jt	25		UR	joint set
21.9	31.61	bd	80			
25.2	25.5	jt	30		US	
30.9	31.95	fx				broken ground
35.3	35.9	fx				broken ground
38	45.4	bn	85			flacer banding, 80-90 degrees
48.89	51.58	bd	80			
54.2	60.6	bd	85			
55.03	55.3	jt	20		UR	

RQD - OJ014

m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	40	0	31	32	100	0
1	2	100	0	32	33	100	94
2	3	100	48	33	34	100	95
3	4	100	88	34	35	100	21
4	5	100	92	35	36	100	0
5	6	100	90	36	37	100	100
6	7	100	82	37	38	100	100
7	8	100	80	38	39	100	69
8	9	100	85	39	40	100	100
9	10	100	77	40	41	100	96
10	11	100	70	41	42	100	60
11	12	100	95	42	43	100	100
12	13	100	59	43	44	100	100
13	14	100	95	44	45	100	94
14	15	100	85	45	46	100	100
15	16	100	83	46	47	100	100
16	17	100	75	47	48	100	100
17	18	100	96	48	49	100	90
18	19	100	20	49	50	100	95
19	20	100	0	50	51	100	100
20	21	100	32	51	52	100	100
21	22	100	23	52	53	100	70
22	23	100	81	53	54	100	72
23	24	100	100	54	55	100	100
24	25	100	100	55	56	100	68
25	26	100	38	56	57	100	70
26	27	100	100	57	58	100	100
27	28	100	70	58	59	100	100
28	29	100	100	59	60	100	98
29	30	100	95	60	60.6	100	100
30	31	100	53				


START
0.0-3.52
1.00
OJ014: TRAY #1
2.00
3
3.20
START
3.52-7.22
4
4.70
5
OJ014: TRAY #2
5.50
6
7


START
7.22-10.89
7.70
8
8.50
9
OJ014: TRAY #3
10
10.40
START
10.89-14.62
11
11.50
12
OJ014: TRAY #4
13
14
14.56


START
14.62-18.29
15
16
OJ014: TRAY #5
17.50
17
18
START
18.29-21.90
19
19.80
20
OJ014: TRAY #6
21
21.55


START
21.9-25.62
22
23
23.50
OJ014: TRAY #7
24
25
START
25.62-29.46
26
26.50
27
OJ014: TRAY #8
28
29


START
29.46-32.97
29.50
30
31
OJ014 : TRAY #9
32
32.50
START
32.97-36.49
33
33.90
34
OJ014: TRAY # 10
35
35.50
36


START
36.49-40.19
37
38
38.50
OJ014 : TRAY #11
39
40
START
40.19-43.79
41.35
OJ014 : TRAY #12
42
42.50
43


START
43.79-47.58
44.50
44
45
OJ014: TRAY #13
46
47
START
47.58-51.31
47.50
48
49
OJ014: TRAY #14
50
50.50
51


START
51.31-55.03
52
53
OJ014: TRAY # 15
53.50
54
55
START
55.03-58.78
56
56.50
OJ014: TRAY #16
57
58


START
58.78-60.60
EOH
59
60
OJ014: TRAY #17

Appendix 14. OJ015 Logs and Core Photos

Hole ID: **OJ015**

Collar:	Northing:	5305590	mN	Datum:	GDA	
	Easting:	525743	mE	Locating Method:	Survey	
	Elevation:	404	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Ellesmere, Mudwalls Road				

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)		
Depth:	49.58	m	
Azimuth:	n/a	degrees	
Dip	-90	degrees	
Drilling Method:	Diamond (HQ3)		
Date Drilled:	24/6/2013 - 26/6/2013		
Drilling Company:	KMR Drilling		
Site Geologist:	Karen Adams		
Logging Geologist:	Karen Adams		

Sampled:					
19.67	m to	20.57	m	Heavy, dull coal with zonally brighter coal
20.57	m to	21.11	m	Laminated coal and carbonaceous mudstone

Results:	mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
	19.67	20.57	0.9					
	20.57	21.11	0.54					

Notes: Lost water return at 41m
PVC lined to 43.8m
Dolerite at 35.2m

Drill Hole ID: OJ015

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 24th-26th June, 2013

Collar: Easting: 55 525 743
Northing: 5 305 590
Elevation: 404
(GDA - Surveyed)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	7.7	No Core - Cutting Bit (tri-cone)
7.7	14.75	Blue-grey, medium to coarse-grained lithic sandstone with zonal flacer banding. Colouration grading to grey downhole
14.75	15.16	Carbonaceous mudstone (+/- coal) beds with sandstone interbeds containing carbonaceous mudstone and coal clasts (rip-up clasts?)
15.16	15.52	Medium to coarse-grained, grey lithic sandstone with rounded carbonaceous mudstone and coal clasts
15.52	15.8	Black carbonaceous mudstone +/- coal
15.8	16.6	Grey,upwardly fining, fine to medium-grained lithic sandstone sequence
16.6	19.37	Grey, zonally black, medium to coarse-grained lithic sandstone with frequent flacer banding
19.37	19.67	Dark grey to grey, mudstone and carbonaceous mudstone with cross-bedding present
19.67	20.57	Heavy, dull coal with zonally brighter coal
20.57	21.11	Laminated coal and carbonaceous mudstone with some graphitic alteration on fracture surfaces
21.11	21.19	Dark grey to grey mudstone and carbonaceous mudstone
21.19	21.25	Carbonaceous mudstone +/- coal
21.25	21.36	Grey mudstone with carbonaceous mudstone laminations
21.36	21.69	Interbedded grey mudstone and carbonaceous mudstone
21.69	21.85	Dull coal and carbonaceous mudstone with approximately less than 1% vitrinite
21.85	22.05	Grey mudstone and carbonaceous mudstone with some vitrinite banding
22.05	22.27	Heavy dull coal and carbonaceous mudstone
22.27	22.75	Light grey to dark grey tuff/mudstone(?). Compressed pyroclastic(?) clasts visible
22.75	23.51	Light grey-green, silica altered mudstone and minor fine-grained sandstone
23.51	24.36	Cream-grey, medium to fine-grained lithic sandstone
24.36	33.3	Pale grey to white, medium to coarse-grained lithic sandstone with gradational downhole alteration contact
33.3	34.18	Green-grey, silica-sericite altered, coarse-grained lithic sandstone
34.18	34.65	Annealed fault sone/vein with remnant altered mud
34.65	35.2	Pale green, mottled, fine-grained sandstone and some mudstone
35.2	36.54	Dark green-grey, frequently fractured dolerite with some calcite-quartz veinlets
36.54	36.73	Core Loss - Broken ground
36.73	41	Dark green, fine to medium-grained dolerite with zonally frequent fractures, calcite-filled vessicles from around 39-41m and some irregular calcite veining present
41	41.2	Core Loss - Faulting (?)
41.2	48.58	Dark green-grey, medium-grained dolerite with some possible interstitial calcite proximal to uphole faulting. Prominent joint sets

Drill Hole ID: OJ015

Detailed Logs

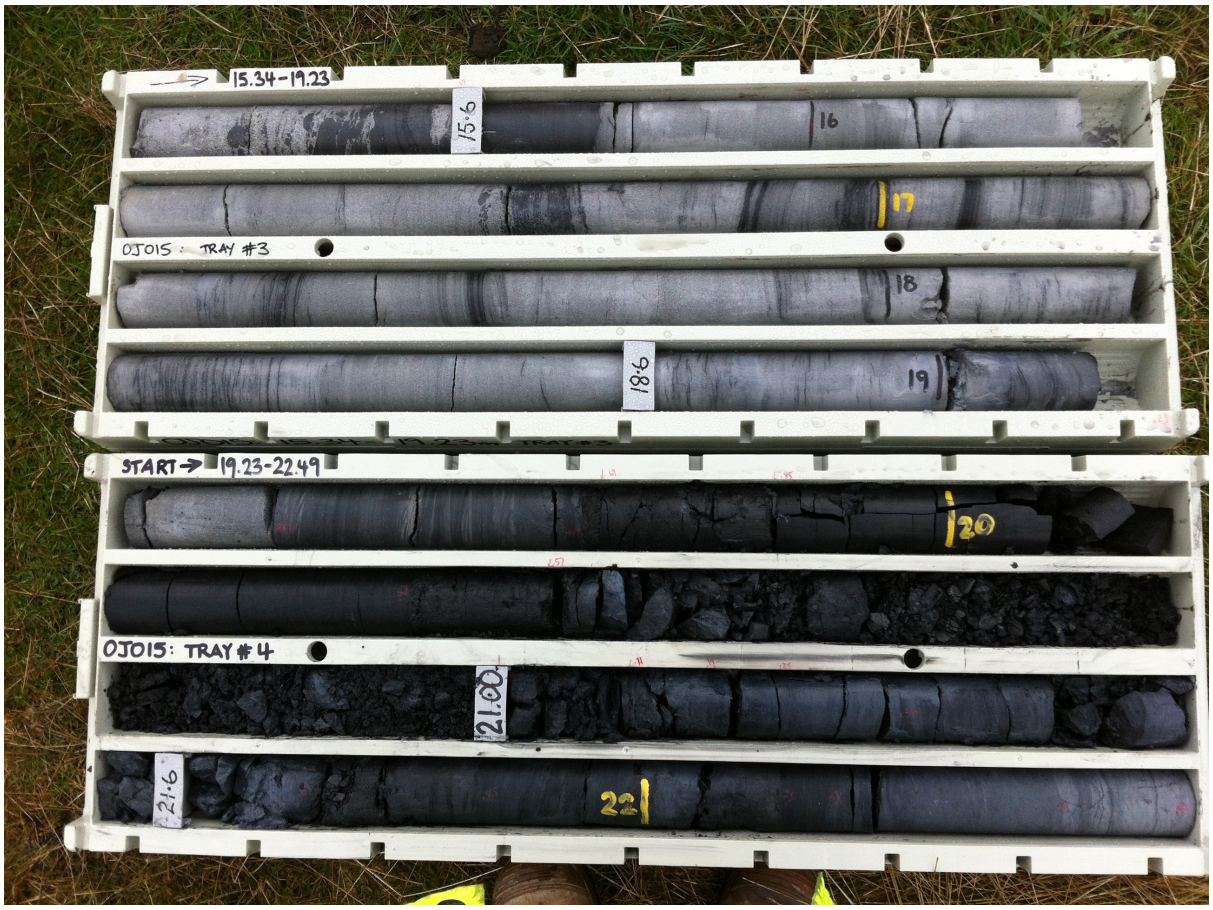
mFrom	mTo	Description
18	19.37	Grey, zonally black, medium to coarse-grained lithic sandstone with frequent flacer banding
19.37	19.67	Dark grey to grey mudstone and carbonaceous mudstone with cross-bedding present
19.67	19.69	Vitrinite
19.69	19.85	Moderately dull coal with approximately 1% vitrinite
19.85	20.43	Heavy, dull coal (+/- carbonaceous mudstone)
20.43	20.57	Moderately dull coal with approximately 1% vitrinite
20.57	21.11	Black to very dark grey, thinly (<1mm) laminated coal, carbonaceous mudstone with some graphitic bands visible of fracture surfaces
21.11	21.19	Dark grey to grey mudstone and carbonaceous mudstone
21.19	21.25	Carbonaceous mudstone +/- heavy, dull coal
21.25	21.36	Grey to dark grey mudstone with carbonaceous mudstone laminations
21.36	21.69	Interbedded grey mudstone and carbonaceous mudstone (+/- coal)
21.69	21.85	Dull coal and carbonaceous mudstone with approximately <1%
21.85	22	Carbonaceous mudstone and minor grey mudstone with approximately 1% vitrinite
22	22.05	Grey mudstone and carbonaceous mudstone
22.05	22.22	Heavy, dull coal and carbonaceous mudstone with less than 1% vitrinite
22.22	22.27	Carbonaceous mudstone
22.27	22.37	Dark grey to grey tuffaceous mudstone
22.37	22.75	Light grey tuffaceous mudstone with compressed, possibly pyroclastic clasts
22.75	23	Light grey (green), silica altered (?) mudstone and minor fine-grained sandstone

OJ015 Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
8.7	8.85	bn	90			flacer banding
10.1	10.4	bn	90			flacer banding
12.03	12.13	jt	30		US	
16.05	16.06	bd	80			
16.87	17.2	bd	80			
17.2	19.2	bn	85			flacer banding
19.37	19.67	bd	85			plus cross bedding at approximately 70
20.57	21.11	fx	90		US	fractures along bedding planes
27.3	27.6	bn	70			bedding
31.4	31.42	bn	70			
34.18	34.65	ft	80			partially healed/annealed fault
34.84	34.94	jt	0	Se	PS	
34.84	34.94	jt	70	Ca		
35.12	35.13	jt	70	Cy	PS	
35.93	37.17	fx		CyCa		fracture zone
37.17	37.72	jt	5	Ca	PR	curved joint
38.1	38.31	jt	45	Ca	UR	
38.1	38.31	jt	20	Ca	UR	
38.34	38.42	fx	85	CaCy	PS	
39.09	39.18	fx	80	Ch		
39.68	39.85	jt	5	Ca	PS	
39.99	40.24	jt	80	Ca	PS	
40.68	40.87	jt	30	Ca	PS	
40.68	40.87	jt	60		PS	
40.68	40.87	jt	45		UR	
40.87	41.4	ft	7	Ca		Fluid pathway
41.83	41.86	jt	70	Ca	PR	
41.86	41.96	jt	45	Ca	PR	
42.7	42.45	jt	45	CaCy	UR	
42.6	42.9	jt	20	Ca	UR	
43.14	43.22	ft				
43.44	44	jt	2	Ca	PR	
43.98	44.03	jt	45		UR	
44.16	44.34	jt	80		PR	
45.18	45.33	jt	20	Ca	PR	
45.49	45.6	jt	30	Ca	PR	
45.6	45.69	ft				fracture zone
45.88	48.45	jt	20	Ca	PS	
45.88	48.45	jt	50		PR	
45.88	48.45	jt	70		PR	

RQD - OJ015							
m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	0	0	25	26	100	100
1	2	0	0	26	27	100	100
2	3	0	0	27	28	100	84
3	4	0	0	28	29	100	100
4	5	0	0	29	30	100	100
5	6	0	0	30	31	100	100
6	7	0	0	31	32	100	100
7	8	30	30	32	33	100	100
8	9	100	100	33	34	100	100
9	10	100	100	34	35	100	40
10	11	100	100	35	36	100	50
11	12	100	100	36	37	81	0
12	13	100	100	37	38	100	0
13	14	100	100	38	39	100	30
14	15	100	75	39	40	100	10
15	16	100	98	40	41	100	54
16	17	100	97	41	42	80	25
17	18	100	100	42	43	100	36
18	19	100	100	43	44	100	32
19	20	100	0	44	45	100	54
20	21	100	0	45	46	100	37
21	22	100	0	46	47	100	56
22	23	100	70	47	48	100	51
23	24	100	100	48	48.58	100	94
24	25	100	100	NB: Cutting bit to 7.7m - No Core			


7.70 - 11.48 m
7.7 m
8
9
OJ015 : TRAY #1
9.6 m
10
11
11.48-15.34
12
12.6
13
OJ015 TRAY #2
14
15


15.34-19.23
15.6
16
17
OJ015 : TRAY #3
18
18.6
19
START → 19.23-22.49
20
OJ015: TRAY #4
21.00
21.6
22


START→ 22.49-26.28
23
24
OJ015: TRAY #5
24.6
25
26
START→ 26.28-30.05
27
27.7
28
OJ015: TRAY #6
29
30


START→ 30.05-33.88
30.6
31
OJ015: TRAY #7
32
33
33.6
START→ 33.88-37.83
34
35
OJ015: TRAY #8
36.6
LOSS
~0.1m
37


START →
37.83-41.62
38
39
39.6
OJ015 TRAY-9
40
LOST WATER RETURN
CORE LOSS 0.2
START →
41.62-45.36
42
42.6
43
OJ015 - TRAY 10
43.8
44
45


START →
45.36 → 48.58 EOH
46
46.9
47
OJ015 → TRAY-11
48
48.6
45.36 48.58 EOH.

