8 December 2015

Manager Companies
Companies Announcements Office
Australian Stock Exchange Limited

LEIGH CREEK ENERGY LIMITED

ASX ANNOUNCEMENT

Initial JORC Resource

Initial JORC Inferred Coal Resource of 377 Million Tonnes

Leigh Creek Energy Limited ("**LCK**") is pleased to announce a coal Inferred Resource of 377 Million Tonnes (Mt) at its flagship Leigh Creek Energy Project (LCEP) reported in accordance with the JORC Code (2012). The Geological and Modelling Report is appended for information.

The 377 Mt Inferred Resource is within the previously announced 220 to 530 Mt Exploration Target (see ASX Information Memorandum Relisting Compliance of 1 June 2015). LCK intends to undertake additional drilling, coal quality testwork and seismic surveys during 2016.

Executive Chairman Justyn Peters stated *"This is a great initial JORC Inferred Resources that is exactly within the range expected as stated in our June 1st ASX release. This is simply the first step towards us obtaining a PRMS Gas reserve, and I look forward to updating the market when we have our gas certification"*

The recently discovered geological and drillhole data (see ASX Announcement of 28 October 2015) has been used in the geological model that underpins this resource estimate.

A high level of confidence can be had in the additional data found, which resulted in the project going from an exploration target to a coal resources estimate. It is highly probable that further drilling will extend confidence in the coal quality and lead to upgrades in the deposit certainty and commerciality.

The geological modelling has also been used to confirm the most appropriate sites for the drilling program, expected now to be conducted during Quarter 1 of 2016. The drilling will also provide environmental information.

Gasification modeling and PRMS Reserve Estimate

Gasification modelling using data collected from Leigh Creek Coals has been completed, and gasification testwork on the coal samples obtained is nearing completion. Combined with this Resource Estimate these gasification reports will form the basis for a Gas Reserve estimate (PRMS compliant).

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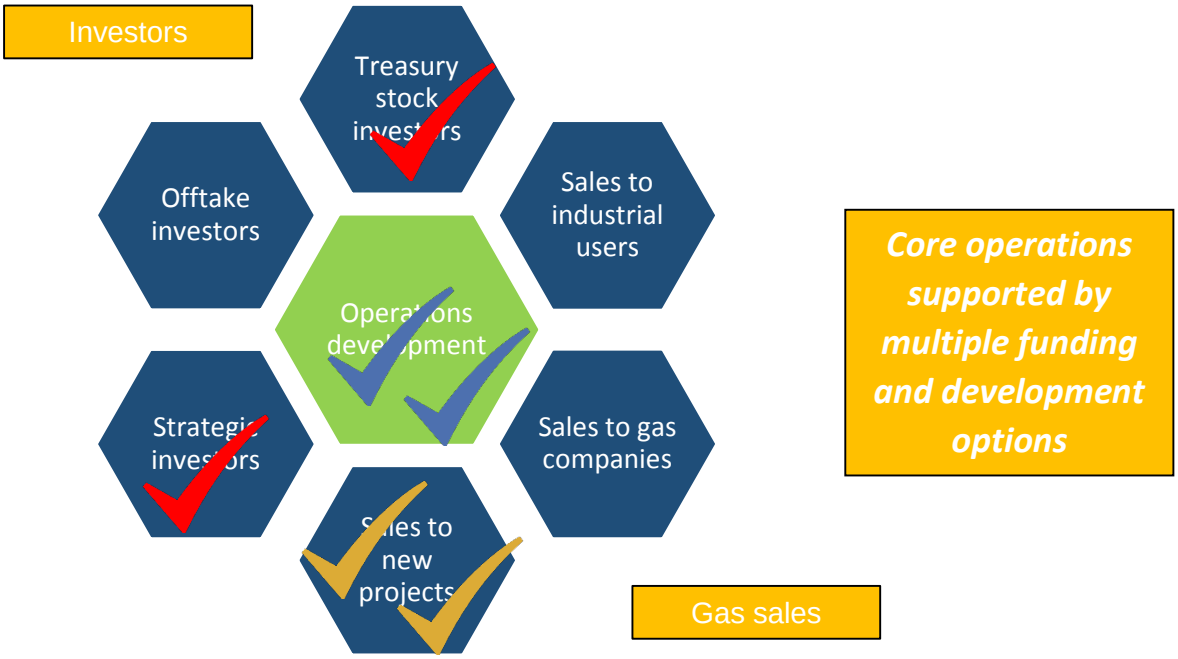
Strategic Fit

The attainment of this Initial JORC Inferred Resource marks another milestone in the achievement of our strategic objectives as first illustrated in the LCK quarterly from June 2015.



The two blue tick represents the locating of significant historic drill data, originally believed to be lost and this attainment of the initial JORC Resources. The two gold ticks represent the heads of agreement with AET Investments and Archer Exploration to develop a chemical/fertilizer facility and a magnesia project respectively. The two red ticks represents the recent announcement of the strategic advisory agreement with EAS Advisors LLC and the sale of some treasury stock to investors.

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About Leigh Creek Energy

Leigh Creek Energy Limited (LCK) is an emerging gas company focused on developing its Leigh Creek Energy Project (LCEP), located in South Australia. The LCEP will produce high value products such as methane and fertiliser from the remnant coal resources at Leigh Creek utilising In Situ Gasification technologies, and will provide long term growth and opportunities to the communities of the northern Flinders Ranges and South Australia. The Company is committed to developing the LCEP using a best practice approach to mitigate the technical, environmental and financial project risks to as low as can be reasonably achieved.

Competency Statement

The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Warwick Smyth of GeoConsult Pty Ltd. Mr Smyth is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists, who has more than 25 years' experience in the field of activity being reported. Mr Smyth has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves". Mr Smyth consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Leigh Creek Energy Ltd
PEL650 - Leigh Creek Energy Project

Geological and Modelling Report
JORC Resource Estimation
Project Assessment

Date: December 2015
Principal Geologist: Warwick Smyth
Modelling Geologist: Adrian Buck
Senior Geologist: David Kingsford

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Executive Summary

Leigh Creek Energy Limited (LCK) commissioned GeoConsult Pty Ltd in November 2015 to review the LCK project to provide definition of potential exploration targets. The project is located 240km north-northeast of the township of Port Augusta in South Australia. Existing rail system connects the project to power stations outside Port Augusta, on the eastern side of the Spencer Gulf. Five small discrete Late Triassic basins spread over 20 km make up the Leigh Creek Coalfield. The project area is within the Telford Basin, which has dimensions of 7.5km x 4.5km, and contains up to 1500m of sequence. The coal is found in three series; 1) Upper, 2) Main, 3) Lower.

The project is contained in petroleum exploration licence PEL 650, is approximately 93.4km^2 in area and is 100% owned by Leigh Creek Energy Limited (LCK). Conventional Opencut Coal Mining of the project, by Alinta Energy concluded in November 2015. The right to mine at Leigh Creek is limited to a person who operates or will operate the Northern Power Station at or near Port Augusta. The Leigh Creek Coal Field is excluded from the Mining Act of 1971, and was reserved for mining through proclamation by the Governor of South Australia. Leigh Creek Energy has the rights to a Petroleum Production Licence under which In Situ Gasification (ISG) extraction is entitled.

A mine site dataset was provided by Alinta to Leigh Creek Energy for the project area. The data comprised previous deposit technical reports, data for 6137 drillholes, 65 drillholes with LAS, 211 drillholes with hardcopy wireline geophysics, 7 drillholes with coal quality analyses, 4 2D seismic lines and mine survey. Additional information on the project area was sourced from GSA Coal Geology publications and conference proceeding. Two site investigations were completed as part of the Resource estimation process. The stratigraphic control for the Resource model was based on 1432 drillholes in the upper series coal seams and 3385 drillholes in the main and lower series coal seams. Re-interpretation of the seismic was completed to provide top of coal, fault control and supported coal seam continuity across the deposit.

This Inferred Resource and Exploration Targets estimation has been carried out over the Project Area, and reported in accordance with the JORC code, 2012 edition. A Resource checklist (JORC – Table 1), specifying the status of the geological database and model, Resource limits and limitations and estimation procedures is attached as an Appendix.

The estimate is based on:

- A minimum seam thickness of 2m.
- A maximum stone parting thickness of 1m.
- ISG Resources were limited to a minimum overburden thickness of 200m.
- Opencut Exploration Targets were limited to a maximum overburden thickness of 200m.
- Opencut Exploration Targets were limited to a base of weathering grid model.
- A fixed Relative Density of 1.4, was applied for the Resource Estimation.
- Points of observation spacing of 4km, (1km past the last point) were used in the estimation where geological correlation supported lateral continuity.
- Areas associated with major faulting located on the south western basin edge (defined by seismic) have been excluded from Q and V Seam working section Resources. No faulting exclusions were applied from faults observed in pit mapping as full seam offsets were not observed.

The table below summarises the results of the Resource estimate. The Resource blocks used are summerised in the figure below.

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TABLE 1 INFERRED RESOURCE ESTIMATE

Tenement Block	Working Section	Thickness (m)	Depth (m)	Inherent Moisture (ad%)	Ash (ad%)	Volatiles (ad%)	Fixed Carbon (ad%)	Density (RD)	Area (ha)	Volume (m)	Tonnage (Mt)
PEL650 – ISG WS-G Block 1	F G1-G2-H1	2.0-16.0 Av. 7.1	200-366 Av. 276	15.2-17.1 Av. 15.8	6.2-20.6 Av 10.8	23.9-29.5 Av. 27.7	33.6-47.5 Av. 42.9	1.4	159	11,300,000	15.8
PEL650 – ISG WS-G Block 2	F G1-G2-H1	2.0-7.1 Av. 3.68	200-301 Av. 245	17.1-17.8 Av. 17.7	11.6-12.8 Av 12.6	27.8-27.9 Av. 27.9	41.4-42.2 Av. 41.6	1.4	24	900,000	1.3
PEL650 – ISG WS-I1 Block 1	I1	2.0-6.3 Av. 3.0	200-392 Av. 295	*	*	*	*	1.4	204	6,140,000	8.5
PEL650 – ISG WS-K2 Block 1	K2	2.0-6.7 Av. 3.3	200-413 Av. 307	*	*	*	*	1.4	301	9,970,000	13.9
PEL650 – ISG WS-Q Block 1	Q1-Q2-Q3	2.0-29.9 Av. 15.97	200-831 Av. 477	20.9-23.0 Av. 22.5	11.0-11.2 Av 11.1	24.9-25.1 Av. 24.9	40.9-42.3 Av. 41.2	1.4	1069	170,800,000	239
PEL650 – ISG WS-V Block 1	V1-V2-V3-V4	2.0-13.7 Av. 5.4	201-866 Av. 517	18.4-18.8 Av. 18.4	15.9-17.4 Av. 16.0	25.2-25.4 Av. 25.3	37.0-37.8 Av. 37.7	1.4	990	52,800,000	74
PEL650 – ISG WS-W1 Block 1	W1	2.0-5.3 Av. 3.4	292-870 Av. 527	*	*	*	*	1.4	503	17,200,000	24.1
ISG - Project-Total											**376.6**

Table – Inferred Resource Estimation – December 2015

TABLE 1 EXPLORATION TARGET ESTIMATE

Tenement Block	Working Section	Thickness (m)	Depth (m)	Inherent Moisture (ad%)	Ash (ad%)	Volatiles (ad%)	Fixed Carbon (ad%)	Density (RD)	Area (ha)	Volume (m)	Tonnage (Mt)
PEL650 – Opencut WS-G Block 1	F G1-G2-H1	2.2-10.4 Av. 6.1	24.7-200 Av. 114	15.5-17.1 Av. 15.9	8.9-20.6 Av. 14.5	23.9-28.3 Av. 26.3	33.6-44.7 Av. 39.5	1.4	119	7,300,000	10.1-11.1
PEL650 – Opencut WS-G Block 2	F G1-G2-H1	2.0-13.3 Av. 5.7	29.1-200 Av. 130	16.5-17.8 Av. 17.7	10.2-12.8 Av. 12.6	27.8-27.9 Av. 27.9	41.5-43.2 Av. 41.6	1.4	39	2,290,000	3.2-3.5
PEL650 – Opencut WS-Q Block 1	Q1-Q2-Q3	7.0-18.6 Av. 11.0	29.9-200 Av. 119	22.8-22.9 Av. 22.9	11.0-11.1 Av.11.0	24.9-24.9 Av. 24.9	40.9-40.9 Av. 40.9	1.4	39	4,400,000	6.1-6.7
PEL650 – Opencut WS-Q Block 2	Q1-Q2-Q3	5.7-18.9 Av. 13.6	27.8-200 Av. 121	22.7-22.8 Av. 22.8	11.0-11.1 Av.11.0	24.9-24.9 Av. 24.9	40.9-41.1 Av. 41.0	1.4	11	1,460,000	2.0-2.2
PEL650 – Opencut WS-V Block 1	V1-V2-V3-V4	3.6-10.1 Av. 6.2	25.2-102 Av. 55.1	18.4-18.4 Av. 18.4	15.9-15.9 Av. 15.9	25.3-25.4 Av. 25.3	37.7-37.7 Av. 37.7	1.4	8.9	556,000	0.8-0.9
PEL650 – Opencut WS-V Block 2	V1-V2-V3-V4	2.0-19.2 Av. 9.4	25.6-119 Av. 74.8	18.4-18.4 Av. 18.4	15.9-15.9 Av. 15.9	25.3-25.4 Av. 25.3	37.7-37.7 Av. 37.7	1.4	49.9	4,697,000	6.5-7.2
Opencut - Sub-Total											**28.7-31.6**

Table – Exploration Target Estimation – December 2015.