Appendix 15. OJ016 Logs and Core Photos

Hole ID: **OJ016**

Collar:	Northing:	5314279	mN	Datum:	GDA	
	Easting:	525313	mE	Locating Method:	Surveyed	
	Elevation:	389	m	Accuracy:		mm
	Tenement:			EL26/2008 Lake Tiberias		
	Location:			Bowhill Road, Oatlands		

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)	
Depth:	51.48	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Diamond (HQ3)	
Date Drilled:	27th June - 1st July, 2013	
Drilling Company:	Whole Core	
Site Geologist:	Karen Adams	
Logging Geologist:	Karen Adams	

Sampled:					
4.72	m	to	5.5	m	Heavy dull coal + carbonaceous mudstone
9.08	m	to	9.35	m	Zonally bright, but dominantly heavy, dull coal
9.7	m	to	10.41	m	Zonally bright, but dominantly heavy, dull coal
18.43	m	to	18.81	m	Heavy dull coal + some ash banding and weathering
41.94	m	to	43	m	Carbonaceous mudstone +/- heavy dull coal
43	m	to	44.07	m	Carbonaceous mudstone +/- heavy dull coal

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
4.72	5.5	0.78					
9.08	9.35	0.27					
9.7	10.41	0.71					
18.43	18.81	0.38					
41.94	43	1.06					
43	44.07	1.07					

Notes: PVC lined to EOH

Dolerite from 45.4m

Drill Hole ID: OJ016

Project: Southern Midlands Coal

Licence: EL26/2008

Date Drilled: 27th June to 1st July, 2013

Collar: Easting: 55 525 313
Northing: 5 314 279
Elevation: 389
(GDA - Surveyed)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	2.2	No Core - Cutting bit (tri-cone)
2.2	3.08	Orange-brown weathered carbonaceous mudstone and mudstone
3.08	3.2	Pale grey, weakly weathered, fine-grained heavy rock
3.2	3.48	Brown-orange weathered carbonaceous mudstone and mudstone
3.48	4.44	Brown-grey to dark grey interbedded mudstone and carbonaceous mudstone
4.44	4.54	Heavy dull coal
4.54	4.72	Grey to dark grey weathered carbonaceous mudstone
4.72	4.87	Strongly weathered dull coal and carbonaceous mudstone with some mm thick ash banding
4.87	5.24	Carbonaceous mudstone and coal with mm ash bands
5.24	5.5	Heavy dull coal with minor ash bands and minor vitrinite banding
5.5	5.71	Interbedded dark grey carbonaceous mudstone and grey mudstone
5.71	6.26	Pale grey, fine-grained sandstone
6.26	6.72	Interbedded grey-cream mudstone and carbonaceous mudstone (increasing in abundance downhole)
6.72	6.97	Grey-cream fine-grained sandstone with some carbonaceous mudstone
6.97	7.28	Cream, fine-grained sandstone and carbonaceous mudstone with cross bedding present
7.28	7.81	Cream, fine-grained sandstone with minor carbonaceous mudstone flacer banding
7.81	8.23	Interbedded carbonaceous mudstone and mudstone with minor fine-grained sandstone and cream-brown clay seam on downhole contact
8.23	8.7	Grey to dark grey mudstone with carbonaceous mudstone increasing downhole
8.7	8.91	Dark grey carbonaceous mudstone
8.91	9.08	Grey, fine to medium-grained lithic sandstone
9.08	9.35	Zonally bright, but dominantly heavy, dull coal
9.35	9.6	Grey mudstone and carbonaceous mudstone with minor coal downhole
9.6	9.75	Grey mudstone and caronaceous mudstone
9.75	10.41	Zonally bright but dominantly heavy, dull coal
10.41	10.62	Grey mudstone and carbonaceous mudstone
10.62	11.96	Grey mudstone and carbonaceous mudstone with minor fine-grained sandstone down hole
11.96	12.72	Pale grey, fine to medium-grained sandstone with flacer banding
12.72	13.74	Grey mudstone and carbonaceous mudstone
13.74	14.86	Grey, fine-grained sandstone with some carbonaceous mudstone banding, flame structures and cross-bedding present
14.86	15.5	Interbedded fine-grained sandstone, mudstone and carbonaceous mudstone with cross-bedding and flame structures present
15.5	16.14	Grey, medium to fine-grained sandstone with carbonaceous mudstone down hole

16.14	18.23	White to pale cream, medium to fine-grained sandstone with flacer banding up and down hole
18.23	18.43	Pale grey to white sandstone with flacer banding
18.43	18.54	Weathered heavy, dull coal
18.54	18.69	Heavy, dull coal with approximately 1% vitrinite and very minor calcite cleating
18.69	18.73	Pale grey ash band
18.73	18.81	Heavy dull coal
18.81	19.64	Grey mudstone with minor interbedded fine-grained sandstone
19.64	22.55	Interbedded grey mudstone, pale grey fine-grained sandstone and minor carbonaceous mudstone (carbonaceous mudstone dominant zone from 20.43-20.66m)
22.55	23.59	Grey, fine to medium-grained lithic sandstone with low-angle calcite veining
23.59	23.86	Grey mudstone with flame structures downhole
23.86	24.6	Strongly banded/bedded grey mudstone and white ash(?) bands with increased abundance of carbonaceous mudstone downhole
24.6	26.94	Interbedded pale grey fine-grained sandstone with some carbonaceous mudstone and minor mudstone
26.94	27.13	Carbonaceous mudstone with very minor grey mudstone
27.13	29.96	Grey mudstone, pale grey fine-grained sandstone and some white ash(?) banding
29.96	30.79	Carbonaceous mudstone with minor ash banding at approximately 30.5m
30.79	32.87	Grey mudstone and fine-grained sandstone and minor carbonaceous mudstone increasing downhole
32.87	32.98	Carbonaceous mudstone
32.98	36.07	Grading from grey mudstone and minor fine-grained sandstone to interbedded fine-grained sandstone, carbonaceous mudstone and mudstone with cross-bedding present
36.07	36.92	Grey, medium-grained lithic sandstone
36.92	37.4	Grey mudstone and minor fine-grained sandstone and carbonaceous mudstone
37.4	37.88	Carbonaceous mudstone
37.88	41.44	Sequence of interbedded mudstone and sandstone, carbonaceous mudstone and sandstone beds with strong carbonaceous mudstone about 40.7-40.95m
41.44	41.94	Carbonaceous mudstone
41.94	44.87	Carbonaceous mudstone plus or minus heavy dull coal(?)
44.87	45.34	Interbedded pale grey mudstone and fine-grained sandstone
45.34	45.45	Red-brown to grey, highly altered mudstone, possibly sericite and jasperoidal(?) alteration
45.45	51.48	Grading from green-grey fine-grained, to grey-green dolerite with minor to very minor calcite vein. Fine-grained chilled margin possibly chlorite altered
	EOH	

Drill Hole ID: OJ016

Detailed Logs

mFrom	mTo	Description
3.2	3.48	Brown-orange weathered carbonaceous mudstone and mudstone
3.48	4.44	Brown-grey and dark grey interbedded mudstone with carbonaceous mudstone
4.44	4.54	Heavy, dull coal with minor carbonaceous mudstone
4.54	4.72	Grey to dark grey weathered carbonaceous mudstone
4.72	4.87	Strongly weathered dull coal (with some carbonaceous mudstone and minor mm ash bands)
4.87	5.24	Carbonaceous mudstone and coal with mm ash bands
5.24	5.5	Heavy, dull coal with minor ash bands and minor vitrinite banding, approximately 1%
5.5	5.71	Interbedded dark grey carbonaceous mudstone and grey mudstone
5.71	6	Pale grey, fine-grained sandstone
8.7	8.91	Dark grey carbonaceous mudstone
8.91	9.08	Grey, fine to medium-grained sadstone
9.08	9.27	Heavy, dull coal
9.27	9.35	Moderately bright coal with frequent calcite cleating
9.35	9.55	Grey mudstone
9.55	9.6	Carbonaceous mudstone, coal and some vitrinite
9.6	9.7	Grey mudstone and carbonaceous mudstone
9.7	9.75	Carbonaceous mudstone
9.75	9.99	Zonally bright but dominantly heavy dull coal with approximately 5% vitrinite (downhole) and some calcite veining
9.99	10.22	Heavy, dull coal with <1% vitrinite and minor calcite veining
10.22	10.41	Moderately to strongly bright, brittle coal with approximately 50% vitrinite and some carbonaceous mudstone bands
10.41	10.62	Grey mudstone and carbonaceous mudstone
10.62	10.69	Carbonaceous mudstone
10.69	11.96	Grey mudstone and carbonaceous mudstone with minor fine-grained sandstone downhole
16.14	18.23	White to pale cream, medium to fine-grained sandstone with flacer banding up and downhole
18.23	18.43	Pale grey white sandstone with flacer banding
18.43	18.45	Heavy, dull coal
18.45	18.54	Weathered heavy, dull coal
18.54	18.69	Heavy dull coal with zonal brown coal, approximately 1% vitrinite and minor calcite cleating
18.69	18.73	Pale grey ash band
18.73	18.81	Heavy, dull coal
18.81	19.64	Grey mudstone with minor interbedded fine-grained sandstone

OJ016 - Structure

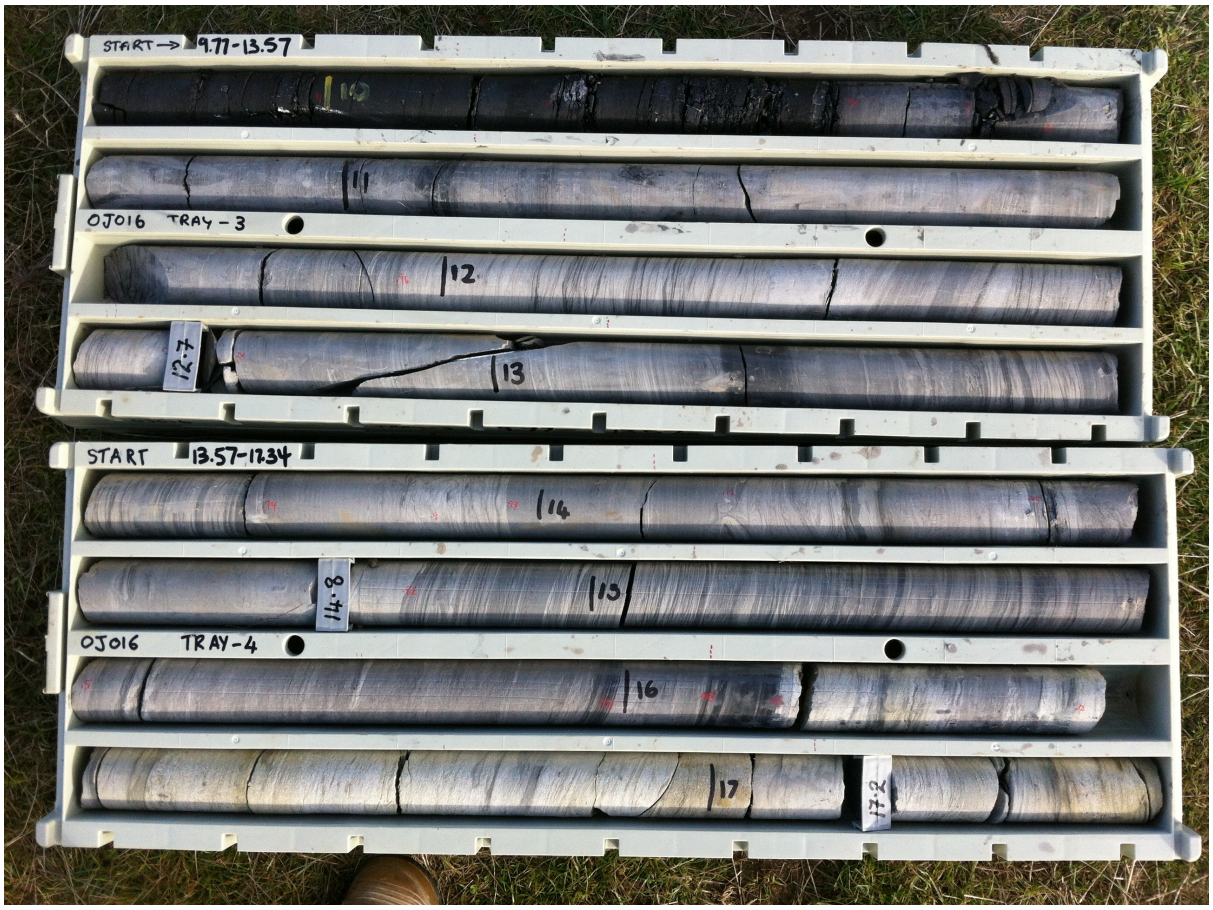
m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
2.2	3.7	fx				weathering profile
3.15	4.47	bd	80		PS	
3.84	3.9	jt	85		PS	
4.06	4.26	jt	85	ca	PS	
4.5	5.18	jt	85		PS	
5.65	6.68	jt	80		UR	
5.7	5.83	jt	45		UR	
5.84	5.9	jt	70		UR	
6.22	6.52	bd	80		PS	
6.54	6.7	jt	45		UR	
7	7.3	bd	80			
7.6	7.87	fx			UR	
8.2	8.2	jt	45		PS	
8.6	8.9	jt	5		UR	
9.7	10.73	fx	80		UR	
11.95	12.3	bd	80			
12.4	12.56	bd	75			
12.7	13.1	jt	20	ca	US	
16	16.95	jt	75		US	
18.45	18.84	fx	90		UR	
19.5	19.7	jt	45		UR	
20.58	20.6	fx	90			
22.9	23.8	jt	20	ca	UR	
26.4	26.6	bd	70			
32.9	33.1	fx				
36.4	37	fx	5		UR	horsetail
37.9	38.4	jt	15		US	
42.15	42.47	fx				broken
43	45	fx	70			fractures along bedding planes
43	45	jt	5			
45.66	46.72	jt	50		PR	

RQD - OJ016

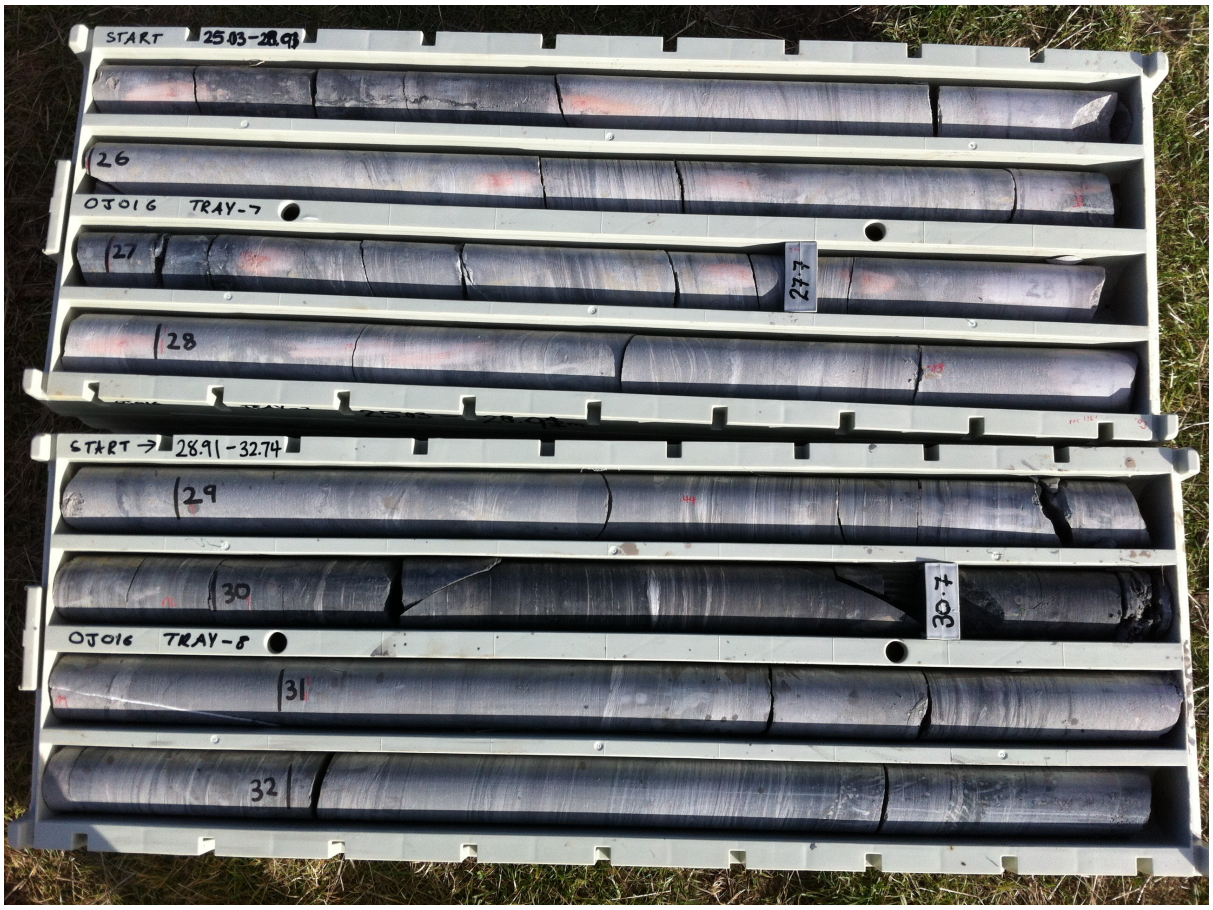
Metres From	Metres To	Recovery	RQD
0	1	0	0
1	2	0	0
2	3	80	0
3	4	100	38
4	5	100	15
5	6	100	18
6	7	100	81
7	8	100	61
8	9	100	36
9	10	100	18
10	11	100	23
11	12	100	75
12	13	100	67
13	14	100	89
14	15	100	100
15	16	100	100
16	17	100	90
17	18	100	93
18	19	100	58
19	20	100	79
20	21	100	78
21	22	100	99
22	23	100	100
23	24	100	64
24	25	100	68
25	26	100	100
26	27	100	95
27	28	100	89
28	29	100	100
29	30	100	100
30	31	100	75
31	32	100	100
32	33	100	84
33	34	100	86
34	35	100	77
35	36	100	100
36	37	100	30
37	38	100	80
38	39	100	60
39	40	100	82
40	41	100	100
41	42	100	100
42	43	100	71
43	44	100	80
44	45	100	0
45	46	100	55
46	47	100	47
47	48	100	83
48	49	100	100
49	50	100	100
50	51	100	100
51	51.48	100	80