Nb. Seams lacked sufficient Points of Observations spacing to classify as Coal Resources. Targets are conceptual in nature. The potential quantity and quality is conceptual in nature and there has been insufficient exploration to estimate a resource and it is uncertain if further exploration will result in the estimation of a mineral resource

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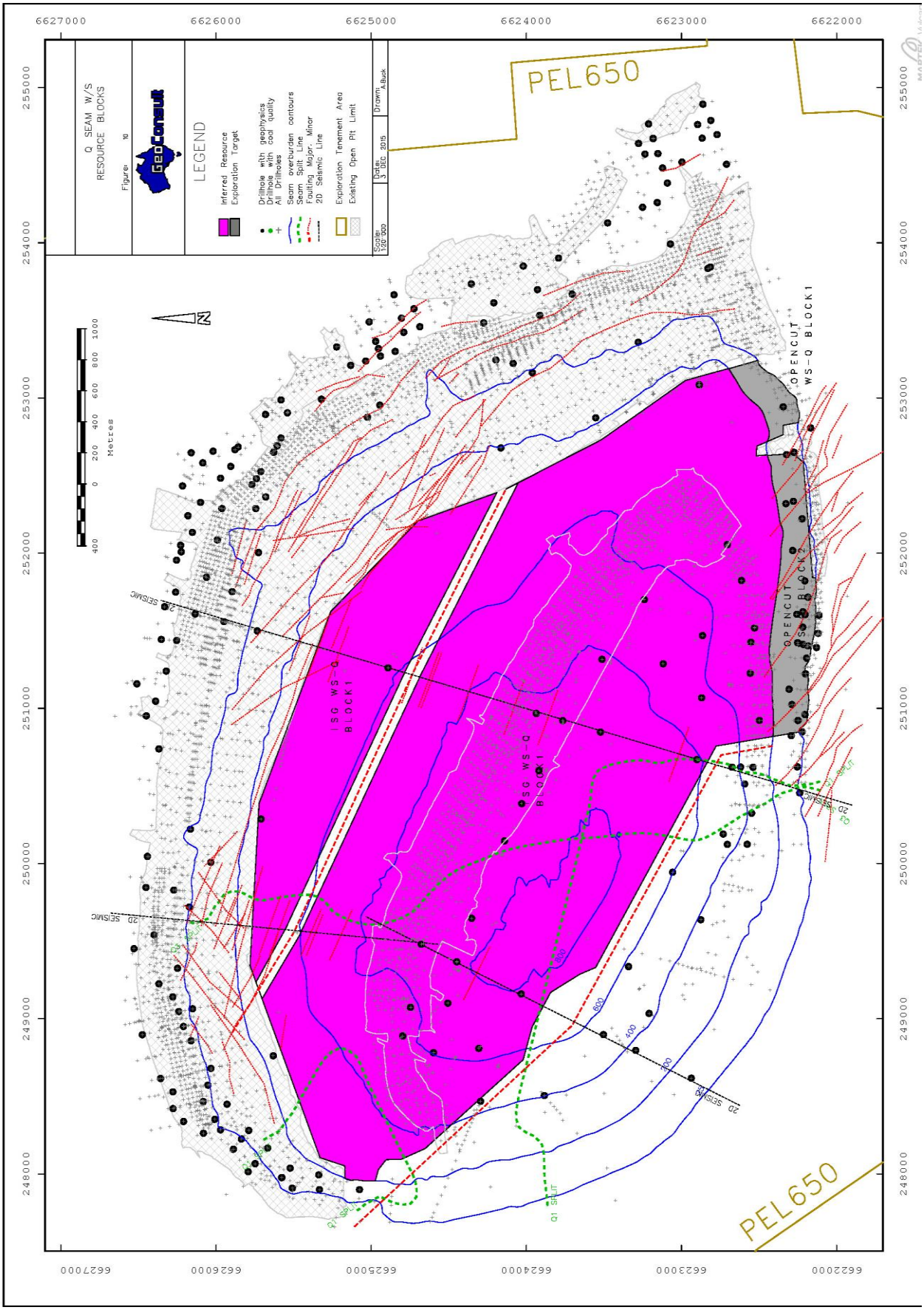

Figure 1 –Resource polygon summary, Main Q-Seam Resource blocks.

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Document Control Record

Document Details:

Authors: Warwick Smyth, Adrian Buck, David Kingsford
Name: Leigh Creek Energy Limited, LCK project Geological-Modelling Report and Exploration Target Estimation.

Change History:

Version	Status	Date	Details of Changes	Author
1.0	Draft	09/11/2015	Background, Scope and Tenure	AB
2.0	Draft	09/11/2015	Geological and exploration summary	AB
3.0	Draft	10/11/2015	Geological database and model assembled	AB
4.0	Draft	03/12/2015	Geological database and model updated, Inferred Resource	AB/DK
5.0	Final	04/12/2015	Inferred Resource and Modelling Report	WS/AB/DK

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Introduction

Leigh Creek Energy Limited (LCK) commissioned GeoConsult Pty Ltd in November 2015 to review the LCK project. The work involved reviewing previous exploration associated with the area, upgrading the LCK database and geological model using historical data to provide definition of potential exploration targets. This report is a summary of the November 2015 geological modelling and exploration targeting project work.

Project Location

The project is located 240km north-northeast of the township of Port Augusta in South Australia.

Existing rail system connects the project to power stations outside Port Augusta, on the eastern side of the Spencer Gulf. Figure 1 shows the location of the project area in relation to other exploration and mining tenure in South Australia.

Figure 2 – Regional location map of project.

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Tenure Information

The Leigh Creek Energy project is comprised of 1 petroleum exploration licence (PEL650). The permit covers an area of approximately 93.4km^2. Table 1 summarizes permit information.

Table 1 – Tenement details for the Project

Project Area	Tenement	Area	Principle Holder	Status
Leigh Creek	PEL650	93.4 sq km	ARP Tri-Energy Pty Ltd (100% owned by LCK)	Granted 18 Nov 2014

The Resource estimated is within Lobe B of PEL 650 (see figure 3) and are 100% owned by Leigh Creek Energy. Leigh Creek Energy currently has access to the site with cooperation from Alinta Energy. A separate site office has been set up near the main access point of the mine away from the mine site office.

The area over PEL 650 is excluded from the Mining Act of 1971. In 1984 the Leigh Creek Coal Field was reserved from certain sections of the Mining Act through proclamation by the Governor of South Australia. Since this proclamation the Leigh Creek Coal Field has not been subject to licensing under the Mining Act, and Mining Tenements cannot be granted over this area. The existing right to mine at Leigh Creek is limited to a person who operates or will operate the Northern Power Station at or near Port Augusta or a person approved by the Minister on the nomination of a person who operates or will operate the Northern Power Station at or near Port Augusta. This is stated in the Electricity Corporations (Restructuring and Disposal) Regulations 2014 and the Electricity Corporations Act 1994. Leigh Creek Energy has the rights to a Petroleum Production Licence under Section 35 of the Act which states;

> (1) Subject to this Act, a person is, on application, entitled to the grant of a production licence for the production of a regulated Resource of a particular kind if—
>
> (a) A regulated Resource exists in the area for which the production licence is to be granted; and
>
> (b) The person holds, or held at the time of the application for the production licence—
>
> (i) An exploration licence or a retention licence over the area for which the production licence is to be granted; or
>
> (ii) A mining tenement under the Mining Act 1971 over the area for which the production licence is to be granted; and
>
> (c) (i) in a case where paragraph (b)(i) applies—the exploration licence authorised exploration for a regulated Resource of the relevant kind or the retention licence was granted for a regulated Resource of the relevant kind;
>
> (ii) in a case where paragraph (b)(ii) applies—the mining tenement authorised operations for exploration for or the recovery of coal and the production licence is to be granted for in situ gasification or coal seam methane production (and other related activities as the Minister considers appropriate); and
>
> (d) Production is currently commercially feasible or is more likely than not to become commercially feasible within the next 24 months.

Under the powers allowed by the Mining Act 1971-1973, on the 14th of February 1974 the town of Leigh Creek was reserved from the operation of the Act through publication in the South Australian Government Gazette

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Under the powers allowed by the Mining Act 1971-1978, on the 22nd June 1978 the new town site was reserved from the operation of the Act through publication in the South Australian Government Gazette1

Under the Mining Act 1971: Section 8, on the 25th of October 1984 the original 1974 town proclamation was revoked and a new proclamation was made for the Leigh Creek Coal Field to reserve the area defined in the Gazette2 from the operation of section 17, and parts 4, 5, 6A, 7 & 8 of the Mining Act 1971. These sections are outline below (as of 1984 when the proclamation was made):

-Section 17: Obligation to pay a royalty to the state
-Part 4: Prospecting for Minerals
-Part 5: Exploration Licence
-Part 6: Mining Leases
-Part 6a: Retention Leases
-Part 7: Prospecting and Mining for Previous Stones
-Part 8: Miscellaneous Purpose Licence

Prior to its closure in November 2015, Alinta Energy took over operations at Leigh Creek from ETSA in 2009, who had been mining Lobe B since 1974. The Leigh Creek project had been supplying coal to the coal fired generated power plant at Port Augusta, also run by Alinta Energy.

1.Gazettal ID 19740214000000
1 Gazettal ID 19780622000000 File Ref 617/73
1 Gazettal ID 19841025000000 File Ref T644

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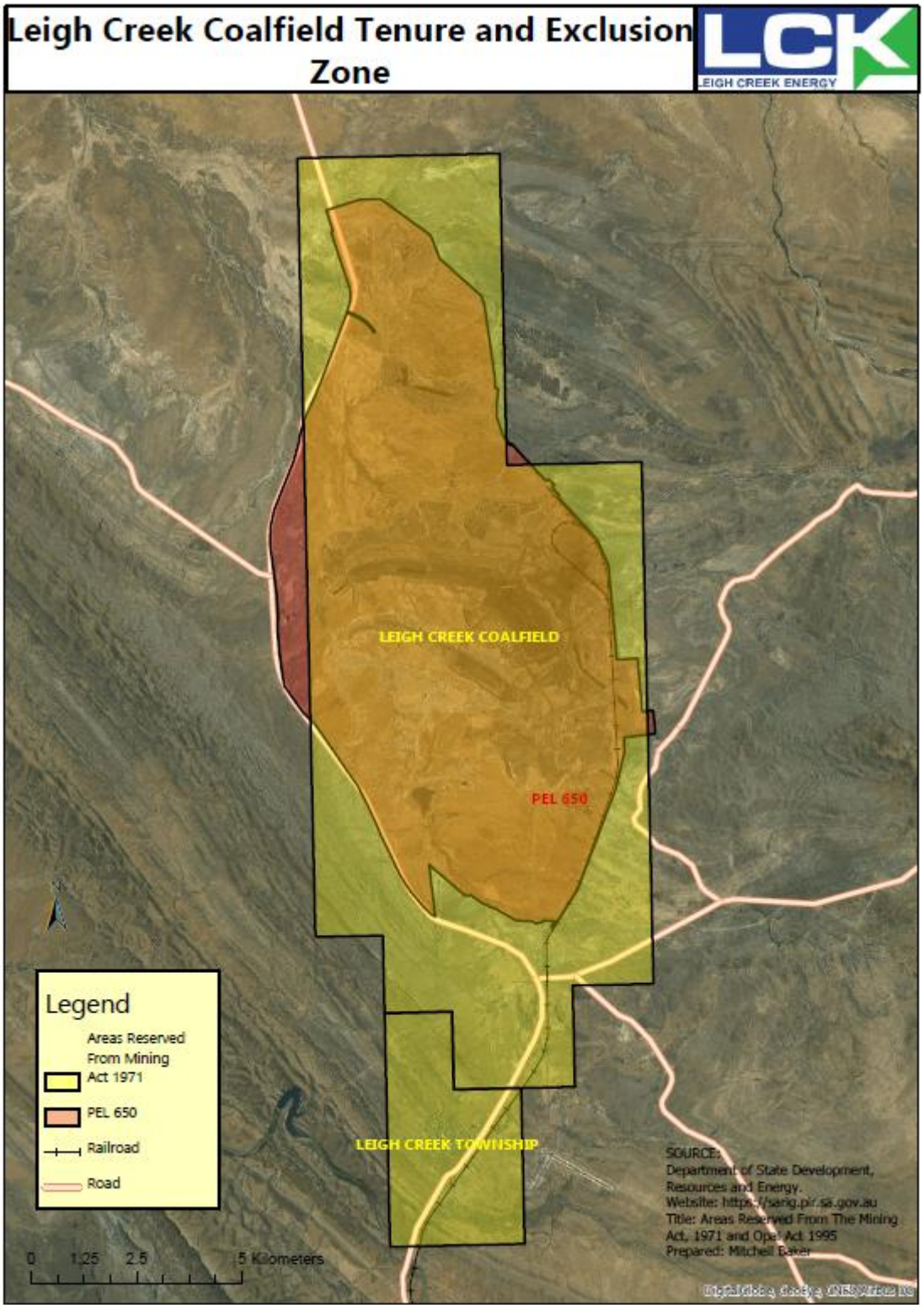

Figure 3 – Regional location map of project. Tenement area (red fill), South Australian Mining Act 1971 Exclusion Area (yellow fill), townships (black dots), rail (black lines). Supplied by LCK

Geology

Five small discrete basins spread over 20 km make up the Leigh Creek Coalfield (Figure 2). The main basins are known as Copley Basin (Lobe A & E), Telford Basin (Lobe B), Lobe C and Lobe D. These are remnants of a broader sedimentary sequence containing Late Triassic age coal seams (220 million years).

The project area is within the Telford Basin, which has dimensions of 7.5km x 4.5km, and contains up to 1500m of sequence. The coal is found in three series; 1) Upper, 2) Main, 3) Lower (Figure 3).

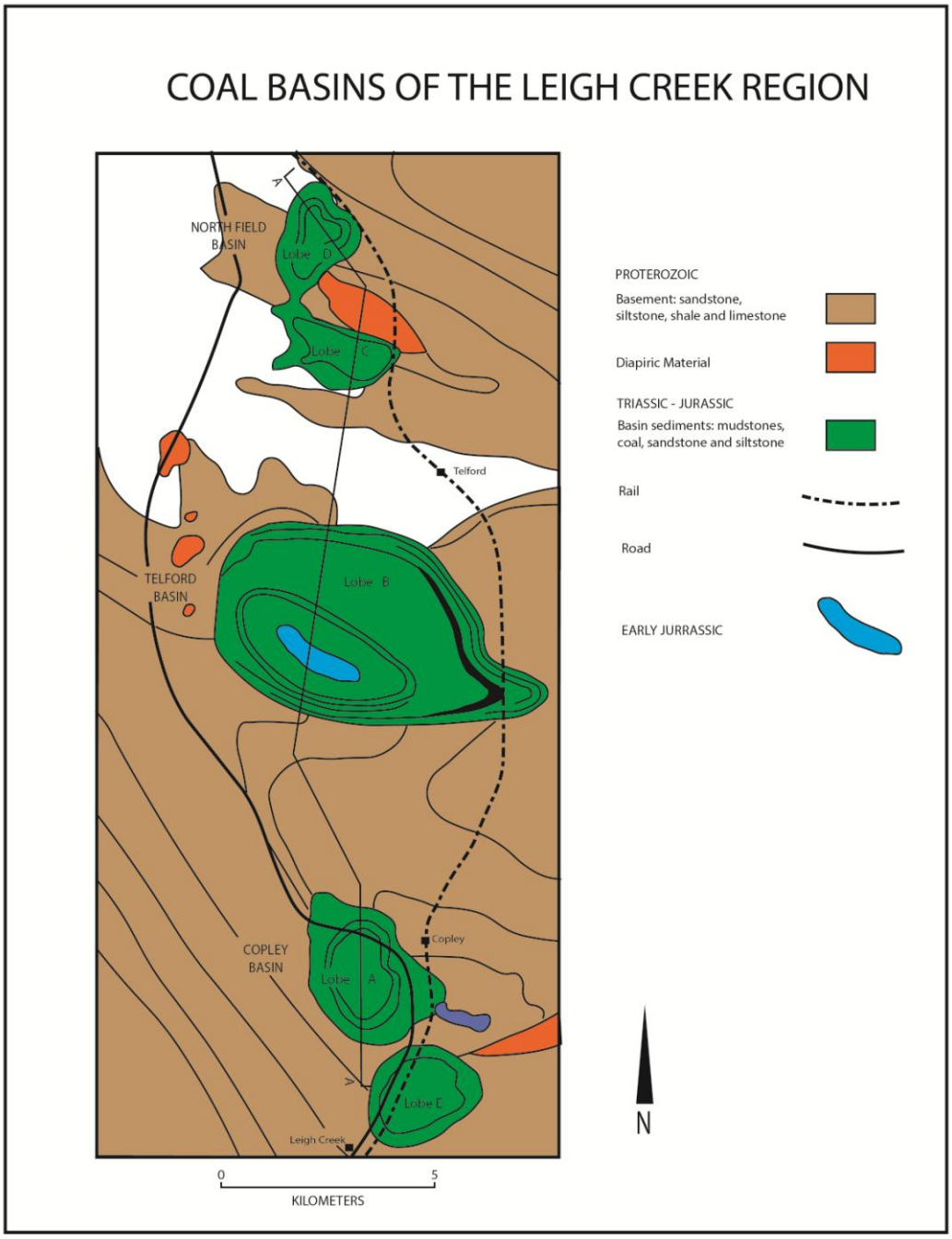

Figure 4 – Regional Geology. Supplied by LCK

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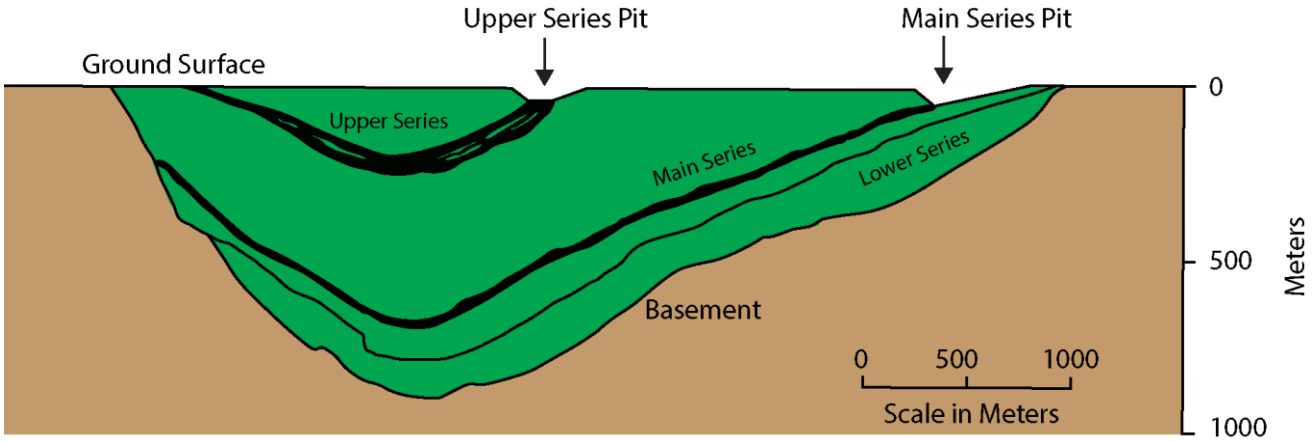

Figure 5 – Leigh Creek Schematic Section. Supplied by LCK

The geological setting, sedimentology and stratigraphy is best described by Murray-Wallace (1983). He said accumulation of the Leigh Creek coal measures occurred within a relatively shallow intramontane basin during the Upper Triassic (Parkin 1953, Johns 1973, Townsend 1975). According to Johns (1973) the separate lobes may represent remnants of a more ubiquitous sedimentary sequence deposited in a freshwater fluvio-lacustrine environment.

Evidence for a freshwater depositional environment is supported by the presence of Unio eyrensis, a freshwater mussel occurring in some of the more lithified, ferruginous-rich sandy-shale beds within the Lower Series overburden. Leighiscus hillsi, a comparatively rare species of fish, is also documented to occur within these sediments (Coats, 1973). Preliminary analysis of plant spores (Playford and Dettmann, 1965) has delimited an Upper Triassic age (Rhaetic) for the basin sediments, although later work (Hos, 1977, 1978) showed that the uppermost part may be Jurassic.
The Triass-Jurassic sequence is preserved within folded Adelaidean rocks resulting from a predominantly brittle deformational event. This comparatively localized example of brittle with associated ductile deformation is likely to have occurred during Early Jurassic times.

Adelaidean sediments locally representing basement to the unconformably overlying Triassic sequence were deposited within the Adelaide 'Geosyncline'.

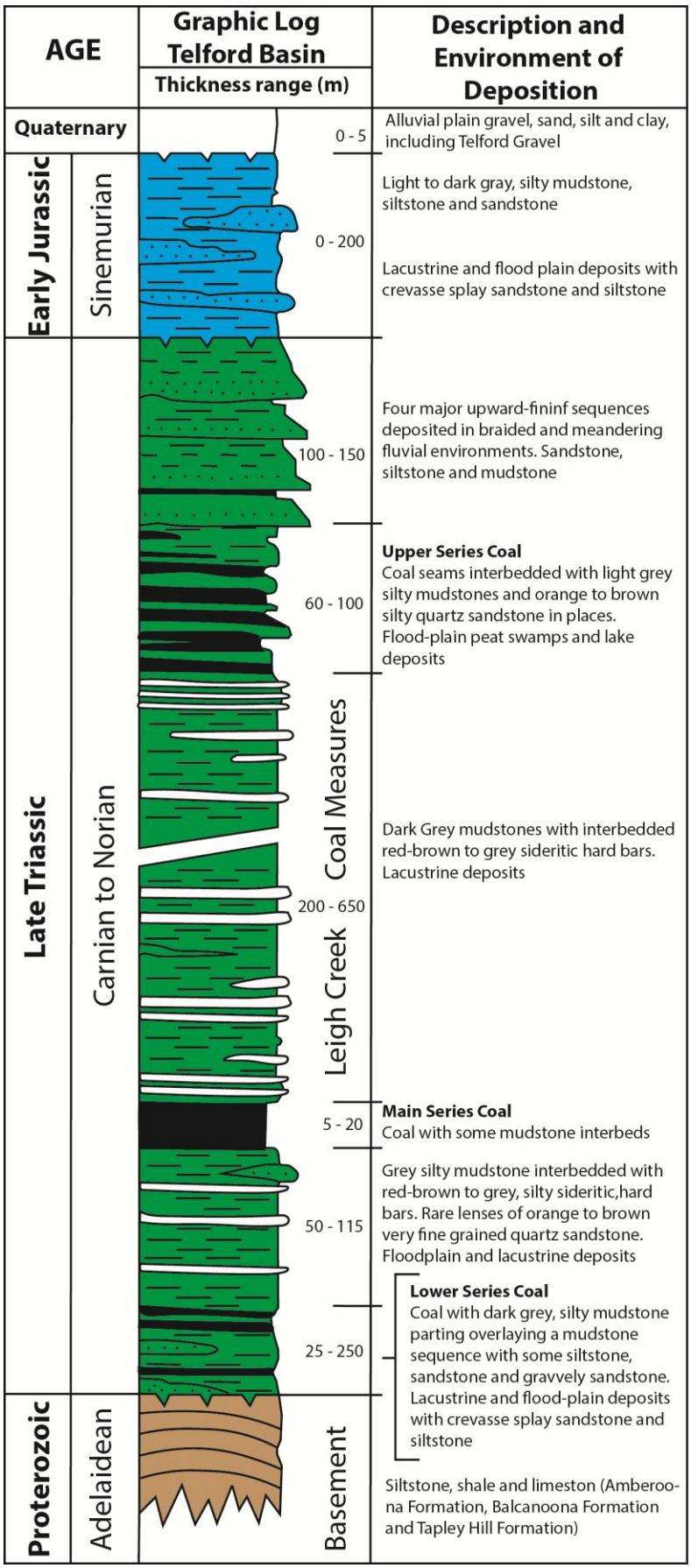

Figure 6 – Leigh Creek Stratigraphic Column – Typical Values. Supplied by LCK

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Site Investigation

Two site investigations were completed as part of the Resource estimation process.

Warwick Smyth (Resource CP) completed an initial visit to the Clients project offices in Adelaide in early November 2015. As part of the initial site investigation, mine plans, cross sections, drillhole information, seismic data and technical report data were reviewed and a list of required data compiled. Meeting and discussions with the project and technical manager's familiar with the deposit were completed.

David Kingsford (Resource Geologist) completed a follow up site investigation to the Leigh Creek mining operation in late November 2015. During the mine site investigation, extra data relating to the mining operations was received and incorporated into the model. A site tour was then undertaken of the opencut mine for the Upper, Main and Lower seam working sections where grab samples were obtained to determine general quality of each of the three working sections (G, Q and V). The core shed was visited and samples examined.

A mine site dataset was provided by Leigh Creek Energy for the project area. The data comprised previous deposit technical reports, drillhole coal seam intersections, LAS, coal quality, seismic, and mine survey. Additional information on the project area was sourced from GSA Coal Geology publications and conference proceeding.

Topography

The topography (DTM) was provided by Leigh Creek Energy for the project area. The surveyed topography represents the ground survey completed by the mine site surveyor in 2014. The surface includes spoil piles and open pits. Surveyed drillhole collars in the geological dataset assembled but were not incorporated into the topographic model, as many lie above or below the current ground surface.

Drillhole Collars

Drillhole collar locations for drillholes were provided by Leigh Creek Energy for the project area. Drillholes in the database were completed over approximately 5 decades, as such the location accuracy of the holes is expected to vary. Recent holes are assumed to have been surveyed by the mine site surveyor, however documentation verifying this is not available. The dataset projection is MGA94 Zone 54.

Geological Mapping

Geological maps and plans were provided by Leigh Creek Energy for the project area. Geological mapping data of the coal basin extents was included in the dataset. Geological contacts, fold axes, and in pit faulting was considered in the construction of the geological model. Geological control from maps was incorporated to establish regional scale trends at the data extents or where drillhole information is sparse.

Lithology Logs

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The coal seam intersection data for 6137 drillholes was provided by Leigh Creek Energy for the project area.

The drillhole dataset was assembled and stored in an ISIS geological database. ISIS is a software package designed to store and model drillhole lithological intersections, geotechnical logs, wireline geophysical traces and analytical sample data. The ISIS database is a component of the Vulcan modelling software.

Drillholes in the database were completed over approximately 5 decades, as such the drilling type intersection reliability of the holes is expected to vary. The drillhole coal seam accuracy was verified by comparison to wireline geophysical density and gamma logs for 56 recent holes across the project area.

Two drillhole groups are present in the dataset; 1) Drillholes intersected in the Upper Series coal seams, 2) Drillholes intersected in the Main and Lower coal seams. A stratigraphic thickness of approximately 500m exists between the Upper and Main sequences and no holes in the dataset intersect the complete sequence. In December 2015 the complete exploration drilling dataset comprised 6137 holes. Of this 1432 holes provide stratigraphic control of the Upper Series coal seams, and 3385 holes provide stratigraphic control of the Main and Lower Series coal seams.