Cutting bit to 2.2m - no core


START → 2.2-6.0
2.2m
3.00
3.7
4
OJ016 TRAY-1
5
6
START → 6.00-9.77
6.7
7
OJ016 – TRAY-2
18
19
9.7


START → 9.77-13.57
11
OJ016 TRAY-3
12
12.7
13
START 13.57-17.34
14
8.41
15
OJ016 TRAY-4
16
17
17.2


START→ 17.34-21.14
18
19
OJ016 TRAY-5
20
20.2
21
START→ 21.14-25.03
22
22.4
23
OJ016 TRAY-6
24
24.7
25


START 25.03-28.91
26
OJ016 TRAY-7
27
27.7
28
START→ 28.91-32.74
29
30
30.7
OJ016 TRAY-8
31
32


START→ 32.74 – 36.48
33.7
33
34
OJ016 - TRAY #9
35
36
START→ 36.48-40.33
36.7
37
38
OJ016 – TRAY #10
39
39.7
40


START→ 40.33-44.07
41
42
OJ016 - TRAY #11
42.7
43
44
START→ 44.07-47.91
45
45.4
46
OJ018 – TRAY #12
47


START →
47.91-51.48 EOH
48
48.5
49
OJ016 -TRAY-13
50
51
51.6
47.91 — 51.48m EOH

Appendix 16. OJ021 Lithology Log

Hole ID: **OJ021**

Collar:	Northing:	5300300	mN	Datum:	GDA	
	Easting:	525683	mE	Locating Method:	Survey	
	Elevation:	440	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Ellesmere, Mudwalls Road				

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 60 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Open Hole
Date Drilled: 1/7/13 - 2/7/13
Drilling Company: KMR Drilling

Site Geologist: Karen Adams (Claire Thomas)
Logging Geologist: Karen Adams

Sampled:

17	m	to	18	m	Carbonaceous mudstone +/- coal, sandstone + mudstone
18	m	to	19	m	Carbonaceous mudstone with minor mudstone
46	m	to	47	m	Carbonaceous mudstone with sandstone and mudstone
51	m	to	52	m	Carbonaceous mudstone with mudstone
52	m	to	53	m	Sandstone and Carbonaceous mudstone
59	m	to	60	m	Carbonaceous mudstone and mudstone

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
17	18	1					
18	19	1					
46	47	1					
51	52	1					
52	53	1					
59	60	1					

Notes:
Water at 5m
PVC lined to 60m
Predominantly small samples.

Drill Hole ID: OJ021

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 1st - 2nd of July, 2013

Collar: Easting: 55 525 683
Northing: 5 300 300
Elevation: 440
(GDA - Survey)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	1	Grey-brown, clay-rich mudstone and sandstone
1	2	Orange-cream, clay-rich sandstone and mudstone
2	3	Orange-brown, medium to coarse-grained, weathered lithic sandstone
3	4	Orange-grey, medium to fine-grained, weakly weathered lithic sandstone
4	5	Grey, coarse to medium-grained lithic sandstone with minor black carbonaceous mudstone
5	6	Grey, with minor orange, medium-grained lithic sandstone
6	7	Grey-orange, medium-grained lithic sandstone with very minor grey mudstone
7	8	Grey, medium to coarse-grained lithic sandstone with 20-30% dark grey carbonaceous mudstone
8	9	Grey, medium to coarse-grained lithic sandstone
9	10	Grey, medium to coarse-grained lithic sandstone
10	11	Grey, medium to coarse-grained lithic sandstone with 10-15% black carbonaceous mudstone
11	12	Grey, medium-grained lithic sandstone with very minor carbonaceous mudstone
12	13	Grey, medium to coarse-grained lithic sandstone
13	14	Grey, coarse to fine-grained lithic sandstone
14	15	Grey, medium-grained lithic sandstone
15	16	Grey, medium-grained lithic sandstone with very minor carbonaceous mudstone
16	17	Grey, medium-grained lithic sandstone
17	18	Dark grey to black carbonaceous mudstone +/- coal(?) with clay-rich pale grey mudstone and very minor medium-grained grey lithic sandstone
18	19	Black carbonaceous mudstone with very minor grey mudstone
19	20	Pale grey, fine-grained lithic sandstone with 20-30% black carbonaceous mudstone
20	21	Pale grey, medium to fine-grained lithic sandstone with minor to very minor black carbonaceous mudstone
21	22	Grey, fine to medium-grained lithic sandstone
22	23	Pale grey, medium-grained lithic sandstone. EXTREMELY SMALL SAMPLE
23	24	Pale grey, medium to coarse-grained lithic sandstone
24	25	Grey mudstone with minor to very minor, medium-grained lithic sandstone
25	26	Grey mudstone and fine-grained sandstone
26	27	Grey, medium-grained lithic sandstone with some mudstone
27	28	Grey, medium to coarse-grained lithic sandstone
28	29	Pale grey, medium to coarse-grained lithic sandstone
29	30	Grey, medium-grained lithic sandstone with very minor mudstone and carbonaceous mudstone
30	31	Grey medium to fine-grained lithic sandstone with minor carbonaceous mudstone

31	32	Grey, medium to coarse-grained lithic sandstone with 5-10% carbonaceous mudstone and some minor mudstone
32	33	Grey, medium-grained lithic sandstone with minor (~5%) carbonaceous mudstone
33	34	Grey, medium-grained lithic sandstone and darker grey mudstone
34	35	Pale grey mudstone and some pale grey, medium-grained lithic sandstone
35	36	Grey mudstone and very minor pale grey, medium-grained lithic sandstone
36	37	Grey mudstone
37	38	Grey mudstone with 5-10% carbonaceous mudstone and very minor lithic sandsotne. Carbonaceous mudstone contains minor, very fine-grained disseminated sulphide.
38	39	Grey to dark grey mudstone
39	40	Grey mudstone and fine-grained sandstone
40	41	Grey to dark grey, fine-grained sandstone with minor to very minor mudstone and carbonaceous mudstone
41	42	Grey to dark grey, fine to medium-grained lithic sandstone with approximately 5% carbonaceous mudstone
42	43	Pale grey, medium-grained lithic sandstone, grey mudstone and 15-20% carbonaceous mudstone
43	44	Grey to pale grey, medium-grained lithic sandstone with minor to very minor grey mudstone and dark grey carbonaceous mudstone (<2%)
44	45	Grey medium to fine-grained lithic sandstone, grey mudstone and 5-10% carbonaceous mudstone
45	46	Grey medium to coarse-grained lithic sandstone, 15-25% black carbonaceous mudstone and approximately 5% coarse pyrite
46	47	Black carbonaceous mudstone, pale grey medium-grained lithic sandstone and dark grey mudstone
47	48	Pale grey to grey mudstone
48	49	Grey to dark grey mudstone
49	50	Grey, fine-grained lithic sandstone with 5-10% black carbonaceous mudstone
50	51	Grey mudstone
51	52	Black carbonaceous mudstone with minor grey mudstone
52	53	Grey fine-grained sandstone with 15-20% black carbonaceous mudstone
53	54	Grey, moderately clay-rich, fine-grained sandstone and mudstone
54	55	Pale grey mudstone and approximately 25% carbonaceous mudstone
55	56	Pale grey, soapy mudstone with 20% carbonaceous mudstone
56	57	Pale grey, soapy mudstone and grey fine-grained sandstone with very minor carbonaceous mudstone
57	58	Grey mudstone with minor black carbonaceous mudstone
58	59	Grey mudstone with 5-10% carbonaceous mudstone
59	60	Dark grey carbonaceous mudstone and grey mudstone
	EOH	

Appendix 17. OJ022 Lithology Log

Hole ID: **OJ022**

Collar:	Northing:	5300500	mN	Datum:	GDA	
	Easting:	525688	mE	Locating Method:	Survey	
	Elevation:	439	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Ellesmere, Mudwalls Road				

Surveys:

Depth	Dip	Azimuth

Company: South East Asia Resources (Tas.)

Depth: 44 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Open Hole
Date Drilled: 3/07/13
Drilling Company: KMR Drilling

Site Geologist: Karen Adams (Claire Thomas)
Logging Geologist: Karen Adams

Sampled:

8	m	to	9	m	Lithic sandstone with minor carbonaceous mudstone
9	m	to	10	m	Mudstone with minor sandstone & carbonaceous mudstone
27	m	to	28	m	Lithic sandstone & carbonaceous mudstone
28	m	to	29	m	Mudstone & carbonaceous mudstone
29	m	to	30	m	Mudstone & some carbonaceous mudstone
30	m	to	31	m	Mudstone & minor carbonaceous mudstone
31	m	to	32	m	Mudstone & black carbonaceous mudstone
32	m	to	33	m	Carbonaceous mudstone & some mudstone
33	m	to	34	m	Mudstone, some carbonacous mudstone & sandstone
38	m	to	39	m	Mudstone & some carbonaceous mudstone
39	m	to	40	m	Mudstone & carbonaceous mudstone
40	m	to	41	m	Mudstone with some carbonaceous mudstone

Results:

mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
8	9	1					
9	10	1					
27	28	1					
28	29	1					
29	30	1					
30	31	1					
31	32	1					
32	33	1					
33	34	1					
38	39	1					
39	40	1					
40	41	1					

Notes:
Water at 7m. PVC Lined to 44m
All samples of poor size, some being extremely small
Hole ended early due to collar degradation

Drill Hole ID: OJ022

Project: Southern Midlands Coal
Licence: EL 26/2008
Date Drilled: 3rd July, 2013

Collar: Easting: 55 525 688
Northing: 5 300 500
Elevation: 439
(GDA - Survey)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	1	Dark brown, clay-rich, strongly weathered mudstone
1	2	Brown-orange, clay-rich, strongly weathered sandstone and mudstone
2	3	Orange, clay-rich, strongly weathered sandstone and minor mudstone
3	4	Pale grey, medium-grained lithic sandstone. EXTREMELY SMALL SAMPLE
4	5	Pale grey, medium-grained lithic sandstone. VERY SMALL SAMPLE
5	6	Clay-rich, pale grey sand. EXTREMELY SMALL SAMPLE
6	7	Grey-orange, moderately clay-rich sandstone and mudstone
7	8	Grey, medium-grained lithic sandstone with very minor carbonaceous mudstone
8	9	Grey, medium to fine-grained lithic sandstone with minor carbonaceous mudstone
9	10	Grey mudstone with minor sandstone and carbonaceous mudstone
10	11	Grey mudstone and some carbonaceous mudstone
11	12	Grey, fine to medium-grained lithic sandstone with minor carbonaceous mudstone
12	13	Grey, fine-grained sandstone, mudstone and carbonaceous mudstone
13	14	Grey to dark grey, mudstone and carbonaceous mudstone
14	18	Grey Mudstone
18	19	Grey to dark grey mudstone and carbonaceous mudstone
19	20	Grey fine-grained lithic sandstone
20	27	Grey, coarse to medium-grained lithic sandstone with some mudstone and minor carbonaceous mudstone
27	28	Grey medium-grained lithic sandstone and black carbonaceous mudstone
28	29	Dark grey mudstone and black carbonaceous mudstone
29	30	Grey mudstone and some carbonaceous mudstone
30	31	Grey mudstone and minor carbonaceous mudstone
31	32	Grey mudstone and black carbonaceous mudstone
32	33	Black carbonaceous mudstone and some pale grey mudstone
33	34	Grey mudstone and some carbonaceous mudstone and fine-grained sandstone
34	35	Grey mudstone and black carbonaceous mudstone
35	36	Grey mudstone and fine-grained sandstone
36	37	Grey mudstone and minor carbonaceous mudstone
37	38	Grey mudstone
38	39	Grey mudstone and some carbonaceous mudstone
39	40	Grey mudstone and black carbonaceous mudstone
40	41	Very dark grey to black mudstone with some carbonaceous mudstone
41	42	Very dark grey to black mudstone and carbonaceous mudstone
42	43	Dark grey to black mudstone with some carbonaceous mudstone and some calcite present
43	44	Grey mudstone with minor carbonaceous mudstone
	EOH	

Appendix 18. OJ017 Logs and Core Photos

Hole ID: **OJ017**

Collar:	Northing:	5313550	mN	Datum:	GDA	
	Easting:	525520	mE	Locating Method:	Surveyed	
	Elevation:	389	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Rd, Oatlands				

Surveys:	Depth	Dip	Azimuth

Company: South East Asia Resources (Tasmania)

Depth: 60.33 m
Azimuth: n/a degrees
Dip -90 degrees

Drilling Method: Diamond (HQ3)
Date Drilled: 2/7/13 - 3/7/13
Drilling Company: KMR Drilling

Site Geologist: Karen Adams
Logging Geologist: Karen Adams

Sampled:					
17.59	m to	18.17	m	Heavy dull coal and carbonaceous mudstone
18.5	m to	18.78	m	Heavy dull coal with approximately 1% vitrinite
18.89	m to	19.63	m	Moderately bright brittle coal with approximately 40% vitrinite
19.63	m to	19.95	m	Heavy dull coal and carbonaceous mudstone

Results:	mFrom	mTo	Interval	Relative Density	Ash%	Total Sulphur	Calories Kcal/Kg	Moisture
	17.59	18.17	0.58					
	18.5	18.78	0.28					
	18.89	19.63	0.74					
	19.63	19.95	0.32					

Notes: PVC lined to 60.33m

Drill Hole ID: OJ017

Project: Southern Midlands Coal
Licence: 26/2008
Date Drilled: 2nd - 3rd July, 2013

Collar: Easting: 55 525 520
Northing: 5 313 550
Elevation: 389
(GDA - Survey)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	2.8	No Core - Cutting bit
2.8	5.95	Orange, soft clay-rich, strongly weathered medium to coarse-grained lithic sandstone
5.95	9.02	Orange, zonally black, soft clay-rich medium to coarse-grained lithic sandstone with some carbonaceous mudstone
9.02	10.67	Orange, soft clay-rich, crumbly lithic sandstone
10.67	12.1	Green-grey, silica-sericite-chlorite altered medium to fine-grained lithic sandstone
12.1	17	Grey medium to fine-grained lithic sandstone
17	17.59	Pale grey medium to coarse-grained lithic sandstone with carbonaceous mudstone and coal clasts
17.59	18.17	Heavy dull coal and carbonaceous mudstone
18.17	18.22	Medium-grained sandstone and coal
18.22	18.5	Cream, clay-rich, highly degraded mudstone
18.5	18.78	Heavy dull coal with approximately 1% vitrinite
18.78	18.89	Brown-cream mudstone-ash layer
18.89	19.63	Moderately bright brittle coal with approximately 40% vitrinite
19.63	19.95	Heavy dull coal and carbonaceous mudstone
19.95	21	Cream-grey, broken mudstone
21	27.22	Grey-cream, mudstone and fine-grained lithic sandstone increasing downhole with cross-bedding present
27.22	27.4	Grading from green to orange-brown altered fine-grained sandstone with cross-bedding
27.4	39.02	Green-grey, medium to coarse-grained lithic sandstone with ferric, orange alteration patches around 28, 28.5, 34 and 36.3m. Large (up to 5cm), ferric altered, mudstone clasts present around 34 and 36m, and carbonaceous mudstone clasts present from 34.27-34.5m
39.02	39.2	Brown, clay-rich mudstone
39.2	39.8	Core Loss
39.8	40.2	Brown, clay-rich mudstone
40.2	40.4	Broken, green-grey (with minor orange), sericite-silica altered, coarse to medium-grained lithic sandstone
40.4	50	Green-grey, coarse to medium-grained lithic sandstone with zonal white alteration/leached zone from 40.68-40.76m and mudstone clasts from 45.6-48m
50	51	Broken, veined fault zone in green-grey, silica-seriite altered coarse-grained lithic sandstone with some mudstone clasts
51	56.38	Green-grey, coarse-grained lithic sandtone with some mudstone clasts
56.38	60.33	Pale grey, medium to coarse-grained llithic sandstone with large (>5cm) mudstone clasts from 57.5-57.8m
	EOH	