Downhole Geophysics

The wireline geophysical data (LAS) for 65 drillholes was provided by Leigh Creek Energy for the project area. Wireline logging LAS for the project was completed by Borehole Wireline Pty Ltd in the 3000 series drilling campaign. LAS data was reviewed and the accuracy of the drillhole coal seam picks was confirmed.

Hardcopy wireline geophysical data for an additional 211 drillholes is also available for the dataset. Wireline logging hardcopies for the project were completed by ETSA in the 1970's. No digital data from these holes exists however during the site visit in late 2015 a room full of geophysical data tapes was discovered. Leigh Creek Energy was investigating the data contained on these tapes and may be included in further reports.

Seismic

Four 2D seismic lines were provided by Leigh Creek Energy for the project. Obtained in 1978 by ETSA, these lines were acquired to target the coals of the Upper, Main and Lower Series.

Seismic interpretation of the seismic was completed by Velseis in first in July 2015 to target the Main and Lower Series and again in November 2015 when the Upper Series coupled with borehole data created a surface for modelling. Seismic provided top of coal, fault control and supported coal seam continuity across the deposit for the geological model.

Density Data

Density points of observation over coal seams in the project are limited. No relative density or insitu relative density analyses were completed within the 7 coal quality drillholes (216 samples). Future work will include extensive testing of coal quality as well as relative and insitu densities.

A relative density value of 1.4 was applied to the deposit for the purpose of this report. This was derived from reviewing several sources including the site visit by David Kingsford in late November 2015, the

Golders Geotechnical assessment carried out in 1985, assessment of hardcopy and digital wireline logs and initial ARD laboratory values completed by HRL received on 2nd December 2015.

Coal Quality Data

The coal quality analytical results for 7 drillhole were provided by Leigh Creek Energy for the project area.

The coal quality dataset contains 216 samples across all coal bearing intersections in the deposit. Five drillholes intersect the Upper Series coals (3181, 3199, 3204, 3207, 3208) and two drillholes intersect the Main and Lower Series coals (3216, 3218).

Future work will include extensive testing of coal quality as well as relative and insitu densities.

Structure

The Telford Basin is an asymmetrically shaped synclinal basin of Upper Triass-Jurassic age, Figure 4. It is an example of a large scale gentle fold, as the interlimb angle falls between 120° and 180°. The basin covers an area of approximately 25 km2. The asymmetry of the basin is likely to be controlled by a major fault which strikes along the southern perimeter.

Deformation appears to have been predominantly brittle with minor ductile deformation being observed at only one locality in the mine. For convenience two successive deformations are recognized: Dl and D2. The first post-dates deposition of Lower (LC) and Main (MC) Series coals and associated overburden (Townsend, 1978). During this event a series of normal faults, now commonly arranged in an en echelon pattern, were formed although a variety of other orientations are also found. Many of the fault planes are sub-parallel to bedding, whilst others truncate bedding at angles greater than 80°. This series of faults have the greatest displacement.

Reinterpretation of the seismic was completed by Velseis in first in July 2015 to target the Main and Lower Series and again in November 2015 when the Upper Series coupled with borehole data created a surface for modelling. Seismic provided top of coal, fault control and supported coal seam continuity across the deposit for the geological model.

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Geological Model

Introduction

The geological model was produced using the Maptek Pty Ltd Vulcan 3D Software version 8.2. The model comprises structure roof, structure floor and structure thickness.

Stratigraphic Model

Geological (structure and isopach) models were generated using a series of modelling macros. These macros are often complex, but ensure that a clear audit trail of the modelling process exists. The macros also allow focus to be made on particular parts of the modelling sequence without re-running the entire process, thus making error detection and finessing of the model simpler. The macros also aid in file management and housekeeping.

The main estimator used for the geological model is triangulation. This method uses the Delaunay triangulation algorithm. It is the most commonly used technique for modelling sedimentary structures and structural surfaces such as structure roof and floor, structure thicknesses, and for bedded deposits. The results are a unique interpolated surface which honours all of the raw data values. A Trend Surface was used with the modelling process to ensure that the model honours regional structures and features to be applied to the area of interest. A smoothing option was also used to relax the triangle facets for a smooth grid and improved contours. A grid was created over this triangulation, with a grid size side length of 500 x 500m.

The process used to generate the model is as follows:

- **Validation - Mapfile Generation**
  Create mapfiles for each of the modelled horizons. These mapfiles are not used for modelling, but are necessary for database checking and plotting.

- **Unconformable Surface Models:**
  - Weathering Grid Model
    The base of weathering grid model has been generated on depth to base of weathering recorded in drillholes. The depth to base of weathering isopach grids model has been stacked down from the topographic grid model. Formation limit of oxidation (LOX) lines have been generated where the stratigraphic formations cross the base of weathering model.

- **Stratigraphic Formations Models:**
  - Stratigraphic Formation Interpolation – FixDHD Mapfile Generation
    Run the FixDHD interpolator to estimate all formations. This process estimates intersection for plies where holes do not go deep enough, where plies are missing above base of weathering, or where plies have not been logged within a hole – either because that formation does not exist or has not been picked. It also interpolates the individual formations present within an un-logged section of drilling.

- Stratigraphic Formation Isopach Grid Model FixDHD
  The FixDHD mapfiles are used to build "sedimentary" isopach models. This process generates a thickness and midburden grid of each formation horizon. A complete set of FixDHD thickness and midburden grids are produced and denoted with the suffix "Z".

- Formation Reference Surface Grid Model FixDHD
  The FixDHD stratigraphic model has been based on the top of the F seam reference surface for the Upper Series coal and top of the Q seam reference surface for the Main and Lower Series coal. It also incorporates data strings from the regional geological mapping which define the outcrop line and fold axis, major fault location. A first order trend surface is used to control the reference surface model beyond points of observation.

- Formation Structure Roof and Floor Grid Model FixDHD
  Stratigraphic roof and floor models for the rest of the formations are built out from the reference surfaces, using thickness and midburden models. This stacking process generates structure roof and structure floor grids for each formation.

- Formation Depth to Roof and Floor Grid Model FixDHD
  Depths to roof and floor models were calculated from the most up to date digital topographic model acquired by Alinta Energy in 2014. Each of the horizons stratigraphic roof and floor model has been subtracted from topographic surface.

- **Coal Quality Model:**
  - Coal Quality Dataset
    Original coal quality results including depths (corrected and uncorrected), thicknesses, Ash (%), Inherent Moisture (%), Volatile Matter (%) and Fixed Carbon (%) were compiled into an ISIS Vulcan database. No Relative Density data is available in the database so a fixed density of 1.4 was applied.

  - Coal Quality Composites – Mapfile Generation
    Composite Coal Quality mapfiles are generated from the Vulcan DB using the Envisage "Compositing" Module based on the Upper, Main and Lower working section (G_WS, Q_WS and V_WS) correlations in the Vulcan database. This process generates coal quality mapfiles for each working section used for modelling.

  - Coal Quality - Grid Model
    Coal Quality models for the Upper, Main and Lower Series (F, G1, G2, H1, H2, H3, H4, Q1, Q2, Q3, V1, V2) are generated from the laboratory data put into mapfiles with modelling macros, using Vulcan GridCalc module.

- **Working Section Model:**
  A working section model is generated for the G Seam, Q Seam and V Seam based on maximum parting thickness of stone bands of 1m.

  Starting with the G Seam working section, F was added to the top of the G1 when F.MD was less than the maximum parting thickness of 1m. G2 was added to the bottom when G1.MD was less than the maximum parting thickness of 1m. H1 was added to the bottom when G2.MD was less than the maximum parting thickness of 1m.

With the Q Seam working section, Q1 was added to the top of the Q2 when Q1.MD was less than the maximum parting thickness of 1m. Q3 was added to the bottom when Q2.MD was less than the maximum parting thickness of 1m.

With the V Seam working section, V1 was added to the top of the V2 when V1.MD was less than the maximum parting thickness of 1m. V3 was added to the bottom when V2.MD was less than the maximum parting thickness of 1m. V4 was added to the bottom when V3.MD was less than the maximum parting thickness of 1m.

Areas where the seams have been included in the working sections are defined by the respective, .MD split lines. Working section grids were generated from automated scripts as well as from manually derived and verified points.

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Resource Estimation

JORC Code 2012 Requirements

The JORC Code 2012 provides minimum standards for public reporting of Resources and Reserves to the investment community. For coal deposits, the JORC Code 2012 is supplemented by the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves (referred to as "the Guidelines").

The Code and the Guidelines provide a methodology which reflects best industry practice to be followed when estimating the grade and quantity of Mineral Resources and Reserves. In this it is considered that the Coal Guidelines provide a suitable framework for oil shale based on similarities between deposit styles.

A Mineral Resource is defined as that portion of a mineral deposit in such form and quantity that there are reasonable prospects for economic extraction. The location, quantity, grade, geologic characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are subdivided into three categories:

- Measured: for which quantity and grade can be estimated with a high degree of confidence. The level of confidence is such that detailed mine plans can be generated, mining and beneficiation costs, and ore processing yields and grade specifications, can be determined;
- Indicated: for which quantity and grade can be estimated with a reasonable degree of confidence. The level of confidence is such that mine plans can be generated and likely product grade can be determined; and
- Inferred: for which quantity and grade can be estimated with a low degree of confidence. The level of confidence is such that mine plans cannot be generated.

Resources are estimated based on information gathered from Points of Observation. Points of Observation include surface or underground exposures, bore cores, geophysical logs, and/or drill cuttings in non-cored boreholes. It should be noted that Points of Observation for grade estimation need not necessarily be used for grade estimation.

The estimate is calculated using the area, thickness and density of the formation. The basis from which the density is derived should be clearly stated. It is important to note that in-situ density is not the same as the density reported by the standard laboratory measurement.

The Guidelines suggest distances between Points of Observation that should be used when estimating Resources as follows:

- Measured: Points of Observation no more than 500 metres apart;
- Indicated: Points of Observation no more than 1,000 metres apart; and
- Inferred: Points of Observation no more than 4,000 metres apart.

The Guidelines stress that these distances are only a broad guideline. If the formations in the deposit are faulted, intruded, split, lenticular, or have significant lateral variations in thickness or grade, then the distance between Points of Observation should be decreased at the discretion of the Competent Person.

The table of estimation of Resources should be accompanied by a report, and a statement by the Estimator that the Resources comply with the JORC Code. The Estimator should state their qualifications and experience.

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Inferred Resource Estimation – December 2015

This Inferred Resource estimation has been carried out over the Project Area, and reported in accordance with the JORC code, 2012 edition. A Resource checklist (JORC – Table 1), specifying the status of the geological data, status of the geological database and model, Resource limits and limitations and estimation procedures is attached in Appendix A.

The estimate is based on:

- A minimum seam thickness of 2m was applied.
- A maximum stone parting thickness of 1m was applied.
- ISG Resources were limited to a minimum overburden thickness of 200m.
- A fixed Relative Density of 1.4, was applied for the Resource Estimation.
- Points of observation spacing of 4km, (1km past the last point) were used in the estimation where geological correlation supported lateral continuity.
- Areas associated with major faulting located on the south western basin edge (defined by seismic) have been excluded from Q and V seam working section Resources. No faulting exclusions were applied from faults observed in pit mapping as full seam offsets were not observed.

Table 3 below summarises the results of the Resource estimate. The Resource blocks used are shown in Figures 9-14 and Appendix B.

TABLE 2

Tenement Block	Working Section	Thickness (m)	Depth (m)	Inherent Moisture (ad%)	Ash (ad%)	Volatiles (ad%)	Fixed Carbon (ad%)	Density (RD)	Area (ha)	Volume (m)	Tonnage (Mt)
PEL650 – ISG WS-G Block 1	F G1-G2-H1	2.0-16.0 Av. 7.1	200-366 Av. 276	15.2-17.1 Av. 15.8	6.2-20.6 Av 10.8	23.9-29.5 Av. 27.7	33.6-47.5 Av. 42.9	1.4	159	11,300,000	15.8
PEL650 – ISG WS-G Block 2	F G1-G2-H1	2.0-7.1 Av. 3.68	200-301 Av. 245	17.1-17.8 Av. 17.7	11.6-12.8 Av 12.6	27.8-27.9 Av. 27.9	41.4-42.2 Av. 41.6	1.4	24	900,000	1.3
PEL650 – ISG WS-I1 Block 1	I1	2.0-6.3 Av. 3.0	200-392 Av. 295	*	*	*	*	1.4	204	6,140,000	8.5
PEL650 – ISG WS-K2 Block 1	K2	2.0-6.7 Av. 3.3	200-413 Av. 307	*	*	*	*	1.4	301	9,970,000	13.9
PEL650 – ISG WS-Q Block 1	Q1-Q2-Q3	2.0-29.9 Av. 15.97	200-831 Av. 477	20.9-23.0 Av. 22.5	11.0-11.2 Av 11.1	24.9-25.1 Av. 24.9	40.9-42.3 Av. 41.2	1.4	1069	170,800,000	239
PEL650 – ISG WS-V Block 1	V1-V2-V3-V4	2.0-13.7 Av. 5.4	201-866 Av. 517	18.4-18.8 Av. 18.4	15.9-17.4 Av. 16.0	25.2-25.4 Av. 25.3	37.0-37.8 Av. 37.7	1.4	990	52,800,000	74
PEL650 – ISG WS-W1 Block 1	W1	2.0-5.3 Av. 3.4	292-870 Av. 527	*	*	*	*	1.4	503	17,200,000	24.1
ISG - Project-Total											**376.6**

Table 3 – Inferred Resource Estimation – December 2015

Table 3 states the resources calculated based on The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (the JORC Code). The resources were reported in accordance with the JORC code (2012) lie within PEL650 (Table 2).