Drill Hole ID: OJ017

Detailed Logs

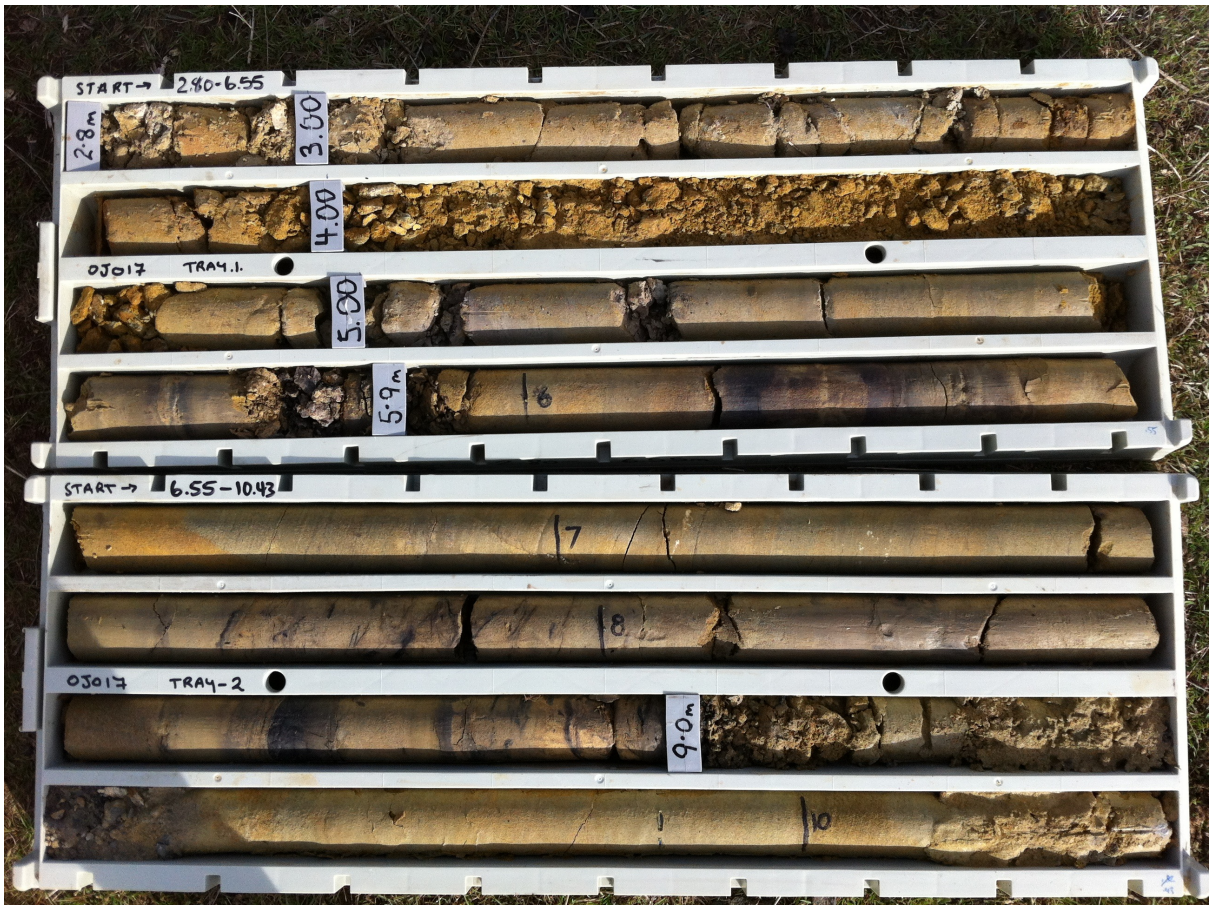
mFrom	mTo	Description
17	17.59	Pale grey medium to coarse-grained lithic sandstone with carbonaceous mudstone and coal clasts
17.59	18.17	Heavy dull coal and carbonaceous mudstone
18.17	18.22	Medium-grained sandstone and coal
18.22	18.5	Cream, clay-rich, highly degraded mudstone
18.5	18.78	Heavy dull coal with approximately 1% vitrinite
18.78	18.89	Brown-cream mudstone-ash layer
18.89	19.63	Moderately bright brittle coal with approximately 40% vitrinite
19.63	19.95	Heavy dull coal and carbonaceous mudstone
19.95	21	Cream-grey, broken mudstone

OJ017 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
0	5.95	fx				broken ground
12.4	12.8	bd	70			
14.05	14.34	jt	20		PR	
21	27.45	bd	75			
31.17	31.23	ft		Cy		annealed fault?
39.02	40.52	ft				very broken
40.68	40.76	ft		Cy		annealed fault?
40.95	41.3	jt	25	Cy	PR	
50	51	ft				fault zone

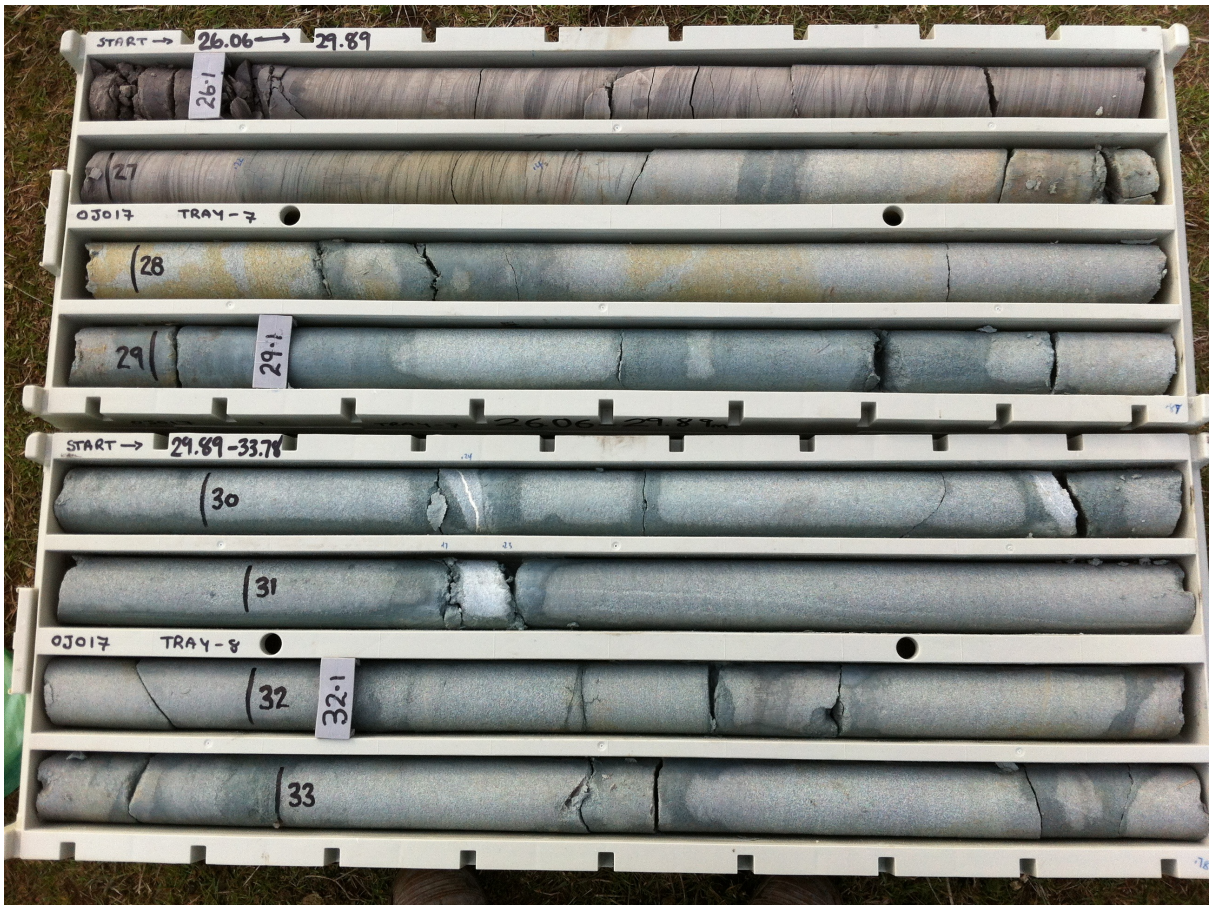
OJ017 - RQD

m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	0	0	31	32	100	95
1	2	0	0	32	33	100	95
2	3	20	0	33	34	100	100
3	4	100	0	34	35	100	100
4	5	100	0	35	36	100	100
5	6	100	0	36	37	100	83
6	7	100	100	37	38	100	100
7	8	100	100	38	39	100	100
8	9	100	100	39	40	40	0
9	10	100	50	40	41	100	0
10	11	100	33	41	42	100	100
11	12	100	48	42	43	100	46
12	13	100	100	43	44	100	100
13	14	100	90	44	45	100	100
14	15	100	54	45	46	100	66
15	16	100	100	46	47	100	95
16	17	100	100	47	48	100	92
17	18	100	63	48	49	100	55
18	19	100	0	49	50	100	100
19	20	100	0	50	51	100	0
20	21	100	0	51	52	100	100
21	22	100	100	52	53	100	100
22	23	100	100	53	54	100	100
23	24	100	100	54	55	100	95
24	25	100	100	55	56	100	100
25	26	100	100	56	57	100	100
26	27	100	70	57	58	100	100
27	28	100	100	58	59	100	100
28	29	100	100	59	60	100	100
29	30	100	100	60	60.3	100	100
30	31	100	100	NB: Cutting Bit to 2.8m - No Core			

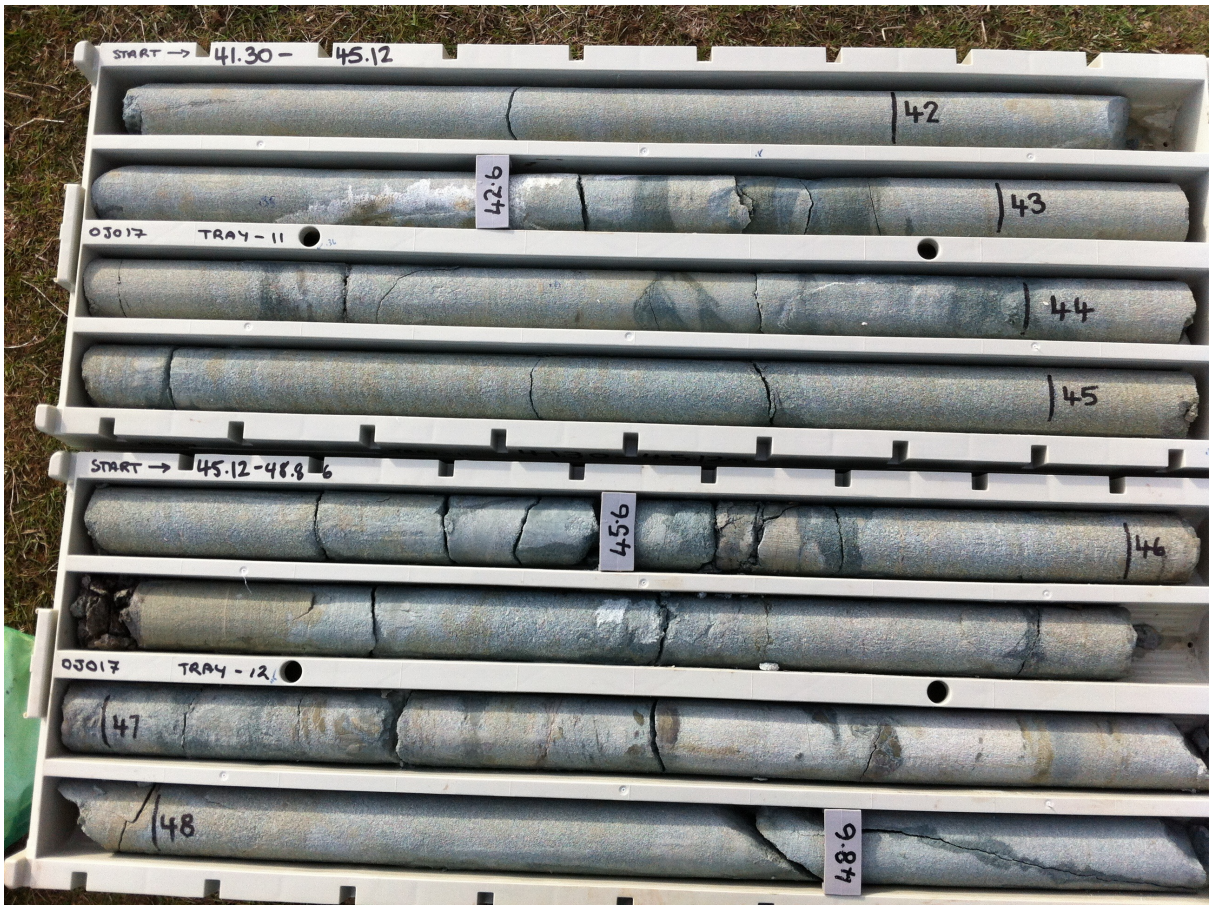

START→ 2.80-6.55
2.8m
3.60
4.00
OJ017 TRAY-1
5.00
5.9m
6
START→ 6.55-10.43
7
8
OJ017 TRAY-2
9.0m
10


START→ 10.43-14.34
11
12
12.1
OJ017 TRAY-3
13
14
START→ 14.34-18.17
15
15.2
16
OJ017 TRAY-4
17
18.00


START →
18.17-22.14
18·3
19.00
20
OJ017
TRAY-5
20·3
21.00
22
START →
22.14-26.06
23
23·1
24
OJ017
TRAY-6
25
26


START →
26.06 → 29.89
26·1
27
OJ017
TRAY-7
28
29
29·1
START →
29.89-33.78
30
31
OJ017
TRAY-8
32
32·1
33


START → 33.78 — 37.57
34
35
35-1
OJ017 TRAY - 9
36
37
START → 37.57 — 41.30
38
38-1
39
CORE LOSS 0.6m
OJ017 TRAY - 10
40.00
40.5
41


START → 41.30 — 45.12
42
42.6
43
OJ017 TRAY - 11
44
45
START → 45.12 - 48.8
45.6
46
OJ017 TRAY - 12
47
48
48.6


START → 46.86-52.57
49
50.0
OJ017 TRAY-13
51
51.6
52
START → 52.57 — 56.44
53
54
OJ017 TRAY-14
54.6
55
56


START → 56.44-60.33 EOH
57
57.6
58
OJ017 TRAY-15
59
60
60.4
START → 52.57 — 56.44
53
54

Appendix 19. OJ018 Logs and Core Photos

Hole ID: **OJ018**

Collar:	Northing:	5308563	mN	Datum:	GDA	
	Easting:	526577	mE	Locating Method:	Survey	
	Elevation:	404	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Northumbria, Jericho				

Surveys:

Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)
Depth:	27.49 m
Azimuth:	n/a degrees
Dip	-90 degrees
Drilling Method:	Diamond (HQ3)
Date Drilled:	12/7/13 - 15/7/13
Drilling Company:	KMR Drilling
Site Geologist:	Karen Adams
Logging Geologist:	Karen Adams (Claire Thomas)

Notes:
No Samples taken
Dolerite from 20.01m
PVC lined to EOH

Drill Hole ID: OJ018

Project: Southern Midlands Coal

License:

Date Drilled: 12th to the 15th of July, 2013

Collar: Easting: 55 526 577
Northing: 5 308 563
Elevation: 404
(GDA - Surveyed)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	3.6	No Core - Cutting bit
3.6	5.64	Moderately to strongly weathered, orange (with minor grey zones) medium to coarse-grained lithic sandstone
5.64	7.6	Orange, strongly weathered clay-rich mudstone with ferruginous alteration and some remnant silica-sericite alteration
7.6	8.61	Grey sericite-silica alterated mudstone with calcite veins and joint alteration
8.61	9.01	Green-grey, sericite-silica altered medium-grained lithic sandstone
9.01	9.4	Orange, medium to coarse-grained lithic sandstone with 5-7mm clasts of mudstone. Appears to be water pathway, possibly fault
9.4	10.02	Green-grey, sericite-silica altered medium-grained lithic sandstone
10.02	10.53	Orange, moderately to strongly weathered, clay-rich, medium-grained lithic sandstone
10.53	11.22	Green-grey, sericite-silica altered medium-grained lithic sandstone
11.22	11.32	Orange, moderately weathered medium-grained lithic sandstone
11.32	11.98	Green-grey, sericite-silica altered medium to fine-grained lithic sandstone
11.98	14.63	Orange-yellow, moderately to strongly weathered, medium to coarse-grained lithic sandstone with very minor mudstone and red-brown clasts of mudstone at approximately 14.53m
14.63	17.15	Red to white, wth some pink leached and zonally ferruginously (phlogopite??) altered coarse to medium-grained lithic sandstone.
17.15	18.88	White-grey-green, silica-sericite altered/leached, medium to coarse-grained lithic sandstone
18.88	20.01	White, pink and grey, leached and altered, medium to coarse-grained lithic sandstone
20.01	27.49	Green-grey, fine-grained dolerite with frequent fractures and moderately frequent calcite veining. Chlorite and calcite alteration prominent at uphole contact.
	EOH	

OJ018 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
3.6	5.66	bd	80			
5.66	7.26	fx		Fe		
7.35	7.37	jt	80	Fe		
7.37	7.53					
7.4	7.73	jt	70			
7.73	9.02				UR	
8.03	8.07	jt	75	Fe		
8.1	8.17	vn	80	Fe		
8.23	8.25	jt	15	Ca		
8.23	8.25	jt	20	Ca		
8.23	8.25	jt	50	Ca		
8.44	8.53	jt	45	FeCa		
8.53	8.54	jt	90	Fe		
9.11	9.13	jt	85	Fe	UR	
9.16	9.2	jt	85	Fe	UR	
10.02	10.5	bd	90	Fe		
12.15	14.7	bd	80			
12.07	12.13	jt	80	Fe		
12.45	12.64	jt	80	Fe	UR	
13.44	13.94	vn	80	Fe	UR	
14.94	14.96	jt	60	Ca	UR	
17.48	17.66	jt	30	Ca	UR	
14.87	20.01	jt	5	CaCy	UR	
20.06	20.56	vn		Ca		
20.09	20.11	jt	60	CaCy	UR	
20.45	20.5	jt	50	CaCy	PR	
20.56	20.6	jt	45	CaCy	UR	
20.6	21.4	jt	50	CaCy	UR	
20.76	20.96	jt	30	CaCy	UR	
21.19	21.26	jt	60	CaCy	UR	