The JORC Code determined resources consist of only Inferred Resources. These are based on drillhole separations which approximate 4km and limited coal quality results. The Upper, Main and Lower Series coals are a layered moderate to steep dipping deposit on the outer edges. The in-situ coal is calculated on a dry basis at a fixed density of 1.4 g/cc. Future work will include more detailed RD analysis. The limit of the resources calculated is shown in Appendix B.

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The resource is limited by depth. Resources from surface to 200m are classified as an Open cut, surface gasification resource. Resources deeper than 200m are classified as an Insitu Coal Gasification resource.

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Exploration Targets Estimation – December 2015

This Exploration Target estimation has been carried out over the Project Area, and reported in accordance with the JORC code, 2012 edition. A Resource checklist (JORC – Table 1), specifying the status of the geological data, status of the geological database and model, Exploration Targets limits and limitations and estimation procedures is attached in Appendix A.

The estimate is based on:

- A minimum seam thickness of 2m was applied.
- A maximum stone parting thickness of 1m was applied.
- Opencut targets were limited to a maximum overburden thickness of 200m.
- Opencut targets were limited to a base of weathering grid model.
- A fixed Relative Density of 1.4, was applied for the Resource Estimation.
- Points of observation spacing of 4km, (1km past the last point) were used in the estimation where geological correlation supported lateral continuity.
- Areas associated with major faulting located on the south western basin edge (defined by seismic) have been excluded from Q and V seam working section Exploration Targets. No faulting exclusions were applied from faults observed in pit mapping as full seam offsets were not observed.

Table 3 below summarises the results of the Exploration Target estimate. The Exploration Target blocks used are shown in Figures 9-14 and Appendix B.

TABLE 4

Tenement Block	Working Section	Thickness (m)	Depth (m)	Inherent Moisture (ad%)	Ash (ad%)	Volatiles (ad%)	Fixed Carbon (ad%)	Density (RD)	Area (ha)	Volume (m)	Tonnage (Mt)
PEL650 – Opencut WS-G Block 1	F G1-G2-H1	2.2-10.4 Av. 6.1	24.7-200 Av. 114	15.5-17.1 Av. 15.9	8.9-20.6 Av. 14.5	23.9-28.3 Av. 26.3	33.6-44.7 Av. 39.5	1.4	119	7,300,000	10.1-11.1
PEL650 – Opencut WS-G Block 2	F G1-G2-H1	2.0-13.3 Av. 5.7	29.1-200 Av. 130	16.5-17.8 Av. 17.7	10.2-12.8 Av. 12.6	27.8-27.9 Av. 27.9	41.5-43.2 Av. 41.6	1.4	39	2,290,000	3.2-3.5
PEL650 – Opencut WS-Q Block 1	Q1-Q2-Q3	7.0-18.6 Av. 11.0	29.9-200 Av. 119	22.8-22.9 Av. 22.9	11.0-11.1 Av.11.0	24.9-24.9 Av. 24.9	40.9-40.9 Av. 40.9	1.4	39	4,400,000	6.1-6.7
PEL650 – Opencut WS-Q Block 2	Q1-Q2-Q3	5.7-18.9 Av. 13.6	27.8-200 Av. 121	22.7-22.8 Av. 22.8	11.0-11.1 Av.11.0	24.9-24.9 Av. 24.9	40.9-41.1 Av. 41.0	1.4	11	1,460,000	2.0-2.2
PEL650 – Opencut WS-V Block 1	V1-V2-V3-V4	3.6-10.1 Av. 6.2	25.2-102 Av. 55.1	18.4-18.4 Av. 18.4	15.9-15.9 Av. 15.9	25.3-25.4 Av. 25.3	37.7-37.7 Av. 37.7	1.4	8.9	556,000	0.8-0.9
PEL650 – Opencut WS-V Block 2	V1-V2-V3-V4	2.0-19.2 Av. 9.4	25.6-119 Av. 74.8	18.4-18.4 Av. 18.4	15.9-15.9 Av. 15.9	25.3-25.4 Av. 25.3	37.7-37.7 Av. 37.7	1.4	49.9	4,697,000	6.5-7.2
Opencut - Sub-Total											**28.7-31.6**

Table 4 – Exploration Target Estimation – December 2015

Nb. Seams lacked sufficient Points of Observations spacing to classify as Coal Resources. Targets are conceptual in nature. The potential quantity and quality is conceptual in nature and there has been insufficient exploration to estimate a resource and it is uncertain if further exploration will result in the estimation of a mineral resource

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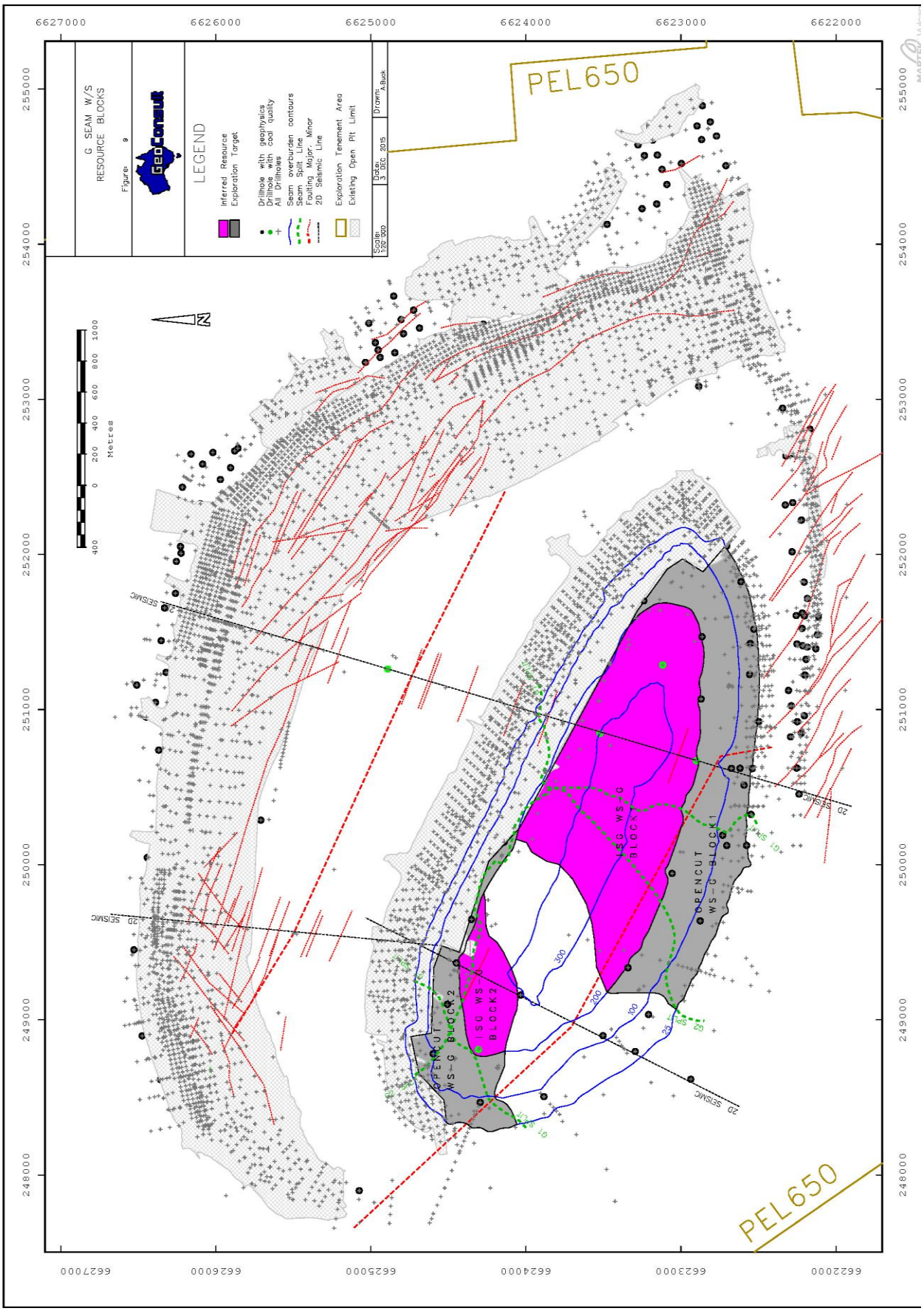

Figure 7 – Inferred Resource and Exploration Target Blocks – Working Section G.

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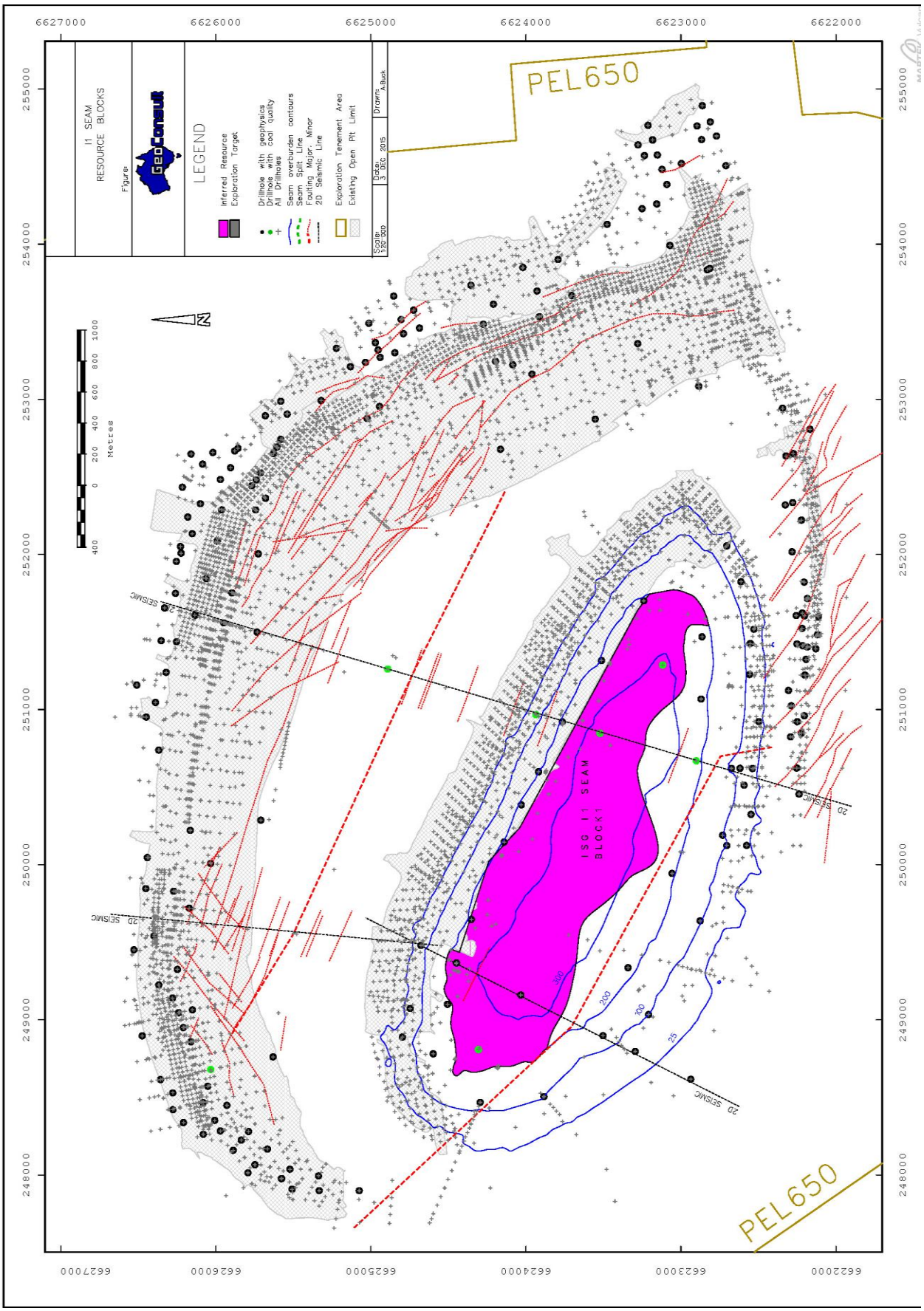

Figure 8 – Inferred Resource and Exploration Target Blocks – I1 Seam.