OJ018 - RQD

Metres From	Metres To	Recovery	RQD
0	1	0	0
1	2	0	0
2	3	0	0
3	4	40	40
4	5	100	73
5	6	100	59
6	7	100	0
7	8	100	22
8	9	100	63
9	10	100	88
10	11	100	94
11	12	100	98
12	13	100	48
13	14	100	88
14	15	100	79
15	16	100	98
16	17	100	100
17	18	100	79
18	19	100	98
19	20	100	100
20	21	100	21
21	22	100	45
22	23	100	0
23	24	100	0
24	25	100	35
25	26	100	45
26	27	100	68
27	27.49	100	60

No Core - Cutting bit to 3.6m


START → 3.6-7.41m
3.6m
4
5
OJ018 — TRAY-1
5.7m
6
7m
START → 7.41-11.27m
8
8.80
9
OJ018: TRAY #2
10
11


START → 11.27-15.15m
11.90
12
13
OJ018: TRAY #3
14
15
15.03
START → 15.15-18.94
16m
17
OJ018: TRAY #4
18
18.1


START → 18.94-22.71
19
20
25-6
OJ018: TRAY #5
21
22
START → 22.71-26.37
22-9
23
24
OJ018: TRAY #6
24-7
25
26


START → 26.37-27.49 EOH
27
27-5
OJ018: TRAY #7

Appendix 20. OJ020 Logs and Core Photos

Hole ID: **OJ020**

Collar:	Northing:	5311626	m N	Datum:	GDA	
	Easting:	522069	mE	Locating Method:	GPS	
	Elevation:	357	m	Accuracy:	3	m
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Northumbria, Jericho				

Surveys:

Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)	
Depth:	54.71	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Diamond (HQ3)	
Date Drilled:	19/7/13 - 23/7/13	
Drilling Company:	KMR Drilling	
Site Geologist:	Karen Adams	
Logging Geologist:	Karen Adams (Claire Thomas)	

Notes: No seams to warrant detailed logs or sampling, but higher level of detail observed in lithology in areas that may assist in correlation with other drilling

Drill Hole ID: OJ020

Project: Southern Midlands Coal

Licence: 26/2008

Date Drilled: 19th to 23rd of July, 2013

Collar: Easting: 55 522 069
Northing: 5 311 626
Elevation: 357
(GDA - GPS)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	5.8	No Core - Cutting bit
5.8	8.12	Orange, strongly weathered, clay-rich, fine-grained sandstone and carbonaceous mudstone banding. Strongly broken downhole
8.12	8.55	Core Loss
8.55	9.23	Orange, strongly weathered, clay-rich mudstone and minor fine-grained sandstone with gradational downhole oxidation front downhole
9.23	10.92	Interbedded dark grey carbonaceous mudstone and pale grey fine-grained, moderately quartz-rich sandstone with some mudstone and increasing sandstone downhole
10.92	12.73	Medium-grained, pale grey moderately quartz-rich sandstone with flacer banding
12.73	13.31	Pale grey fine-grained sandstone with carbonaceous mudstone banding
13.31	13.77	Pale grey, medium to coarse-grained, quartz-rich sandstone with minor carbonaceous mudstone
13.77	13.87	Carbonaceous mudstone with very minor sandstone
13.87	13.99	Interbedded carbonaceous mudstone and pale grey, fine-grained sandstone
13.99	14.09	Carbonaceous mudstone
14.09	14.2	Carbonaceous mudstone with minor fine-grained sandstone interbeds
14.2	14.45	Carbonaceous mudstone
14.45	14.64	Interbedded pale grey, quartz-rich sandstone with carbonaceous mudstone
14.64	14.94	Coarse to medium-grained, pale grey, quartz-rich sandstone with 2-3% disseminated pyrite and some flacer banding
14.94	15.02	Carbonaceous mudstone and minor sandstone
15.02	15.13	Fine-grained pale grey sandstone with some carbonaceous mudstone
15.13	15.39	Carbonaceous mudstone
15.39	15.45	Pale grey fine-grained sandstone
15.45	15.5	Carbonaceous mudstone with minor fine-grained pale grey sandstone
15.5	15.53	Pale grey fine-grained sandstone
15.53	15.61	Carbonaceous mudstone with minor fine-grained pale grey sandstone
15.61	15.66	Pale grey fine-grained sandstone
15.66	15.76	Grey fine-grained sandstone with some carbonaceous mudstone
15.76	15.87	Carbonaceous mudstone with minor ash banding
15.87	15.91	Pale grey fine-grained sandstone
15.91	15.93	Carbonaceous mudstone
15.93	15.95	Pale grey fine-grained sandstone with minor carbonaceous mudstone
15.95	16.4	Interbedded carbonaceous mudstone and some fine-grained, pale grey sandstone
16.4	16.62	Carbonaceous mudstone and very minor pale grey, fine-grained sandstone
16.62	17.01	Interbedded carbonaceous mudstone and some fine-grained, pale grey sandstone
17.01	17.15	Carbonaceous mudstone and very minor pale grey, fine-grained sandstone

17.15	17.33	Dominantly carbonaceous mudstone with some pale grey, fine-grained sandstone and very minor fossilised bioturbation
17.33	17.77	Interbedded fine-grained pale grey sandstone and carbonaceous mudstone with some possible fossilised bioturbation
17.77	18.22	Pale grey, moderately quartz-rich, fine to medium-grained sandstone with some flacer banding and carbonaceous mudstone bedding
18.22	18.35	Interbedded pale grey, fine-grained sandstone and carbonaceous mudstone
18.35	18.48	Carbonaceous mudstone with minor fine-grained pale grey sandstone interbeds
18.48	18.66	Pale grey, quartz-rich, fine to medium-grained sandstone with minor carbonaceous mudstone
18.66	19.23	Carbonaceous mudstone and some mudstone with minor fine-grained pale grey sandstone interbeds
19.23	19.74	Grey mudstone with possible fossilised bioturbated sandstone at the bottom of the sequence
19.74	20.39	Pale grey to white, fine-grained, quartz-rich sandstone with minor flacer banding and bioturbation on downhole contact
20.39	21.32	Grey mudstone and very minor fine-grained sandstone
21.32	21.64	Grey mudstone and minor fine-grained sandstone
21.64	21.97	Medium to coarse-grained, grey to pale grey, quartz-rich sandstone with minor mudstone cross-bedding
21.97	22.22	Interbedded pale grey, fine-grained sandstone and carbonaceous mudstone with mudstone base
22.22	22.97	Finely laminated carbonaceous mudstone with some fine-grained, pale grey sandstone increasing downhole
22.97	23.02	Interbedded pale grey to white fine-grained sandstone and carbonaceous mudstone
23.02	23.44	Finely laminated carbonaceous mudstone and pale grey fine-grained sandstone with some pyrite
23.44	23.48	Bioturbated pale grey to white sandstone with some mudstone and carbonaceous mudstone
23.48	23.88	Grey mudstone with styolitic downhole contact
23.88	24.46	White to pale grey, fine-grained sandstone with styolitic carbonaceous mudstone zones up and downhole
24.46	24.98	Grey to dark grey mudstone
24.98	25.01	Carbonaceous mudstone
25.01	25.08	Dark grey carbonaceous mudstone
25.08	25.18	Grey to pale grey, fine-grained sandstone
25.18	25.46	Carbonaceous mudstone and minor pale grey, fine-grained sandstone
25.46	27.11	Fine-grained, pale grey to white sandstone with minor mudstnoe and zonal green-yellow tinge
27.11	27.34	Yellow-green-grey, altered medium to coarse-grained sandstone
27.34	42.86	Likely upwardly fining sequence of pale grey to white quartz and zonally pyrite-rich sandstone with minor mudstone. Chlorite altered flacer banding and some angular to sub-angular mudstone clasts (at approximately 41.1m) present
42.86	43.03	Grey mudstone
43.03	43.7	Pale grey, medium-grained quartz-rich sandstone with rip-up clasts and ripped-up mudstone beds
43.7	43.82	Grey mudstone with minor sandstone
43.82	44.17	Pale grey medium-grained, quartz-rich sandstone with angular mudstone rip-up clasts
44.17	47.78	Pale grey to white medium to coarse-grained, quartz-rich sandstone with zonal disseminated pyrite of up to 3% in abundance (especially between 46.4-46.5m) that appears to be particularly associated with flacer banding
47.78	48.17	Pale grey medium to coarse-grained, quartz-rich and zonally sulphide rich sandstone

		with sub-rounded to rounded mudstone and carbonaceous mudstone clasts
48.17	51.38	Pale grey to white, medium to fine-grained, quartz-rich and zonally sulphide-rich sandstone with minor to very minor mudstone bedding
51.38	51.67	Pale grey quartz-rich, medium to coarse-grained sandstone with angular carbonaceous mudstone clasts
51.67	54.71	Pale grey quartz-rich medium-grained sandstone with some falcer banding uphole and very minor compressed carbonaceous mudstone clasts around 53.4-53.8m
	EOH	

OJ020 - Structure

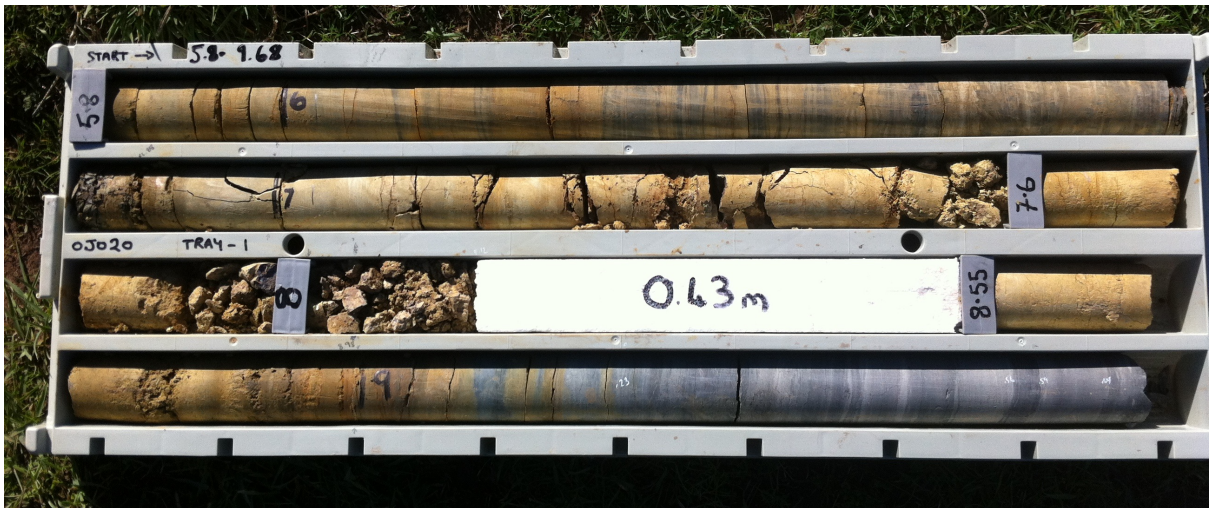
m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
0	9.06	fx		FeCa	UR	Fracture zone
9.79	10	fx			UR	Fracture zone
10.12	10.45	fx		Fe	UR	Fracture zone
11.44	11.45	jt	90		UR	
12.46	12.46	bd	90		UR	Fracture along bedding plane
12.72	17.73	bd	85		UR	Fracture along bedding plane
13.04	13.3	bd	90		PS	Fracture along bedding plane
13.44	13.46	fx	85		UR	
13.67	13.68	fx	85		UR	
13.77	13.77	bd	90		UR	Fracture along bedding plane
14.06	14.07	jt	80		UR	
14.2	14.31	jt	45	Ca	UR	
14.45	14.62	jt	80		UR	
14.95	14.97	jt	80		UR	
15.02	15.1	fx				Fracture zone
15.16	15.39	jt	60		PS	
15.59	15.62	bd				Fracture along bedding plane
15.16	15.16	jt	90		PS	
15.86	15.88	fx	80		US	
15.97	15.98	bd	90		UR	Fracture along bedding plane
16.81	16.82	fx	90		UR	
17.33	17.35	bd	90		UR	Fracture along bedding plane
17.87	17.89	bd	90			
18.61	18.61	bd	90		UR	Fracture along bedding plane
19.01	19.03	fx				Fracture zone

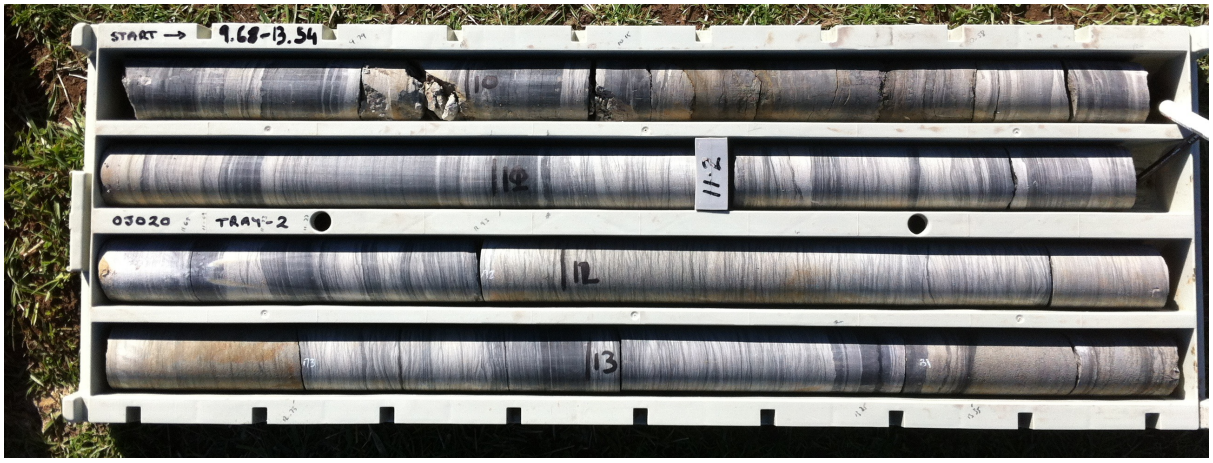
19.7	19.73	fx				Fracture zone
20.11	20.11	bd	90		UR	Fracture along bedding plane
20.35	20.35	bd	90		UR	Fracture along bedding plane
21.97	21.97	fx	90		UR	
22.8	22.96	fx				
23.41	23.42	bd	90		UR	Fracture along bedding plane
23.65	23.65	fx	90		UR	
23.73	23.7	fx	90		UR	
24.79	24.85	jt	45		UR	
27.35	27.35	bd			UR	Fracture along bedding plane
27.5	27.51	jt	85		UR	
29.24	29.24	bd	90		PR	Fracture along bedding plane
30.01	30.01	bd	90		UR	Fracture along bedding plane
30.04	30.05	jt	85		UR	
30.1	30.17	jt	45		UR	
30.43	30.46	jt	85		UR	
30.45	30.48	jt	85		UR	
32.37	32.39	jt	85		PR	
32.59	32.67	jt	45		UR	
33.93	33.94	jt	45		UR	
34.62	34.62	fx	90		UR	
34.63	34.64	jt	85		UR	
37.53	37.55	jt	85		UR	
37.76	37.82	jt	70		UR	
38.23	38.3	bd	85		UR	Fracture along bedding plane
38.36	38.38	jt	80		UR	
38.55	38.58	jt	80		PS	
38.95	39.02	jt	90		PS	
39.02	39.09	jt	45		PS	
39.09	39.09	jt	90		PS	
39.23	39.23	jt	90		PS	
39.88	39.88	bd	90		UR	Fracture along bedding plane
41.92	41.92	bd	85			Fracture along bedding plane
42.7	42.7	bd				Fracture along bedding plane
42.95	43	jt	50		PS	

43.27	43.33	fx				
43.71	43.75	fx	50		PS	
43.84	43.86	fx	70		PS	
45.54	45.59	jt	85		UR	
46.9	46.92	jt	85		UR	
46.99	47.02	jt	70		UR	
47.51	47.52	jt	85		PR	
48.1	48.1	fx				
48.33	48.33	fx	90		PR	
49.2	49.23	jt	80		PR	
51.2	51.22	jt	80		UR	
51.62	51.63	jt	85		UR	
52.45	52.21	jt	85		UR	
53.67	53.68	fx	85		UR	