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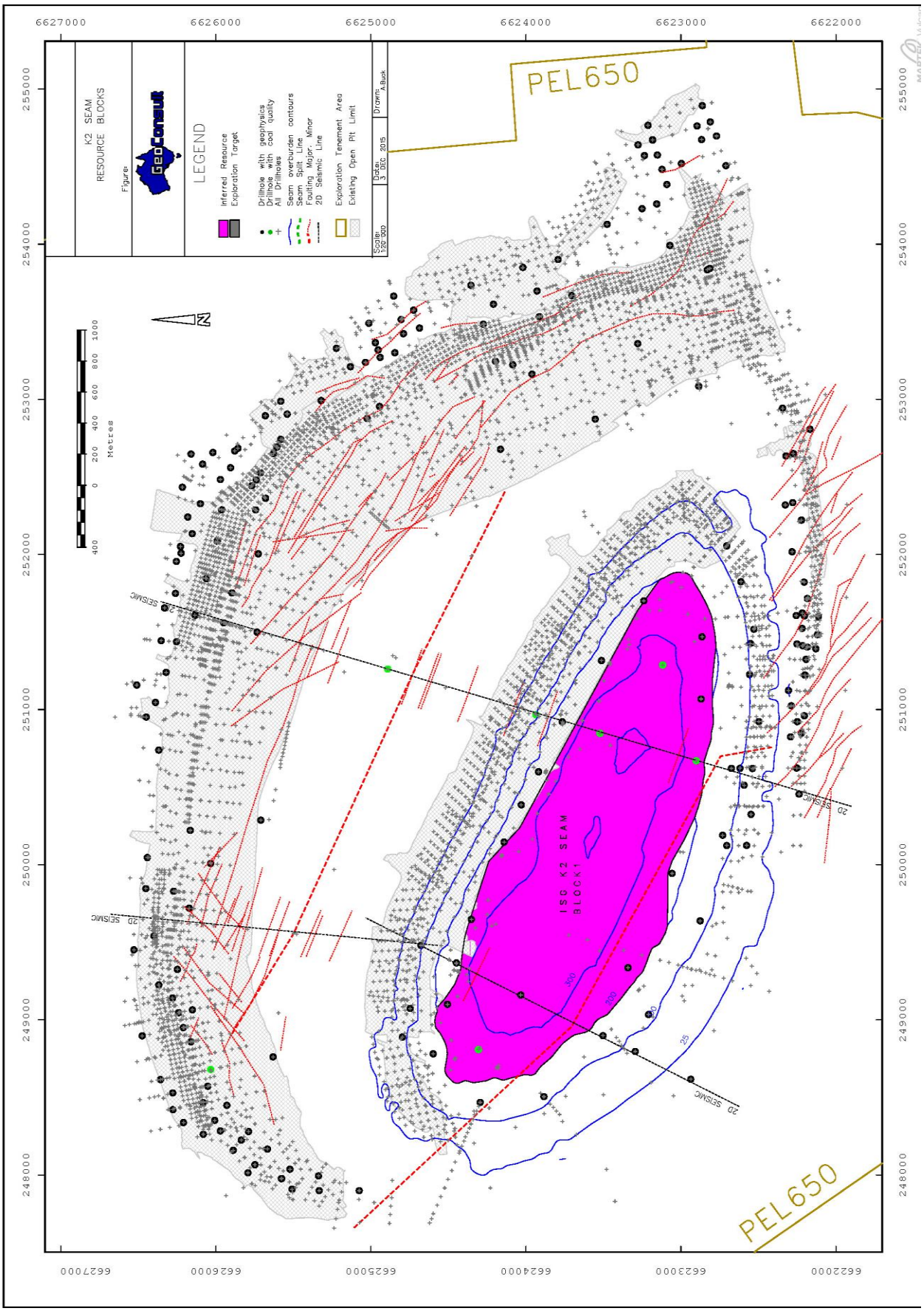

Figure 9 – Inferred Resource and Exploration Target Blocks – K2 Seam.

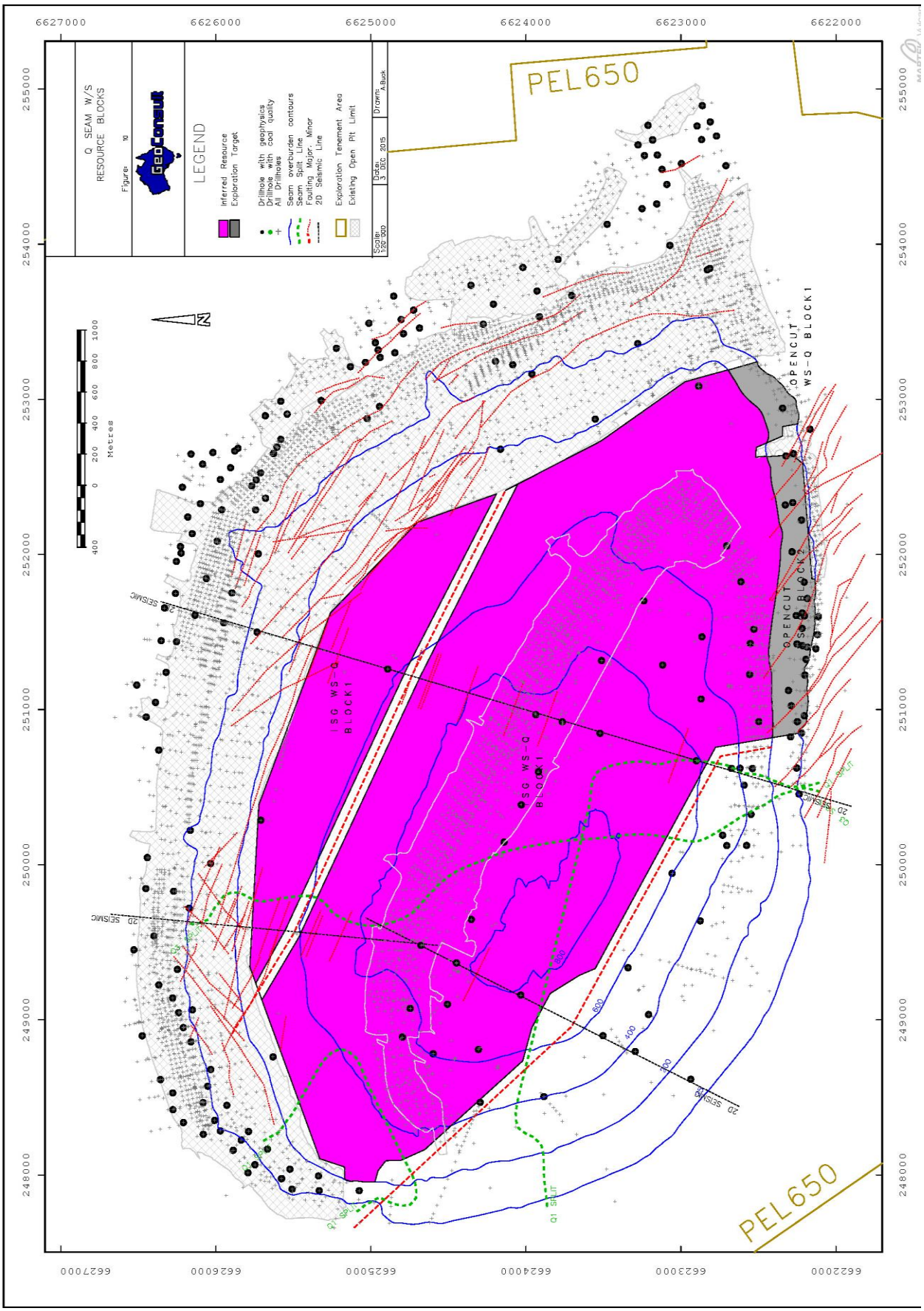

Figure 10 – Inferred Resource and Exploration Target Blocks – Working Section Q.

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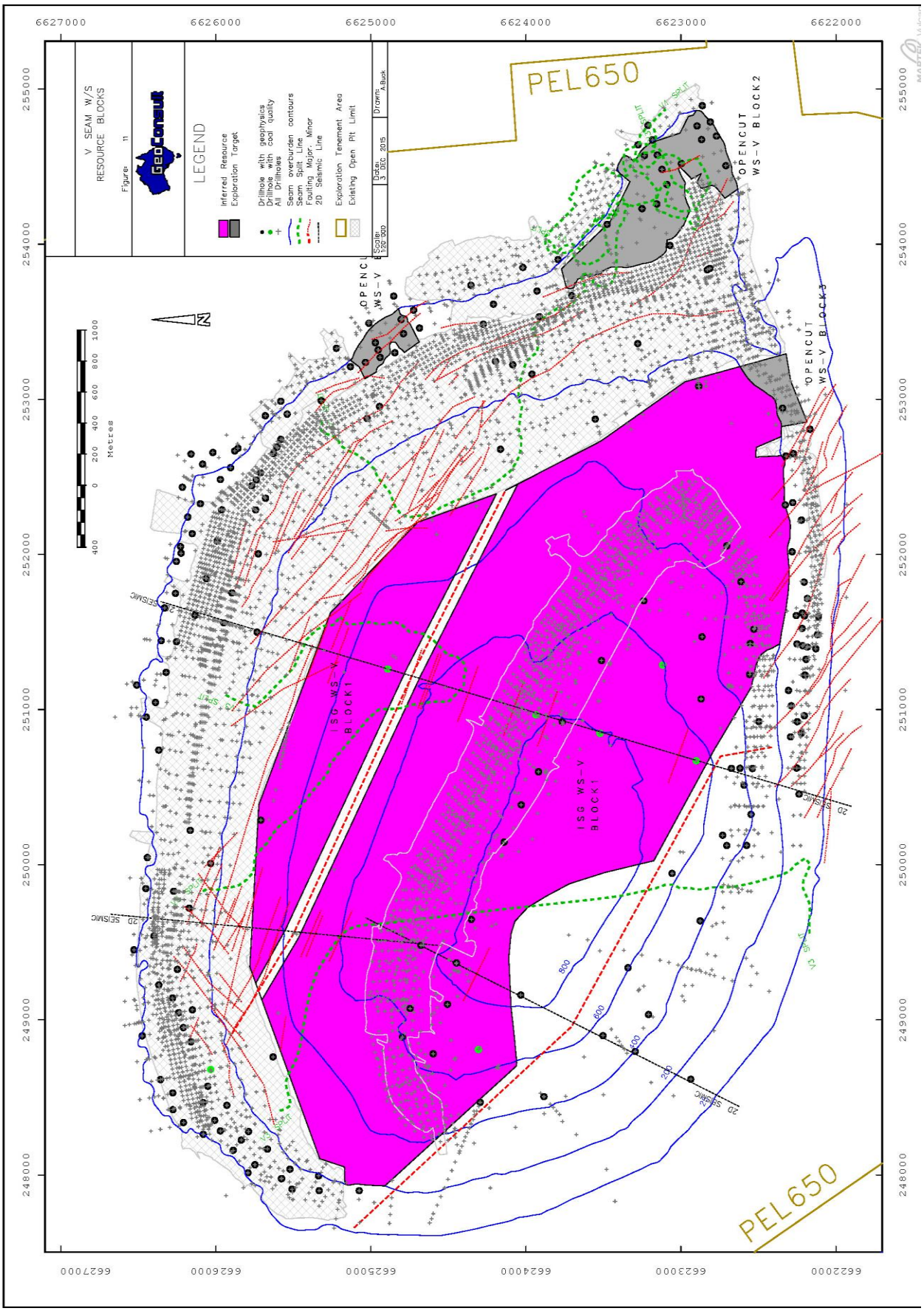

Figure 11 – Inferred Resource and Exploration Target Blocks – Working Section V.

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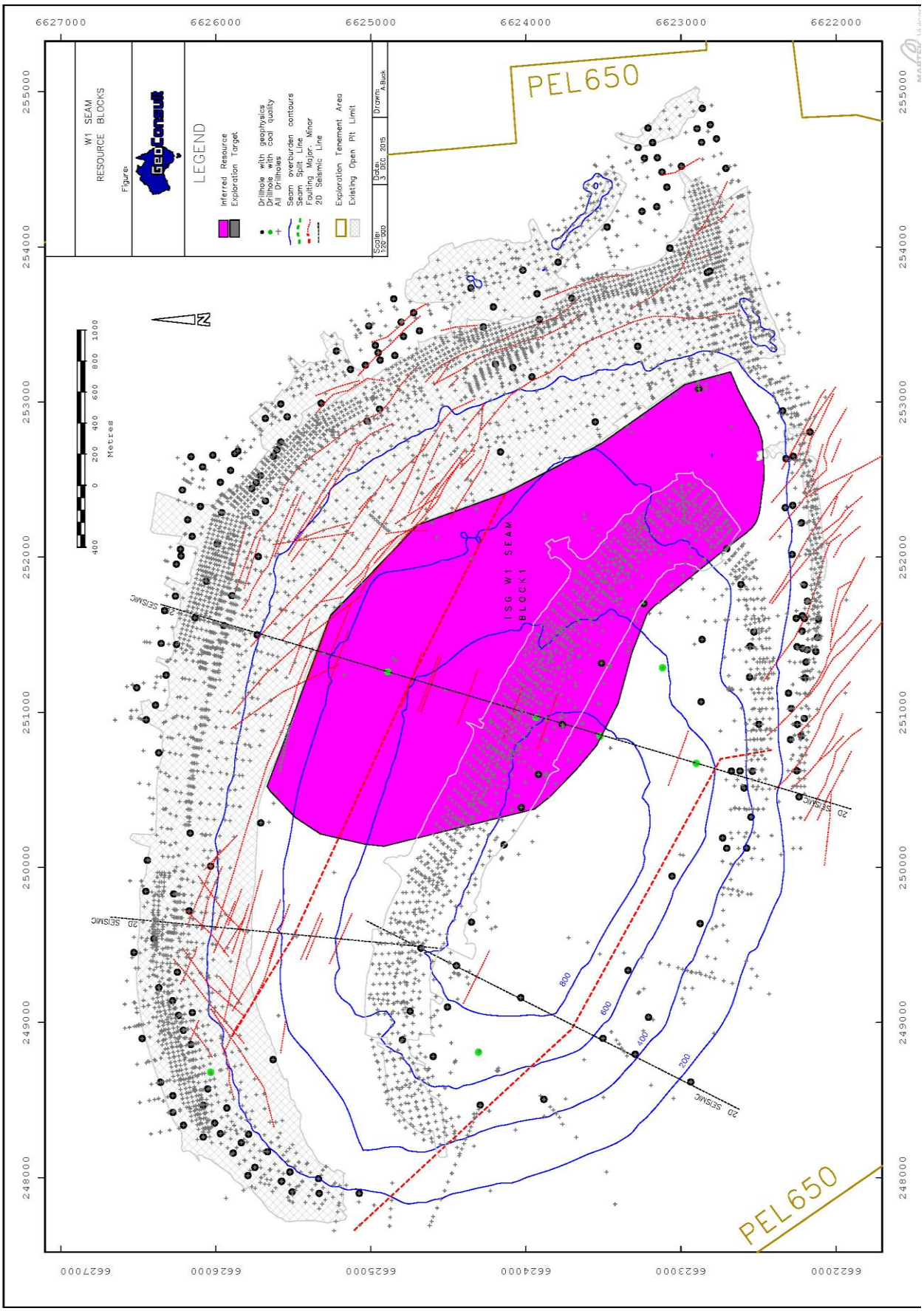

Figure 12 – Inferred Resource and Exploration Target Blocks – Working Section W.

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Resource Conclusions

A high level of confidence can be had in the additional data found, which resulted in the project going from an exploration target to a coal resources estimate. It is highly probable that further drilling will extend confidence in the coal quality and lead to upgrades in the deposit certainty and commerciality.

Qualifications and Basis of Opinion

The information in this statement that relates to *in situ* coal resources potential is based on information compiled by David Kingsford and Adrian Buck of GeoConsult Pty Ltd and reviewed by Warwick Smyth, who is a member of the Australasian Institute of Mining and Metallurgy (CP) Geology; and the Australian Institute of Geoscientists.

Warwick Smyth is a qualified geologist (BSc Geol, Grad Dip AF&I, MAusIMM (CP), MGSA, MAIG), and a Principal Consultant for GeoConsult Pty. Ltd. and has over 25 years experience which is relevant to the style of mineralisation, the type of deposit under consideration and to the activity which has been undertaken to qualify as a Competent Person as defined by the 2012 edition of the Australian Code for Reporting of Coal Resources.

Warwick Smyth of GeoConsult Pty Ltd has no material interest or entitlement, direct or indirect, in the securities of Leigh Creek Energy or the Projects.

GeoConsult has been commissioned to provide geological services to Leigh Creek Energy since November 2015. Fees for the preparation of this report are on a time and materials basis.

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Dated this 7th day of December, 2015

Signature of Qualified Person

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Appendix A – Modelling Database Checklist

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Leigh Creek Energy Ltd

JORC Resource Estimation
TABLE 1 Checklist of Assessment and Reporting Criteria

PEL650 - Leigh Creek Energy Project

Date: December 2015

Principal Geologist: Warwick Smyth
Modelling Geologist: Adrian Buck
Senior Geologist: David Kingsford

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Table 1 Checklist of Assessment and Reporting Criteria

In the context of complying with the Principles of the Code, comment on the relevant sections of Table 1 should be provided on an 'if not, why not' basis within the Competent Person's documentation and must be provided where required according to the specific requirements of Clauses 19, 27 and 35 for significant projects in the Public Report. This is to ensure that it is clear to the investor whether items have been considered and deemed of low consequence or have yet to be addressed or resolved.

As always, relevance and Materiality are overriding principles that determine what information should be publicly reported and the Competent Person must provide sufficient comment on all matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources or Ore Reserves.

The order and grouping of criteria in Table 1 reflects the normal systematic approach to exploration and evaluation. Criteria in section 1 'Sampling Techniques and Data' apply to all succeeding sections. In the remainder of the table, criteria listed in preceding sections would often also apply and should be considered when estimating and reporting.

> *It is the responsibility of the Competent Person to consider all the criteria listed below and any additional criteria that should apply to the study of a particular project or operation. The relative importance of the criteria will vary with the particular project and the legal and economic conditions pertaining at the time of determination.*
>
> *In some cases it will be appropriate for a Public Report to exclude some commercially sensitive information. A decision to exclude commercially sensitive information would be a decision for the company issuing the Public Report, and such a decision should be made in accordance with any relevant corporations regulations in that jurisdiction. For example, in Australia decisions to exclude commercially sensitive information need to be made in accordance with the Corporations Act 2001 and the ASX listing rules and guidance notes.*
>
> *In cases where commercially sensitive information is excluded from a Public Report, the report should pro- vide summary information (for example the methodology used to determine economic assumptions where the numerical value of those assumptions are commercially sensitive) and context for the purpose of informing investors or potential investors and their advisers.*

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JORC TABLE 1
Section 1 Sampling Techniques and Data
(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code 2012 Explanation	Project Details
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	217 Core samples over 7 boreholes have been analysed for raw proximate coal analysis by AMDEL Adelaide and drilled by Alinta Energy in 2013. Analysis included Ash, Inherent Moisture, Volatile Matter, and Fixed Carbon. Relative Density data was not made available in these data sets. Unsampled stone within the Leigh Creek Project area has been given an estimated stone analysis based on similar material within the section typical for the deposit. Three face grab samples taken in November 2015 from the three mineable horizons were taken to be analysed at GeoConsults NATA Accredited Laboratory. The results of these samples are ongoing. All coal and stone within the seam has been composited to reflect the ISG and OC ISG working section. A fixed relative density (RD) of 1.4 was used over the Leigh Creek Project area based on wireline density and limited 2015 grab sample laboratory analysis.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Boreholes include open holes, and partially cored drillholes. Available data supplied by ETSA and Alinta Energy shows drillholes over the 50 year minelife that include holes that have been drilled for blasting, LOX holes, holes with detailed lithology, detailed coal quality sampling and stratigraphic holes which intersect all three main coal bearing units. Future drilling is anticipated to be HQ3, 61mm diameter triple tube with detailed coal quality and full wireline logging carried out on all coal. Three face grab samples taken in November 2015 from the three mineable horizons were taken to be analysed at GeoConsults NATA Accredited Laboratory. The results

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Criteria	JORC Code 2012 Explanation	Project Details
		of these samples are ongoing.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Sampling strategy of the Upper, Main and Lower Series through the resource area has generally been lithologically based. Samples have been taken at a scale detailed enough to allow compositing into the correlated Plies. Working section proximate analysis composites were used to assess the resource.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	Historical holes provided by Alinta Energy were lithologically logged and quantitive in nature. Selected holes drilled in the 3000 and 7000 series exploration programs were geophysically logged, with LAS only available for 65 3000 series holes drilled by Alinta Energy in 2013. Typically gamma, density, caliper and verticallity. LCK have recently discovered tape backup geophysical data stored by Alinta and are in the process of having these tapes checked for more Geophysical data. Density logs were used from both LAS and PDF formats. Photographs of the core are thought to exist but have not been provided by Alinta at this stage
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	All core is housed on the LCK site in an undercover coreshed arranged by holeID. Recently, slabbed historical core samples recovered from the Alinta Energy core shed on the Leigh Creek mine site and pit grab samples from the recent mine visit by GeoConsult were sent for analysis (Relative Density, Proximate Analysis) and at the date of this report were not available for inclusion. All samples are received from the field, dried in drying racks then crushed to 11.2mm for testing. Samples are mixed using a rotary splitter (2 passes) to ensure homogenisation and then divided for further analysis. All samples were checked against density logs to

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Criteria	JORC Code 2012 Explanation	Project Details
		ensure the best samples were sent for analysis
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	The selected 3000 series (7 holes) coal quality testing is carried out using AMDEL (Adelaide) laboratories for all tests conducted in 1978. Verticality is recorded for ~500 holes and is applied to the boreholes when making grids with the data in Vulcan. All future testing, including the testing underway, is carried out using NATA accredited laboratories. This covers instrument calibration, standardisation and reporting. To ensure acceptable levels of accuracy are achieved, samples are sent to multiple labs (HRL - NATA 561 and GeoConsult Pty Ltd - NATA 17313) and data is assessed to identify any outliers. Any erroneous results are sent back to the lab for clarification. Standards adopted include Total Moisture (AS1038.1), Ash, Inherent Moisture and Volatile Matter (AS1038.3), Calorific Value (AS1038.5), Total Sulfur (1038.6.3.3), Relative Density (AS1038.21.1.2), Float/Sink (AS4146.1) and Sample Preparation (AS4264.1). Geophysical logging for Alinta was carried out by Borehole Wireline Pty Ltd in 2013 on the selected 65 3000 series holes. This Included Depth, Gamma, Caliper, Long and Short Spaced Density, Sonic and Verticality.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	All results are verified by Leigh Creek Energy and GeoConsult Pty Ltd to ensure sampling in the field and laboratory assay results are without error. Leigh Creek Energy will be carrying out several twinned holes to assess variability in Coal Quality analysis over the mining section and possibly several different core sizes. Data accumulated from the field will be stored on both Leigh Creek Energy and GeoConsult's servers back in

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Criteria	JORC Code 2012 Explanation	Project Details
		Adelaide and Brisbane. Hard copy data is filed out on site in the ETSA/Alinta site office in Leigh Creek. Once data is entered digitally, both the corrected and uncorrected data is emailed back to Leigh Creek Energy in Adelaide for verification where it is copied to the servers. For external review, the data is arranged into a dataroom which is provided to external technical staff and potential JV partners. All drillholes within the resource area were manually checked for coal thickness and correct stratigraphic coding by David Kingsford of GeoConsult. This was done on a working section by working section basis.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	The database supplied by Alinta Energy to Leigh Creek Energy (once checked and verified was sent to GeoConsult for use in the modelling process) consists of a significant number of non Leigh Creek Energy holes (previous coal exploration and production drilling, departmental stratigraphic drillholes) historical drilling collars have been surveyed by internal, licenced surveyors employed by both ESTA and Alinta. Grab samples taken in November 2015 were located using a Garmin 60csx and recorded for sample analysis. Unrecorded and anomalous collar elevations were excluded in the modelling process and will be further scrutinised in further modelling passes. A detailed DTM model (flown by Aerometrex) was acquired in 2014 by Alinta. The Topographic surface for this model and all subsiquent depth surfaces is tied to this Topographic surface. All hole coordinates are recorded in GDA94 - Zone 54.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity*	Drillhole spacing is variable, typically 20m in the mined out sections of the mining area and 1500m in the areas in between the existing pits. 585 drillholes with G Seam

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Criteria	JORC Code 2012 Explanation	Project Details
	appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • *Whether sample compositing has been applied.*	intersections form the basis of the G Working Section and resource estimation, 1639 drillholes with Q Seam intersections form the basis of the Q Working Section and resource estimation and 573 drillholes with V Seam intersections form the basis of the V Working Section and resource estimation. Data spacing is sufficent to establish the degree of geological and grade continuity for a resource with >90% of holes recording stratigraphic data drilled by ETSA and Alinta with 65 holes containing LAS data and a selection of 3000 and 7000 series holes containing hardcopy wireline. Not all holes have Verticality records, ~500 holes are contained in the LAS database that contain Verticality. Samples have been composited using Maptek Vulcan compositing samples menu. The compositing was also manually calculated to cross check.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Data distribution is spread over the whole Copely Basin with extensive drilling undertaken throughout the mine life. Generally the seam dip in the basin is recorded as 18-45 degrees. This makes correcting for verticallity important in this deposit. ~500 holes with verticallity measurements were applied in this model. Of these ~500 holes with verticallity, 65 were completed by Borehole Wireline Pty Ltd in 2013 and the remainder were completed from 1985 - 2000 by a downhole verticality tool with a camera taking a photograph every 5 metres. In July and November 2015, Velseis completed reprocessing of four seismic lines and have provided GeoConsult the interpreted seismic control points to assist in constructing structure surfaces and fault offsets. A top of F surface was used to construct the Upper Series coal seams and a top of Q1 was used to construct the Main and Lower

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Criteria	JORC Code 2012 Explanation	Project Details
		Series coal seams. A 30m fault displacement was identified in the review and the resource is omitted within an area of 50m either side of this fault.
Sample security	• *The measures taken to ensure sample security.*	Samples were taken by mine employees of ETSA and Alinta Energy and sent to AMDEL (Adelaide) for analysis and testing. The results of this analysis were provided to GeoConsult by Leigh Creek Energy and are stored in a Coal Quality database for use in the modelling process.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No external audit has been undertaken. An internal QAQC audit of historic coal quality data was undertaken by ETSA past employees, Leigh Creek personnel and the Competent Person Warwick Smyth. Coal Quality analysis and testing are cross checked against hard copy wireline logs and LAS density logs where available. All drillholes within the resource area were manually checked for coal thickness and correct stratigraphic coding by David Kingsford of GeoConsult. This was done on a working section by working section basis. During the inital site visit, David Kingsford of GeoConsult completed a site audit on coal seam thickness and seam continuation. Fault offsets were also observed. Photographs of the site visit are shown in section 4 of the JORC Resource Estimation - December 2015 in the Site Investigation section.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Explanation	
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical*	Resources estimated are within Lobe B of PEL 650 and are wholey owned by Leigh Creek Energy. Leigh Creek Energy currently have access to the site with cooperation

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Criteria	Explanation	
	sites, wilderness or national park and environmental settings. • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	from Alinta Energy during surface rehabilitation operations. Alinta Energy released their mine rights to Leigh Creek in March 2016 with operations ceasing on the 17th of November, 2015. The Port Augusta Power Stations that it supplies will also cease operations around the 31st of March, 2016. A separate site office has been set up near the main access point of the mine away from the mine site operations office. The following is a statement from Leigh Creek Energy in relation to current tenure. The area over PEL 650 is excluded from the Mining Act of 1971. In 1984 the Leigh Creek Coal Field was reserved from certain sections of the Mining Act through proclamation by the Governor of South Australia. Since this proclamation the Leigh Creek Coal Field has not been subject to licencing under the Mining Act, and Mining Tenements cannot be granted over this area. The existing right to mine at Leigh Creek is limited to a person who operates or will operate the Northern Power Station at or near Port Augusta or a person approved by the Minister on the nomination of a person who operates or will operate the Northern Power Station at or near Port Augusta. This is stated in the Electricity Corporations (Restructuring and Disposal) Regulations 2014 and the Electricity Corporations Act 1994. Leigh Creek Energy has the rights to a Petroleum Production Licence under Section 35 of the Act which states; (1) Subject to this Act, a person is, on application, entitled to the grant of a production licence for the production of a regulated resource of a particular kind if—