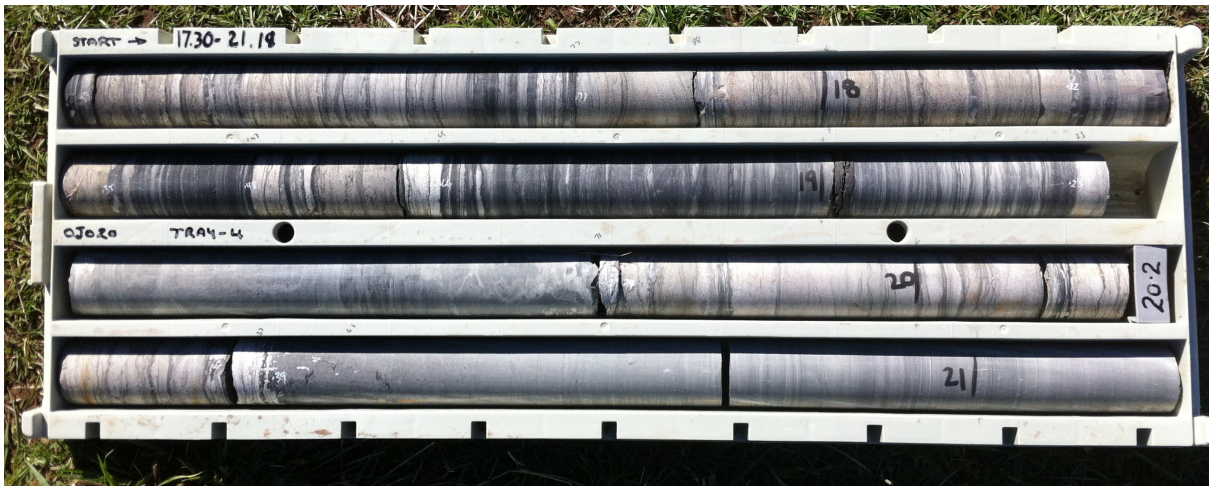
OJ020 - RQD

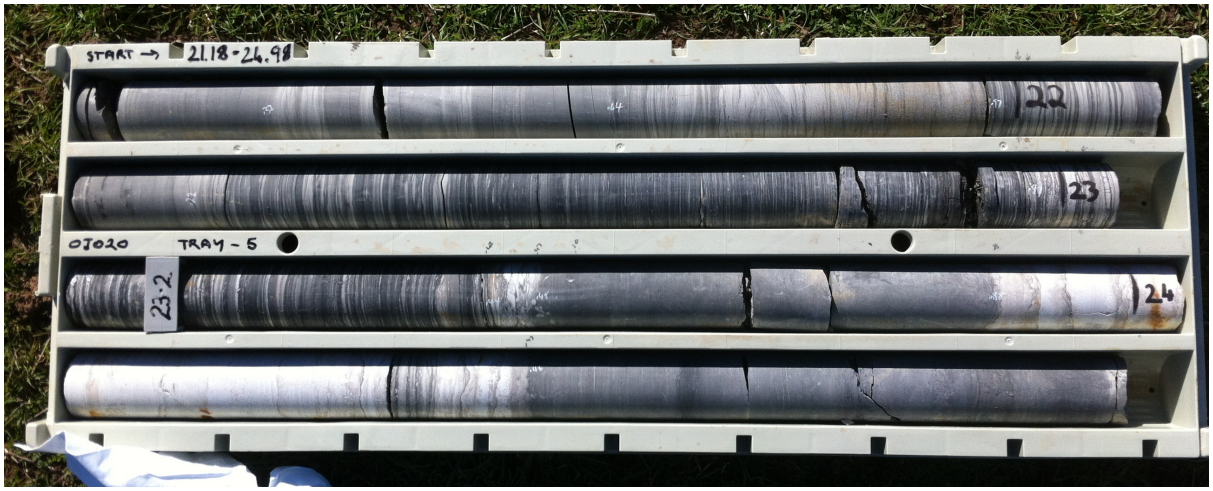
m From	m To	Recovery	RQD	m From	m To	Recovery	RQD
0	1	0	0	28	29	100	100
1	2	0	0	29	30	100	99
2	3	0	0	30	31	100	41
3	4	0	0	31	32	100	100
4	5	0	0	32	33	100	92
5	6	20	0	33	34	100	92
6	7	100	37	34	35	100	96
7	8	100	0	35	36	100	95
8	9	57	0	36	37	100	98
9	10	100	33	37	38	100	93
10	11	100	36	38	39	100	82
11	12	100	98	39	40	100	91
12	13	100	97	40	41	100	86
13	14	100	97	41	42	100	100
14	15	100	59	42	43	100	93
15	16	100	33	43	44	100	79
16	17	100	82	44	45	100	99
17	18	100	98	45	46	100	77
18	19	100	98	46	47	100	89
19	20	100	96	47	48	100	96
20	21	100	98	48	49	100	88
21	22	100	92	49	50	100	98
22	23	100	71	50	51	100	99
23	24	100	89	51	52	100	96
24	25	100	47	52	53	100	93
25	26	100	98	53	54	100	100
26	27	100	100	54	54.7	100	100
27	28	100	98	NB: Cutting bit to 5.8m - No Core			

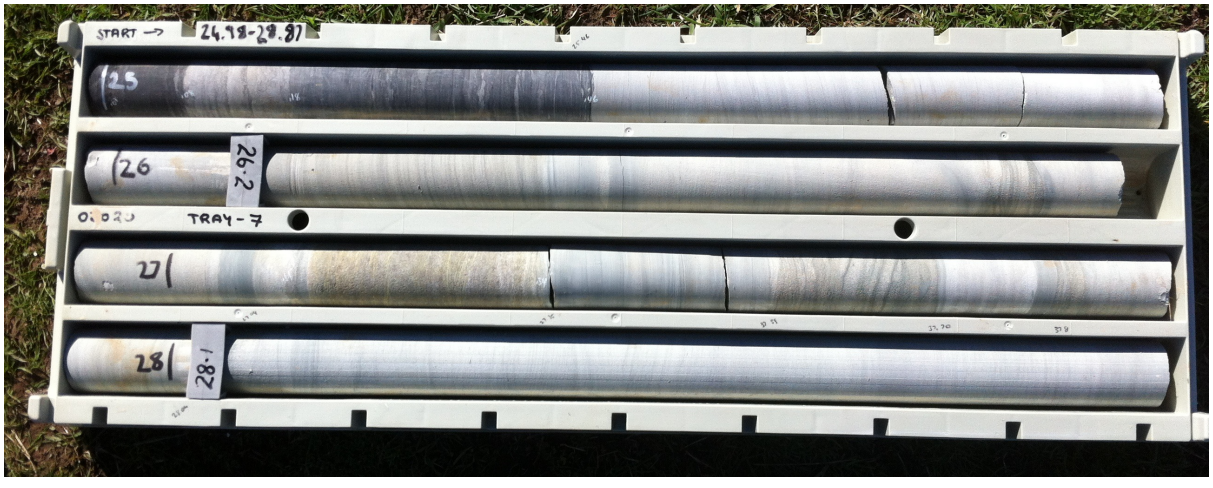

START →
5.8- 9.68
5.8
16
17
7.6
OJ020
TRAY - 1
18
0.63m
8.55
19


START →
9.68-13.54
10
11.2
OJ020
TRAY-2
12
13


START →
13.54-17.30
14
14.2
15
OJ020
TRAY - 3
16
17
17.2

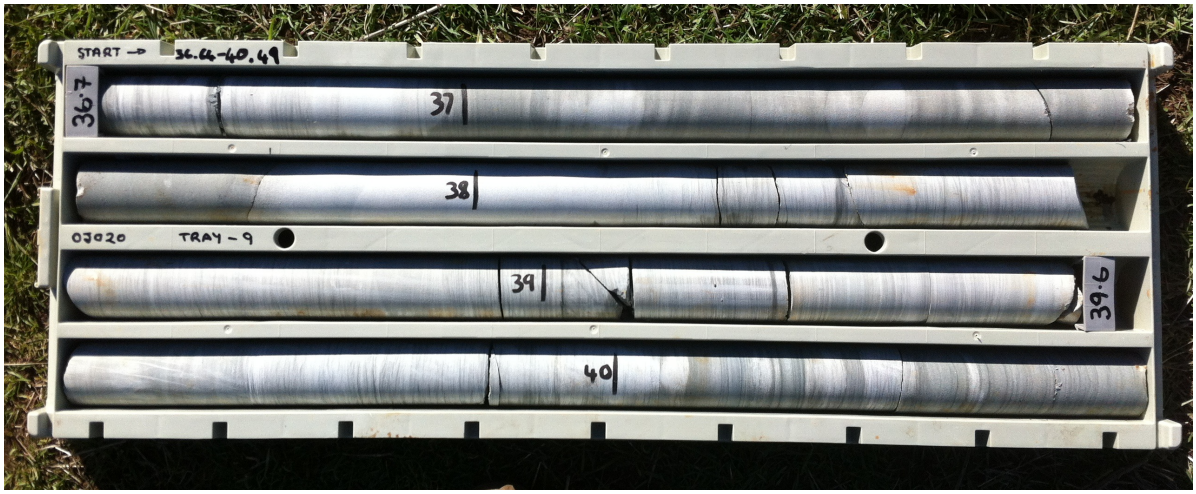

START →
17.30-21.18
18
19
OJ020
TRAY-4
20
20.2
21


START →
21.18-24.98
22
23
OJ020
TRAY-5
23.2
24


START →
24.98-28.87
25
26
26.2
TRAY-7
27
28
28.1

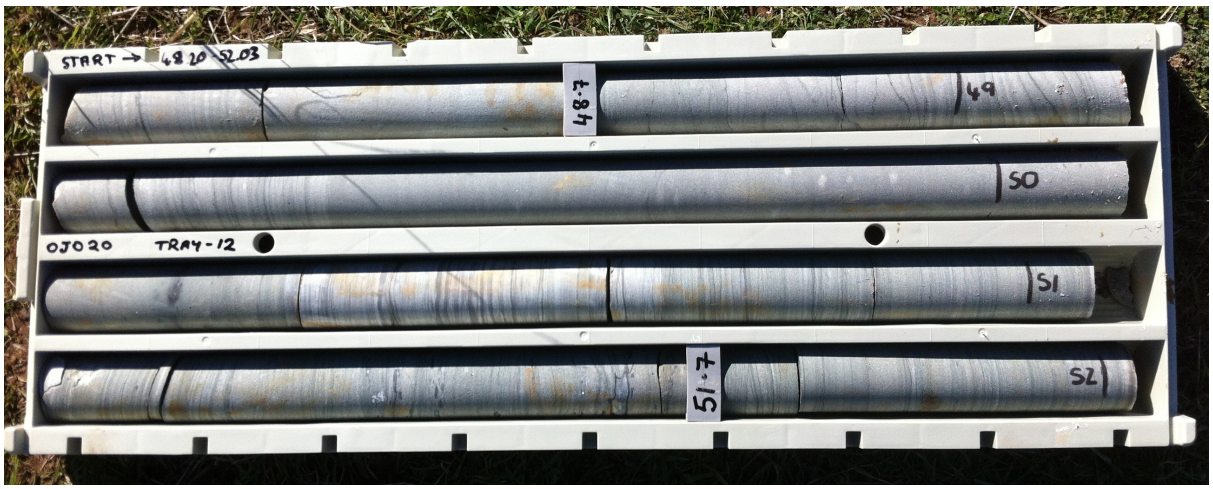

START →
28.87-32.80
29
30
30.7
OJ020
TRAY-6
31
32


START →
32.8-36.66
33
33.7
34
OJ020
TRAY-8
35
36


START →
36.66-40.49
36.7
37
38
OJ020
TRAY-9
39
39.6
40


START → 40.69-44.33
41
42
OJ020 TRAY-10
42.6
43
44


START → 44.33 48.20
45
45.74
46
OJ020 TRAY-11
47
48


START → 48.20 52.03
48.74
49
50
OJ020 TRAY-12
51
51.15
52


START →
52B - 54.7
53
OJO20
TRAY-13
54
54.7
EOH

Appendix 21. OJ024 Lithology Log

Hole ID: **OJ024**

Collar:	Northing:	5311193	mN	Datum:		GDA	
	Easting:	523815	mE	Locating Method:		GPS	
	Elevation:	395	m	Accuracy:	4	m	
	Tenement:	EL26/2008 Lake Tiberias					
	Location:	Northumbria, Jericho					

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tas)	
Depth:	31	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Open Hole	
Date Drilled:	5/7/13 - 8/7/13	
Drilling Company:	KMR Drilling	
Site Geologist:	Karen Adams	
Logging Geologist:	Karen Adams	

Notes: Dolerite from 0m
Foaming started at 28m (ie. Some water present at this point)
PVC lined to 31m

Drill Hole ID: OJ024

Project: Southern Midlands Coal
Licence: EL26/2008
Date Drilled: 5th - 8th July, 2013

Collar: Easting: 55 523 815
Northing: 5 311 193
Elevation: 395
(GDA - GPS)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	8	Dark-brown-blue, moderately to strongly weathered dolerite
8	15	Dark-blue-grey, weakly weathered dolerite
15	21	Dark-blue-grey fine to medium-grained dolerite
21	22	Dark-blue-grey dolerite with some minor orange, ferruginous alteration
22	26	Dark-blue-grey dolerite
26	27	Dark-blue-grey dolerite with significant orange, ferruginaous alteration and some calcite. Possible fault
27	31	Dark-blue-grey dolerite
	EOH	

Appendix 22. OJ025 Lithology Log

Hole ID: **OJ025**

Collar:	Northing:	5313463	mN	Datum:	GDA	
	Easting:	523907	mE	Locating Method:	Survey	
	Elevation:	366	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Rd, Oatlands				

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)
Depth:	33 m
Azimuth:	n/a degrees
Dip	-90 degrees
Drilling Method:	Open Hole
Date Drilled:	9/07/13
Drilling Company:	KMR Drilling
Site Geologist:	Karen Adams (Claire Thomas)
Logging Geologist:	Karen Adams

Notes:

No Samples taken

Water from 0m

Hole making small amount of water. To be grouted once geophysical survey has been carried out

Possible dolerite sill from around 14-16m

Likely dolerite contact from within 28m interval to end of hole

Drill Hole ID: OJ025

Project: Southern Midlands Coal

License:

Date Drilled: 9th of July, 2013

Collar: Easting: 55 523 907
Northing: 5 313 463
Elevation: 366
(GDA - GPS)
Azimuth: n/a
Dip: -90 degrees

mFrom	mTo	Description
0	2	Orange-brown, weathered medium to coarse-grained lithic sandstone
2	3	Brown-orange, weathered medium-grained lithic sandstone and some mudstone
3	4	Orange, clay-rich highly weathered, medium-grained lithic sandstone. Small sample
4	5	Orange-brown, weathered, medium to coarse-grained lithic sandstone. Small sample
5	6	Brown-grey mudstone and minor medium to coarse-grained lithic sandstone
6	7	Soft grey, clay-rich medium-grained lithic sandstone. Very small sample
7	9	Green-grey, medium-grained, altered lithic sandstone with minor quartz/calcite. Small samples
9	10	Green-grey, medium-grained lithic sandstone with some brown mudstone
10	11	Soft, grey-green, medium-grained altered lithic sandstone
11	12	Green-grey, mudstone and medium-grained lithic sandstone
12	13	Green-grey and some pink, altered mudstone with minor sandstone
13	14	Grey, possibly silica altered mudstone and fine-grained sandstone
14	15	Dark grey, crystalline rock with quartz and calcite veinlets (dolerite??). Some altered mudstone
15	16	Hard, black crystalline rock with calcite veinlets (dolerite???????)
16	17	Altered mudstone (silica-sericite?) and dark-grey crystalline rock
17	18	Dark-grey carbonaceous mudstone and grey mudstone with quartz, calcite and pyrite present
18	20	Green-grey, altered mudstone and pale grey altered mudstone (silica-sericite?)
20	21	Soft, grey-green altered mudstone, some calcite and minor carbonaceous mudstone
21	23	Pale-grey mudstone and minor green tinged, medium-grained sandstone
23	24	Grey mudstone with very minor calcite
24	26	Grey mudstone
26	27	Grey mudstone with minor carbonaceous mudstone
27	28	Grey mudstone with minor altered sandstone
28	29	Black, fine-grained dolerite(?) with significant amounts of calcite and minor mudstone
29	30	Black, fine-grained dolerite(?) with minor calcite
30	31	Black, fine-grained dolerite(?) with significant amounts of calcite
31	32	Black, fine-grained dolerite(?) with minor calcite
32	33	Grey, fine to medium-grained dolerite
	EOH	

Appendix 23. OJ026 Lithology Log

Hole ID: **OJ026**

Collar:	Northing:	5315462	mN	Datum:	GDA	
	Easting:	524337	mE	Locating Method:	Survey	
	Elevation:	350	m	Accuracy:		mm
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Rd, Oatlands				

Surveys:

Depth	Dip	Azimuth

Company:	South East Asia Resources (Tas)	
Depth:	10	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Open Hole	
Date Drilled:	10/07/13	
Drilling Company:	KMR Drilling	
Site Geologist:	Karen Adams (Claire Thomas)	
Logging Geologist:	Karen Adams	

Notes: No samples taken

Water from 1m

Hole finished early due to large amounts of sticky clay-rich mud, second attempt at open hole drilling of the target (OJ027) also failed, leading to a third attempt with diamond (OJ028) that was successful

Drill Hole ID: OJ026

Project: Southern Midlands Coal

Licence: EL26/2008

Date Drilled: 10th of July, 2013

Collar: Easting: 55 524 337

Northing: 5 315 462

Elevation: 350

(GDA - Surveyed)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	10	Brown-orange weathered dolerite, sandstone, mudstone and very minor quartzite tallus. Small sample size in 0-1m and 6-7m and extremely small sample size from 8-10m
	EOH	

Appendix 24. OJ028 Logs and Core Photos

Hole ID: **OJ028**

Collar:	Northing:	5315457	mN	Datum:	GDA	
	Easting:	524327	mE	Locating Method:	GPS	
	Elevation:	358	m	Accuracy:	3	m
	Tenement:	EL26/2008 Lake Tiberias				
	Location:	Bowhill Road, Oatlands				

Surveys:

Depth	Dip	Azimuth

Company:	South East Asia Resources (Tasmania)
Depth:	42.22 m
Azimuth:	n/a degrees
Dip	-90 degrees
Drilling Method:	Diamond (HQ3)
Date Drilled:	24/7/13 - 25/7/13
Drilling Company:	KMR Drilling
Site Geologist:	Karen Adams
Logging Geologist:	Karen Adams (Claire Thomas)

Notes: Approximately 0.48m left downhole (true EOH 42.7m)

PVC lined to EOH

Drill Hole ID: OJ028

Project: Southern Midlands Coal

License:

Date Drilled: 24th to 25th of July, 2013

Collar: Easting: 55 524 327
Northing: 5 315 457
Elevation: 358

(GDA - GPS)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	7	No Core - Cutting bit
7	7.19	Grey clay
7.19	7.36	Core Loss - Washed away
7.36	10.98	Grey, with minor orange, very clay-rich, poorly consolidated medium-grained sandstone
10.98	12.06	Grey, poorly consolidated, moderately clay-rich, medium to coarse-grained lithic sandstone with frequent angular carbonaceous mudstone rip-up clasts
12.06	12.5	Grey, soft, medium-grained lithic sandstone
12.5	13.13	Grey, poorly consolidated, moderately clay-rich, medium to coarse-grained lithic sandstone with frequent angular carbonaceous mudstone rip-up clasts
13.13	13.29	Core Loss - Washed away
13.29	13.9	Grey, soft, medium-grained lithic sandstone
13.9	14.97	Soft, very poorly consolidated, grey, medium to coarse-grained lithic sandstone with frequent and sometimes large (>5cm) clasts of coal and carbonaceous mudstone
14.97	18.32	Soft grey, clay-rich medium-grained lithic sandstone and some clay altered mudstone
18.32	18.6	Soft grey, poorly consolidated, medium to coarse-grained lithic sandstone with some carbonaceous mudstone and coal clasts
18.6	19.4	Soft grey, medium-grained, moderately clay-rich lithic sandstone
19.4	19.7	Soft grey, poorly consolidated, medium to coarse-grained lithic sandstone with irregular flacer banding and some carbonaceous mudstne clasts
19.7	20.9	Moderately soft, grey medium to fine-grained lithic sandstone
20.9	21.56	Grey, zonally dark grey to black, coarse to medium-grained, poorly consolidated lithic sandstone with zonal flacer banding and angular carbonaceous mudstone and coal rip-up clasts
21.56	21.86	Core Loss - Washed away
21.86	22.25	Grey, zonally dark grey to black, coarse to medium-grained, poorly consolidated lithic sandstone with zonal flacer banding and angular carbonaceous mudstone and coal rip-up clasts
22.25	23.73	Soft grey, medium to coarse-grained, poorly consolidated, lithic sandstone with small (10cm) zone of flacer banding at 22.8m
23.73	24.3	Soft, grey to dark grey, poorly consolidated, coarse-grained lithic sandstone with frequent carbonaceous mudstone clasts and minor flacer banding
24.3	24.55	Soft grey, moderately clay-rich, medium-grained lithic sandstone
24.55	24.78	Pale grey quartzite
24.78	27.64	Grey, soft clay-rich, medium to fine-grained lithic sandstone and mudstone with minor carbonaceous mudstone clasts (likely rip-up clasts) at 25.63m and 26.2m
27.64	27.82	Pale grey, hard quartzite
27.82	30.54	Soft grey, clay-rich medium-grained lithic sandstone and mudstone with minor

		carbonaceous mudstone clasts at 29.18m
30.54	30.95	Soft, moderately to strongly clay-rich, dark grey to black, interbedded carbonaceous mudstone and mudstone
30.95	31.2	Soft grey, poorly consolidated medium-grained lithic sandtone
31.2	31.59	Grey to dark grey, soft, moderately clay-rich, coarse to medium-grained lithic sandstone with zonal carbonaceous mudstone and small angular carbonaceous mudstone rip-up clasts
31.59	32.15	Soft grey, clay-rich, fine-grained lithic sandstone and mudstone
32.15	32.32	Dark grey, poorly consolidated, soft, medium to coarse-grained lithic sandstone with carbonaceous mudstone clasts
32.32	33.44	Grey soft, clay-rich medium to fine-grained lithic sandstone and mudstone with possible remnant carbonaceous mudstone bedding at 32.41m
33.44	33.51	Dark grey, soft, moderately clay-rich, fine to medium-grained lithic sandstone
33.51	33.79	Soft grey, poorly consolidated medium to coarse-grained lithic sandstone with some carbonaceous mudstone clasts
33.79	34.29	Core Loss - Washed away
34.29	34.93	Soft to very soft, grey to dark grey, coarse to medium-grained lithic sandstone and carbonaceous mudstone
34.93	35.07	Moderately hard, pale grey, fine to medium-grained lithic sandstone with minor compressed clasts. Tuffaceous remnants (?)
35.07	35.26	Soft grey, clay-rich medium-grained, lithic sandstone
35.26	36.2	Moderately soft, grey to dark grey, moderately clay-rich, medium-grained lithic sandstone with frequent carbonaceous mudstone 'beds' and clasts
36.2	37.79	Soft grey, clay-rich, medium to fine-grained lithic sandstone
37.79	38.13	Grey to dark-grey, soft, poorly consolidated, medium to coarse-grained lithic sandstone with flacer banding
38.13	39.13	Soft grey, clay-rich, medium to fine-grained lithic sandstone and mudstone with irregular styolitic flacer banding downhole
39.13	39.5	Soft grey, poorly consolidated, medium to coarse-grained lithic sandstone with some carbonaceous mudstone clasts and carbonaceous mudstone bedding at approximately 30 degrees downhole
39.5	40.67	Grey soft, clay-rich, medium to coarse-grained lithic sandstone and mudstone
40.67	41.4	Soft grey, poorly consolidated, medium to coarse-grained lithic sandstone with carbonaceous mudstone clasts and minor flacer banding
41.4	41.83	Grey to dark-grey, soft clay-rich, medium to fine-grained lithic sandstone with remnant carbonaceous mudstone beds and flacer banding
41.83	41.92	Dark grey, soft clay-rich mudstone and carbonaceous mudstone
41.92	42.14	Grey clay-rich, soft, fine to medium-grained lithic sandstone and mudstone
42.14	42.22	Dark grey, clay-rich soft, carbonaceous mudstone and mudstone
	EOH	

OJ028 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
7	7.2	fx				
8.18	8.2	fx	85		UR	
8.46	8.88	fx	85		UR	
9.65	9.86	fx				
11.2	11.33	fx				
11.78	11.95	fx				
13.08	13.1	fx	85			
16.35	16.39	fx				
18.26	18.53	fx				
21.3	21.34	fx	85		UR	
21.47	21.5	jt	85		UR	
22.25	22.26	fx	90		UR	
22.5	22.56	fx	90		UR	
22.6	22.01	fx	90		UR	
22.83	22.84	fx	90		UR	
23.95	23.95	fx	90		UR	
24.22	24.22	fx	90		UR	
24.55	24.26	fx	90		UR	
24.77	24.78	fx	90		UR	
26.36	26.37	fx	90		UR	
27.64	27.64	fx	90		UR	
27.82	27.83	fx	90		UR	
30.47	30.47	fx	90		US	
31.14	31.14	fx	90		UR	
31.58	31.59	fx	90		UR	
32.26	32.28	fx	85		UR	
33.52	33.62	fx				
34.3	34.46	fx				
34.92	34.92	fx	85		PR	
34.98	35.01	fx	85		UR	
38.35	38.38	jt	45		UR	
39.08	39.12	jt	45		PR	
39.45	39.52	jt	50		UR	
41.14	41.33	fx				
41.79	41.88	jt	80		UR	

OJ028 - RQD

Metres From	Metres To	Recovery	RQD
0	1	0	0
1	2	0	0
2	3	0	0
3	4	0	0
4	5	0	0
5	6	0	0
6	7	0	0
7	8	83	26
8	9	100	96
9	10	100	98
10	11	100	100
11	12	100	80
12	13	100	90
13	14	84	90
14	15	100	98
15	16	100	100
16	17	100	88
17	18	100	100
18	19	100	91
19	20	100	97
20	21	100	100
21	22	70	95
22	23	100	97
23	24	100	98
24	25	100	96
25	26	100	100
26	27	100	98
27	28	100	97
28	29	100	100
29	30	100	100
30	31	100	98
31	32	100	97
32	33	100	100
33	34	80	90
34	35	70	90
35	36	100	100
36	37	100	100
37	38	100	98
38	39	100	97
39	40	100	90
40	41	100	98
41	42	100	81
42	42.2	100	100

NB: Cutting Bit from 0-7m - No Core


START→ 7.00- 10.89
7.0
0.17
CORE
LOSS
8
OJ028 TRAY#1
9
9.6
10


START→ 10.89-
11
12
12.7
OJ028 TRAY#2
13
0.16m
CORE LOSS
14

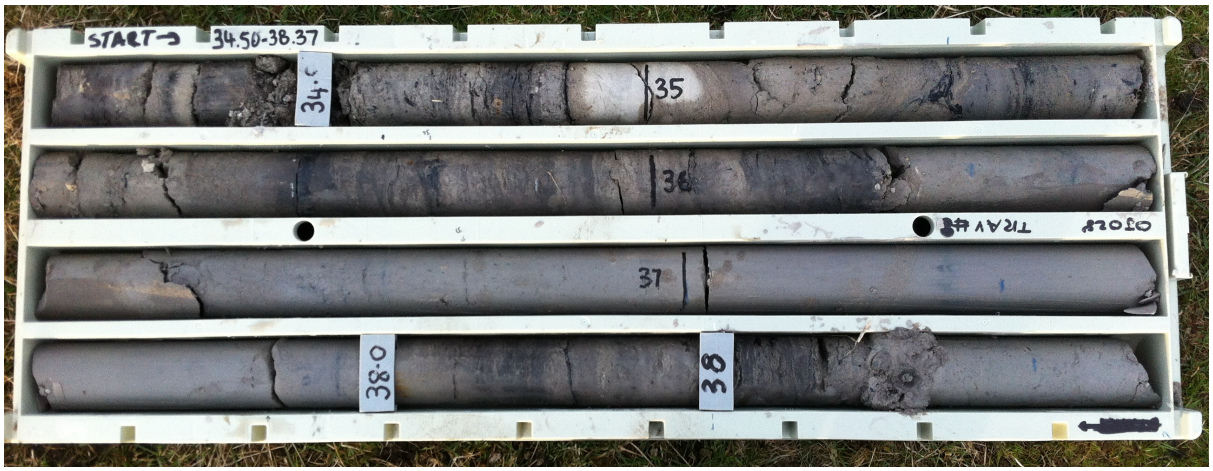

START→ 14.77-18.66
15
15.1
16
OJ028 TRAY #3
17
18
18.7


START → 18.66-22.74
19
20
OJ028 TRAY#4
21.00
21.7
CORE LOSS 0.3m
22.00


START → 22.74-26.66
23
24
24.4
OJ028 TRAY #5
25
26


START → 26.66-30.56
26.7
27
28.00
OJ028 TRAY #6
29
29.2
30


START→ 30.56-34.50
31
32
32.2
OJO28 TRAY#
33
34.00
0.5 m
CORE LOSS


START→ 34.50-38.37
34.5
35
36
37
38.0
38


START→ 38.37-42.22 EOH
39
40
OJO28 TRAY #
41.0
41.00
42
42.7
CORE LOSS
0.48
EOH

Appendix 25. OJ029 Logs and Core Photos

Hole ID: **OJ029**

Collar:	Northing:	5302647	mN	Datum:		GDA	
	Easting:	525759	mE	Locating Method:		GPS	
	Elevation:	439	m	Accuracy:	4	m	
	Tenement:	EL26/2008 Lake Tiberias					
	Location:	Ellesmere, Mudwalls Road					

Surveys:	Depth	Dip	Azimuth

Company:	South East Asia Resources (Tas)	
Depth:	32.75	m
Azimuth:	n/a	degrees
Dip	-90	degrees
Drilling Method:	Diamond (HQ3)	
Date Drilled:	26/7/13 - 30/7/13	
Drilling Company:	KMR Drilling	
Site Geologist:	Karen Adams	
Logging Geologist:	Karen Adams (Claire Thomas)	

Notes:
- Dolerite from 0m
- PVC lined to 16m
- No Samples taken
- Approximately 0.6m left down hole

Drill Hole ID: OJ029

Project: Southern Midlands Coal

Licence: EL26/2008

Date Drilled: 26th to the 30th July, 2013

Collar: Easting: 55 525 759
Northing: 5 302 647
Elevation: 439
(GDA - GPS)

Azimuth: n/a

Dip: -90 degrees

mFrom	mTo	Description
0	1.5	No Core - Cutting Bit
1.5	2.9	Grey with some orange, medium-grained dolerite
2.9	4.4	Orange to brown, strongly weathered dolerite. Possible fault
4.4	4.5	Core Loss
4.5	5.8	Grey with orange, iron-rich alteration on fracture planes, weakly weathered, medium-grained dolerite
5.8	32.75	Grey-green, medium-grained dolerite with low angle joints and veining from 10.8-11.9m with dark infil and some calcite.
	EOH	

OJ029 - Structure

m From	m To	Structure	Angle to Core Axis	Alteration	Form	Comments
1.5	1.65	fx		FeCa		
1.65	1.98	jt	45	Ca.Fe	UR	
1.81	1.84	fx			UR	
1.9	1.92	jt	85	Ca	UR	
1.92	3.65	jt	5	Ca.Fe	UR	
2.28	3.65	fx	90	FeCa	UR	
2.33	2.39	jt	50	FeCa	UR	
3.65	4.4	fx				Highly fractured & weathered
4.5	5.23	fx	15	Fe	UR	0-30 degrees
4.52	4.86	fx		Fe		
4.64	4.72	jt	45	Fe	UR	
4.84	4.86	jt	80	Fe	UR	
4.94	4.95	fx	85	Fe	UR	
5.36	5.44	jt	85	Fe	UR	
5.3	5.48	jt	45	FeCa	UR	
5.56	5.78	fx	85	Fe	UR	
5.67	5.69	jt	85	Fe	UR	
5.86	5.87	fx	90	FeCa	UR	
6.44	6.45	fx	90	Ca.Fe	UR	
8.17	8.19	jt	85	Ca.Fe	UR	
9.6	9.62	fx		Ca	UR	
9.8	9.91	jt	5	CaSeCl	US	
10.14	10.16	jt	85	CaSeCl	UR	
10.57	11	jt	15	CaSeCl	US	
11.08	11.1	jt	85	CaSeCl	UR	
11.21	11.77	fx	10	CaSeCl	US	
12.69	12.79	jt	85	CaSeCl	UR	
13.07	13.08	fx		CaSe	US	
13.99	13.99	jt	85	CaSe	US	
14.9	14.92	fx		CaSe	US	
15.12	15.14	jt	80	CaSe	UR	
15.62	15.62	fx	90	CaSe	UR	
17.02	17.04	jt	85		UR	
17.7	17.7	fx	90	FeCa	UR	
19.15	19.17	jt	85	FeCa	UR	
19.67	19.69	jt	80	FeCa	UR	
21.59	21.62	jt	80	FeCa	UR	
21.72	21.74	jt	80	CaCyFe	UR	
26.3	26.33	jt	80	CyCa	US	
27.08	27.09	fx	90	Ca		
27.27	27.42	jt	10	CaCy	US	

29.46	27.48	jt	80	CaCy	US	
29.58	29.61	fx		CaCy		
30.65	30.67	jt	80	CaCy	US	
31.29	31.3	jt	90	CaCy	US	
32.22	32.26	fx	90	CaCy	UR	
32.45	32.48	jt	85	CaCy	UR	

OJ029 - RQD

Metres From	Metres To	Recovery	RQD
0	1	0	0
1	2	50	28
2	3	100	41
3	4	100	0
4	5	100	0
5	6	100	30
6	7	100	95
7	8	100	100
8	9	100	100
9	10	100	86
10	11	100	54
11	12	100	42
12	13	100	100
13	14	100	98
14	15	100	94
15	16	100	100
16	17	100	100
17	18	100	100
18	19	100	100
19	20	100	97
20	21	100	100
21	22	100	94
22	23	100	100
23	24	100	100
24	25	100	100
25	26	100	100
26	27	100	97
27	28	100	82
28	29	100	100
29	30	100	95
30	31	100	98
31	32	100	98
32	32.75	100	96

Cutting Bit 0-1.5m - No Core

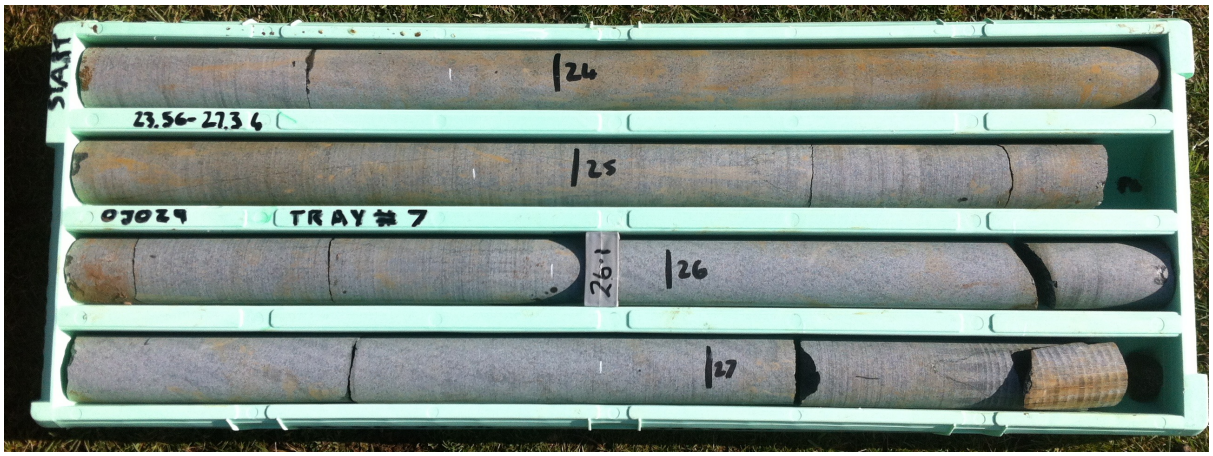

START
1.5
2
1.5-5.13
2.9
3
OJO29
TRAY #1
4
4.5
5
START
6
5.8
6
5.13-8.87
OJO29
TRAY #2
7
7.4
8


START
9
9.6
8.87-12.6
10
OJO29
TRAY #3
11
12
12.2


START
13
14
OJ029
TRAY#4
15
15.3
16


START
16.21-19.93
17.0
17
18
OJ029
TRAY#5
19


START
20
19.93-23.56
21
OJ029
TRAY#6
22
23-1
23


START
24
23.56-27.36
25
OJO29
TRAY # 7
26-1
26
27


START
27-6
28
27.36 - 31.06
29
OJO29
TRAY # 8
30
30-6
31


START
31.06 - 32.75
32
33-0
OJO29
TRAY # 9

Appendix 25. Oatlands – Jericho Areas, EL 25/2008 & EL 26/2008 Flora & Fauna Habitat Survey Report Summary

OATLANDS – JERICHO AREAS, EL 25/2008 & EL 26/2008

FLORA & FAUNA HABITAT SURVEY

REPORT SUMMARY

A summary of the flora and fauna habitat survey of the proposed exploratory drill sites in the Jericho and Oatlands area undertaken for Ron Gregory Prospecting on the 29th May 2013 is as follows.

Tiger Coal/ Southeast Asia Resources (Tas) Pty Ltd are exploring for coal resources within their two exploration licences EL 25/2008 Melton Mowbray and EL 26/2008 Lake Tiberias.

The exploration targets are located over the properties "Ellesmere" in the Jericho area and "Northumbria" in the Jericho/Oatlands area, and "Strathburn" in the Oatlands area. All sites are located on faming properties typical of the midlands, which includes arable paddocks utilized for cropping, including irrigated crops, exotic pastures for mainly sheep but some cattle, remnant vegetation on some of the hills and infestations of gorse.

The following proposed drill sites and their immediate surrounds were surveyed.

SEARS A. "Strathburn" property Oatlands GRID REF: 524319E – 5315458N

SEARS B. "Strathburn" property Oatlands GRID REF: 523898E – 5313456N

SEARS C. Oatlands property GRID REF: 525520E – 5313554N

SEARS D. "Northumbria" property GRID REF: 522041E – 5311732N

SEARS E. "Northumbria" property GRID REF: 523818E – 5311193N

SEARS F." Northumbria" property Jericho GRID REF: 523936E – 5310111N

SEARS G. "Northumbria" property Jericho GRID REF: 526018E – 5309231N

SEARS H. "Ellesmere" Jericho GRID REF: 525411E – 5302564N

SEARS I. "Ellesmere" Jericho GRID REF: 524020E – 5306974N

SEARS-A: The proposed drill site is located on the "Strathburn" property in a relatively flat and low lying arable paddock on the flood plain of the Dulverton Rivulet which is located about 100 metres to the south-east of the site. Another smaller tributary, Petherton Creek is

located about 100 metres to the north-west. There is a small dam (waterhole) on Dulverton Rivulet nearby. The paddocks in the location are composed of exotic grasses with patches of *Juncus spp.* and would have been ploughed and cultivated in the past although not in recent years. The paddock and the site have been heavily grazed by sheep.

There was very limited potential for any threatened species or other remnant vegetation in the vicinity of the proposed drill site. Care will need to be taken to contain any run-off and drainage from the site to ensure there is no siltation or contamination of the nearby creeks.

SEARS-B: This site is also located on the "Strathburn" property about 2,000 metres south of Sears A in a broad valley with a very small creek-line and a number of small waterholes. The site is located on the western side of the valley and about 1,000 metres to the south-west of the hill known as Mt Anstey at 470 metres altitude. The vegetation in the location consists of exotic pasture although it does not appear to have been ploughed or cultivated in the past so there is some potential for native grasses to be present however they were not observable at this time of the year and the area has been heavily grazed by sheep.

There was a small outcrop of rocks adjacent to the site where a few plants of the small native saltbush *Einadia nutans* was observed although it too had been heavily grazed.

There was very limited potential for any species of threatened flora to be present in the location.

SEARS-C: This site is located about 1,800 metres to the east of SEARS-B and about 600 metres east south-east of Mt Anstey and is accessed from Bowhill Road. The site is also within a broad valley surrounded by undulating hills and with a minor creek-line and a number of small waterholes including one about 150 metres to the north-east. The location is an arable paddock with exotic grasses and has been well cultivated and grazed by sheep. There is little potential for any remnant vegetation or threatened species to be present.

SEARS-D: This site is located about 2,500 metres to the south-west of SEARS-B on the "Northumbria" property near the Jordan River which is located about 200 metres to the west. The site is located in exotic pasture next to a small dry creek-line which is infested with gorse. No remnant native vegetation was observed in the vicinity of the site however the adjacent hill and slopes to the north were covered in open Eucalypt forest although the understorey was totally infested with gorse. No remnant vegetation was evident in the vicinity of the proposed drill site and there was little potential for any threatened species to be present. Run-off and drainage from the drilling operation will need to be managed to ensure there is no impact on the adjacent creek and downstream to the nearby Jordan River.

SEARS-E: This site is located about 2,000 metres to the east south-east of SEARS-D on the "Northumbria" property north of Jericho. The site is within an arable paddock consisting of exotic grasses and agricultural weeds. A large dam was also adjacent to the site.

No remnant native vegetation was evident in the vicinity of the proposed drill site. Run-off and drainage will need to be managed to avoid siltation or contamination of the adjacent dam and associated creek-lines.

SEARS-F: This site is located about 1,000 metres to the south of SEARS-E on the "Northumbria" property and is also located in a paddock with exotic pasture and grazed by sheep and adjacent to cultivated and irrigated cropping paddocks. No remnant native vegetation was evident.

SEARS-G: This site is located about 2,200 metres to the east south-east of SEARS-F and is located on the headland of a very large paddock currently under the plough in preparation for an irrigated crop. A narrow shelter belt which extended along the adjacent boundary was fenced on both sides to exclude stock. The trees within the shelter belt were a mixture of conifers and native species and the ground layer appeared to be predominantly exotic grasses although there was some potential for remnant native grassland species to be present but were not observable at this time of the year.

No remnant native vegetation will be impacted by this drill site located on the paddock headland.

SEARS-H: This site is located on the "Ellesmere" property within an arable paddock adjacent to the Mud Walls Road, road B31, between the Midlands Highway and Cranbrook and about 5 kilometres south of the Midlands Highway junction. The paddock has been cultivated and now consists of exotic pasture grasses and grazed by sheep. No remnant vegetation was evident in the vicinity of the site.

SEARS-I: This site is located on the "Ellesmere" property near the junction of Old Mill Road and Ellesmere Road on the southern side of the Midlands Highway. It is also a paddock of exotic pasture grasses across a low lying valley floor which is being grazed by cattle. A small localised soak was observed within 20 metres of the proposed drill site which included some remnant *Juncus sp.* and *Poa labillardierei.* The soak had been impacted by cattle and no other remnant native species were evident although there is some potential for ephemeral species to appear under favourable conditions.

The drilling operation should keep clear this soak and to avoid run-off or siltation from the drill site.

VEGETATION COMMUNITIES:

None of the proposed drill sites were located within areas of remnant native vegetation.

THREATENED VEGETATION COMMUNITIES:

No vegetation community listed as threatened under the Tasmanian *Nature Conservation Act 2002* was present in the areas surveyed.

THREATENED FLORA:

No species of flora listed under the Tasmanian *Threatened Species Protection Act 1995* or the Commonwealth *Environment Protection & Biodiversity Conservation Act 1999* were observed in the vicinity of any of the proposed drill sites during the survey

The following species of threatened flora are recorded on the "Natural Values Atlas" database from within 2,000 metres of certain drill sites but were not observed during the field survey.

Austrostipa scabra subsp *falcata* Sickle Spear Grass, rare in Tasmania. Locations A & H.

Austrostipa nodosa Knotty Spear Grass, rare in Tasmania. Locations A & H.

Asperula scoparia subsp *scoparia* Prickly Woodruff, rare in Tasmania, Location H.

Arthropodium strictum Chocolate Lily. Rare in Tasmania. Location H.

Scleranthus fascicularis Spreading Knawell. Vulnerable in Tasmania. Locations A,B,D,H & E.

Glycine latrobeana Clover Glycine. Vulnerable in Tasmania and Nationally. Location H.

Ranunculus pumilio var. *pumilio* Ferny Buttercup. Rare in Tasmania. Location E.

THREATENED FAUNA: One species of threatened fauna was observed during the field survey.

- Three Wedge-tailed eagles were observed together in the vicinity of location SEARS-B. The birds were mainly on the wing and their behaviour was observed to be in foraging/hunting/territorial mode. There were no suitable nesting trees or vegetation suitable as breeding habitat observed in the vicinity. There is a known nest tree adjacent to the Jordan River and two north of Lake Tiberias, see note below.

No evidence of the presence of threatened species such as scats of Tasmanian Devils or Spotted-tailed Quolls, or soil scratching of Bandicoots were observed in the field.

The Spotted-tailed Quoll, Tasmanian Devil and the Eastern-barred Bandicoot have all been recorded on the NVA database in the past from the wider locality.

The following species of threatened fauna are recorded on the NVA database from the wider locality.

Tasmanian Devil, *Sarcophilus harrisii.* Endangered in Tasmania and nationally.

Spotted-tailed Quoll *Dasyurus maculatus* subsp *maculatus* Rare in Tasmania and vulnerable nationally.

Wedge-tailed Eagle *Aquila audax* subsp *fleayi* the Tasmanian subspecies is endangered in Tasmania and nationally.

There is a known nest tree near the Jordan River Nest ID No.947 about 3,300 metre north-west of SEARS-B. The last survey and confirmed use of the nest was in 2001.

There are also two nest trees in close proximity to each other about 4,000 metres north of Lake Tiberias. Nest Id. Nos 1076 and 1097 and were last surveyed in 2002.

Eastern-barred Bandicoot *Parameles gunnii* is relatively widespread in Tasmania but vulnerable nationally.

Tasmanian Azure Kingfisher *Alcedo azurea* subsp *diemenensis* The Tasmanian subspecies in endangered in Tasmania and nationally.

Swift Parrot *Lathamus discolour* is endangered in Tasmania and nationally.

Tussock Skink *Pseudomoia pagenstecheri* is vulnerable in Tasmania.

Ptunarra Brown Butterfly *Oreixenica ptunarra* subsp. *roonina* is vulnerable in Tasmania.

THREATENED FAUNA HABITAT: No specific habitat was observed during the field survey for any of the threatened species of fauna listed above.

ENVIRONMENTAL WEEDS: Gorse is widespread in the wider locality and was observed in close proximity only to one surveyed location, SEARS-D.

RECOMMENDATIONS:

- Manage and contain all drainage and run-off from drill sites in proximity to creek-lines, waterholes and dams to avoid siltation and risk of contamination.
  Locations SEARS-A,-B,-D,-E and - I.
- Site the drill hole clear of the localised soak at location SEARS-I.
- No threatened species of flora were observed and no specific action is required.
- No threatened vegetation communities were present in the target areas and no specific action is required.

- No threatened fauna or specific habitat for any of the threatened species of fauna known to be present in the wider area was observed during the survey and no specific action is required.
- Undertake the drilling of SEARS-D last in the program to ensure that soil-borne seed of gorse is not translocated to other clean sites.

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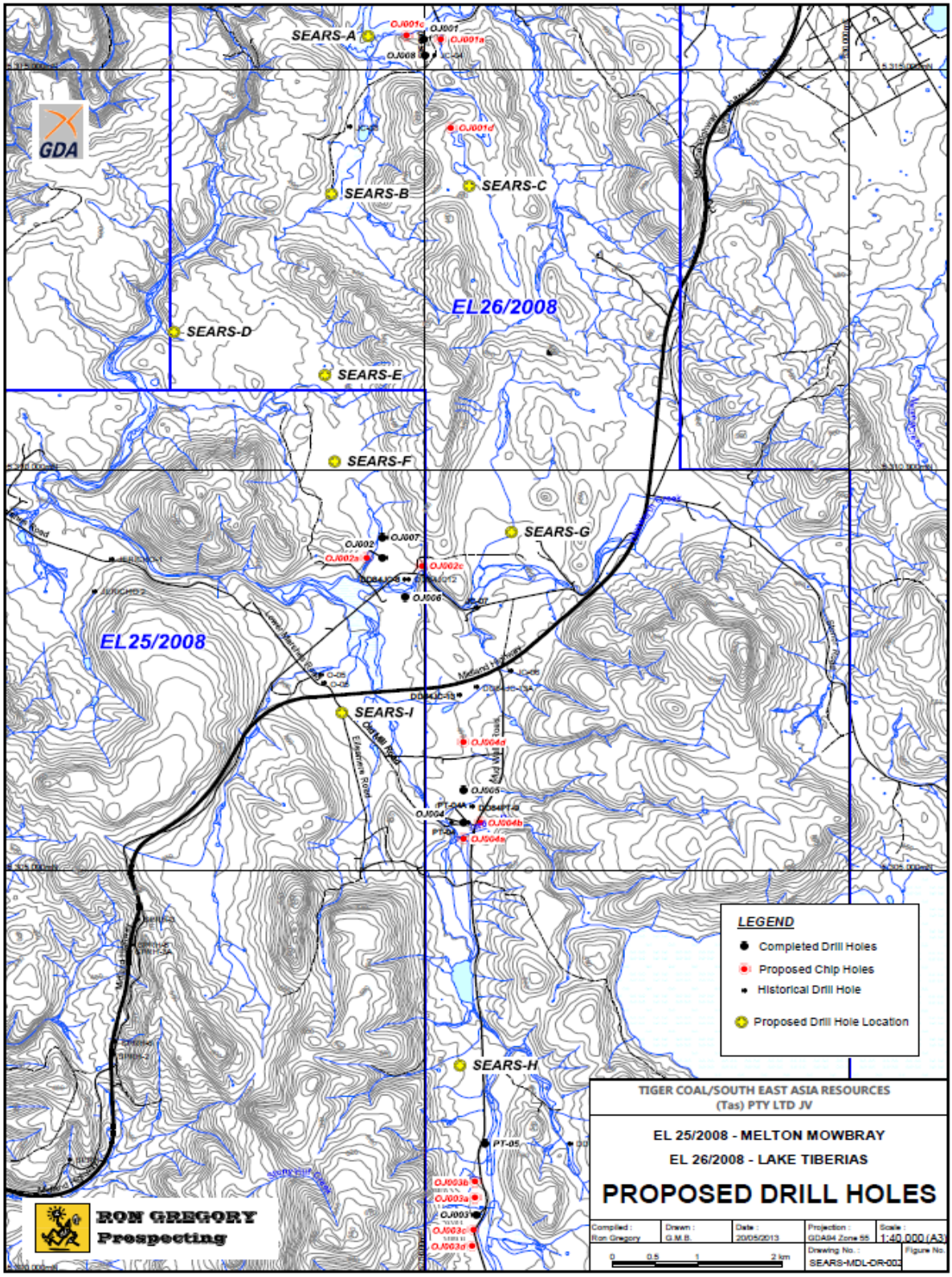

MAP No.1: EL 25/2008 & EL 26/2008
with Survey Sites marked in Yellow SEARS-A, -B, -C, -D, -E, -F, -G, -H, -I.