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Criteria	Explanation	
		(a) A regulated resource exists in the area for which the production licence is to be granted; and (b) The person holds, or held at the time of the application for the production licence— (i) An exploration licence or a retention licence over the area for which the production licence is to be granted; or (ii) A mining tenement under the Mining Act 1971 over the area for which the production licence is to be granted; and (c) — (i) in a case where paragraph (b)(i) applies—the exploration licence authorised exploration for a regulated resource of the relevant kind or the retention licence was granted for a regulated resource of the relevant kind; (ii) in a case where paragraph (b)(ii) applies—the mining tenement authorised operations for exploration for or the recovery of coal and the production licence is to be granted for in situ gasification or coal seam methane production (and other related activities as the Minister considers appropriate); and (d) production is currently commercially feasible or is more likely than not to become commercially feasible within the next 24 months. Under the powers allowed by the Mining Act 1971-1973, on the 14th of February 1974 the town of Leigh Creek was reserved from the operation of the Act through publication in the South Australian Government Gazette . Under the powers allowed by the Mining Act 1971-1978, on the 22nd June 1978 the new town site was reserved from the operation of the Act through publication in the

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Criteria	Explanation	
		South Australian Government Gazette . Under the Mining Act 1971: Section 8, on the 25th of October 1984 the original 1974 town proclamation was revoked and a new proclamation was made for the Leigh Creek Coal Field to reserve the area defined in the Gazette from the operation of section 17, and parts 4, 5, 6A, 7 & 8 of the Mining Act 1971. These sections are outline below (as of 1984 when the proclamation was made): -Section 17: Obligation to pay a royalty to the state -Part 4: Prospecting for Minerals -Part 5: Exploration Licence -Part 6: Mining Leases -Part 6a: Retention Leases -Part 7: Prospecting and Mining for Previous Stones -Part 8: Miscellaneous Purpose Licence
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Coal exploration by ETSA (Extensive), Alinta (Extensive). Exploration has also been carried out on Lobes A, C, D (Mined out) and E by ETSA.
Geology	• *Deposit type, geological setting and style of mineralisation.*	Five small discrete basins spread over 20 km make up the Leigh Creek Coalfield. The main basins are known as Copley Basin (Lobe A & E), Telford Basin (Lobe B), Lobe C (partially mined) and Lobe D (mined out). These are remnants of a broader sedimentary sequence containing Late Triassic age coal seams (220 million years). The project area is within the Telford Basin, which has dimensions of 7.5km x 4.5km, and contains up to 1000m of sequence. The coal is found in three series; 1) Upper, 2) Main, 3) Lower
Drill hole Information	• *A summary of all information material to the understanding of the exploration*	Alinta Energy provided Leigh Creek Energy a digital drillhole and

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Criteria	Explanation	
	results including a tabulation of the following information for all Material drill holes: • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	verticallity dataset in Spetember 2015. Hardcopy and digital LAS was gathered in the initial site visit by Warwick Smyth in November 2015. This data was compiled by GeoConsult and is currently stored in a Vulcan ISIS database. The database contains all header, lithological, LAS downhole geophysics (inc verticality) and raw coal quality. Detailed information for the boreholes within the Leigh Creek Energy Project area is included as depth to roof (DR) and structure roof (SR) contour plans. All grids and values in the model take into account the borehole information.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Available quality analysies over the intervals have been weighted averaged (thickness and mass provided by Alinta Energy). Analysed RD was not used in the weighted average calculations as it was not available at the time of this report, instead a thickness and mass received weighting was applied.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Working section grids were generated from automated scripts as well as from manually derived and verified points. A top of F seam structure roof surface was used to construct the Upper Series coal seams and a top of Q1 seam structure roof surface was used to construct the Main and Lower Series coal seams. Seams were added to these working sections where midburdens were recorded to be less than 1m. The resulting working section is defined by a series of split lines where the stone midburdens are less than 1m.

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Criteria	Explanation	
		Seismic data acquired in 1978 and reprocessed by Velseis for Leigh Creek Energy in 2015, was used to demonstrate coal bearing formation continuation where Borehole information was absent. Borehole verticality was also applied to ensure accurate seam thicknesses and structure roof.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	See figures included in Appendix B - Geological Modelling Plans Figure 4 – Leigh Creek Schematic Section Figure 5 – Leigh Creek Stratigraphic Column – Typical Values
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	When reported, resource variables are expressed in an average, maximum and minimum to present an unbiased representation of exploration results. Variables reported in this way include depth to roof (DR), relative density (RD - Fixed @1.4), structure thickness (ST), raw ash (AS%), inherant moisture (IM%), volatile matter (VM%) and fixed carbon (FC%).
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	A number of studies has been undertaken to better learn the deposit though the majority of the investigation lies within the exploration drilling. Highwall observations have been taken into account as part of the resource and limit the resource at the top of the highwall. As provided by Alinta Energy, drillhole data including Lithology, LAS and coordinates were provided and are included in this model. Coal Quality is limited at this stage to 7 holes provided to Leigh Creek Energy by Alinta Energy (ETSA drilled the holes in 1978 and samples were sent for analysis to AMDEL (Adelaide)). Golders completed a geotechnical investigation in 1985. The results of this study was used in defining major faults within the Main and Lower Series coals.

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Criteria	Explanation	
		In July and November 2015, Velseis completed a review of four seismic lines and have provided GeoConsult the interpreted seismic control points to assist in constructing structure surfaces. A top of F surface was used to construct the Upper Series coal seams and a top of Q1 was used to construct the Main and Lower Series coal seams.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	LCK's pathway to development of the LCEP comprises the following stages: • Characterisation Phase - Characterisation of the existing environment at LCEP from environmental, geological, geotechnical and hydrogeological perspectives of the site for low risk ISG project development; • Demonstration Phase - Demonstrating ISG at LCEP using a low cost rapid deployment technique to provide environmental and gas quality data to inform environmental authorities and commercial project design and feasibility studies; • Technology Selection Phase - Source or develop commercially viable ISG technology and plan for its commercial implementation at LCEP; and, • Commercial Phase - Conduct engineering design and feasibility studies to support the selected commercial deployment of ISG at LCEP. LCK intends to utilise existing technologies where viable, or develop better techniques where those technologies don't exist or are otherwise unavailable. During the Characterisation Phase significant work will be undertaken including resource drilling, coal quality test work, geotechnical drilling and studies, hydrogeological drilling and studies, gasification test work,

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Criteria	Explanation	
		seismic surveys, environmental baseline studies and engineering studies.

Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	Explanation	
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	The current Leigh Creek Energy exploration database is stored in a Vulcan ISIS database for modelling. The data is stored by hole ID and all data is stored within the database. Validation takes place on the data via manual checks and then validation upon importing into Vulcan to ensure keying errors are rectified. If information needs further QA/QC, the original hole records can be scrutinised to rectify the issue identified. Further data validation also takes place within Vulcan while modelling to ensure no overlapping horizons occur. Once identified the errors can be amended manually. In future, additional data may become available to Leigh Creek Energy from Alinta and this will be integrated into the current model.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	Leigh Creek Energy undertook site visits where GeoConsult was invited to observe the coal insitu and take photographs for reference in November 2015 upon starting the modelling process. Each seam was observed insitu and small pit faults were noted. Three grab samples from the three mineable horizons were taken to be analysed at GeoConsults NATA Accredited Laboratory. Resource Geologist David Kingsford attended site along with Leigh Creek Energy staff Justin Haines, Tom Mehrtens and AECOM Hydrogeologist/Enviromental Consultant Melinda Morris. Major faulting used to limit the Main and

Criteria	Explanation	
		Lower Series resource was observed and noted for further investigation. When site exploration commences, a site is visitby the CP and an exploration supervisor will occur. Activites observed will include: drill rig operations, core markup, lithological logging, sample selection and preparation for analysis, corebox labelling and storage, record keeping particularly in respect to lithology, core run and core loss and ensure samples and core are stored in a suitable environment to ensure they are kept as a record. Site visits will also be used to communicate procedure changes in sampling and upcoming tests on the boreholes. The latest seam correlation and seam sections are also prepared and brought out to site to ensure field staff know the importance of good field data making its way to the model. A site visit will occur every three months during active exploration and runs on the back of a safety audit on the site. CP conducts annual inspections of the site to ensure sampling and ply correlation is carried out according to the stratigraphy.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	The seam correlations within the Leigh Creek Project area were checked against available slimline geophysical logs. Hardcopy geophysical logs including density are available for 211, 3000 and 7000 series holes. LAS data is available for a 65, 3000 series holes and include verticality. Up to end of November 2015, 6137 drillholes were included in the database. Drillhole and Coal Quality data was provided by Alinta (including historical data provided by ex ETSA employees). 29 seam packages were identified

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Criteria	Explanation	
		and correlated across the deposit. Correlation of the seams was undertaken using geophysical logs and historic correlation by mine site Geologists. Modelling is based on stratigraphic units. Split lines where the stone bands in the seam reach >1.0m define the resource in certain areas and can restrict the resource from reaching a minimum working section thickness of 2.0m. Other factors such as depth of overburden (OB) limit the resource in places. This splits the resource into an ISG portion (>200m OB) and an open cut portion (200m OB to existing highwall). A basin wide ash value of 50% was also applied however the resource estimate demonstrates ash values much lower. The Main and Lower seams are limited in the west by a fault structure observed in the seismic interpretation. This was used to cut the resource polygon. The seams are also observed to split and 'shale out' in the south west of this deposit.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Lobe B Deposit is described as a discrete 7.5km x 4.5km basin containing up to 1500m of coal bearing strata. The edges of the basin are steeply dipping with recorded dips in the range of 25-30 degrees for the Upper Series and 20-45 degrees for the Main and Lower Series
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine*	A geological model was created using Vulcan software based on grid models. Grid mesh size was 50m. Structure surfaces were generated using a triangulation, analytical and thickness grids modelled using inverse distance. A fixed RD of 1.4 was used for estimating the resource. Thickness models are based off borehole and seam interpretations from wireline logs in hardcopy and LAS. A grid cell

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Criteria	Explanation	
	production records and whether the Mineral Resource estimate takes appropriate account of such data. • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	size of 50m x 50m was used. Any resource >200m was classified as ISG, anything <200m was classified as an open cut resource for surface gasification. The areas mined out by ETSA and Alinta do not form part of this resource. Over the 50 years of production, approximately 100-110Mt of coal based on a figure obtained by Leigh Creek Energy has been extracted. At this time, oil shale deposits between the Upper and Main series coal packages has not been included in this estimate. Resource Geologists manually checked all holes in the resource areas to ensure the lithological units were recorded and coded correctly to ensure accurate modelling.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Resource tonnages were estimated on laboratory analysed Moisture results undertaken by AMDEL historical laboratory testing and typical values for the coal in this area.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	Leigh Creek Energy and GeoConsult derived a set of parameters at which the resource is estimated. As follows: Maximum of up to 50% raw ash, Minimum seam thickness of 2.0m, Minimum depth of 200m (for ISG Resource) and 25m (for OC ISG Resource) depth of cover and a maximum in seam stone parting of 1.0m. The top of the highwall (100 off set) was used to constrain the resource, not top of coal in the highwall.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of*	The Upper Seam is being targeted for underground extraction via ISG with a small fraction of the resource (OB < 200m) highlighted for Opencut extraction for

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Criteria	Explanation	
	determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	potential on surface gasification. Extraction parameters were considered for the target. The Leigh Creek Coal Mine has been operating for 50 years with the shallow coal exhausted. The mined out areas were taken into account when resourcing. Leigh Creek Energy provided a final Highwall plan as part of the data received from Alinta Energy. The Leigh Creek Energy method of extracting the remaining coal via ISG would open up vast unconventional resources of synthetic fuel and fertilizer.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	All raw coal quality data is stored in the 'lck650.geo.isis' ISIS database under the CQR tab. This dataset contains all analysis data provided to Leigh Creek Energy by ex ETSA employees and Alinta Energy performed on core samples organised by hole and sample number and checked by Resource Geologists to ensure lithology and samples are aligned. Up to the end of November 2015, seven cored holes containing 217 samples have been analysed and tested by AMDEL (1978) and were included in the model. This will be supplimented with further data being supplied by Alinta and Leigh Creek Energy plan to drill in February 2016.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be*	AECOM Hydrogeologist/Enviromental Consultant Melinda Morris visited site along with GeoConsult Resource Geologist David Kingsford and Leigh Creek Energy staff Justin Haines, Tom Mehrtens in November 2015. A hydrogeological survey of the basin is currently being undertaken by AECOM. The results of this study are not currently available and have not been used to limit this resource. Once environmental baseline

Criteria	Explanation	
	reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	studies are completed and a Conceptual Site Model has been created, monitoring of the site will be an ongoing process, from characterisation stage through to decommission. Environmental and groundwater surveillance will be extensive before, during and after the ISG process in both the Demonstration and Commercial Phase. Alinta Energy are currently in negotiations with the South Australian government regarding the rehabilitation of the Leigh Creek Coalfield.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	A fixed relative density (RD) of 1.4 was used over the Leigh Creek Project area based on wireline density and limited lab analysis.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	G_WS - Inferred Resource, including OC (<200m OB) areas for Opencut surface gasification and ISG (>200m OB) areas for In Seam Gasification. This includes limit. Q_WS - Inferred Resource, including OC (<200m OB) areas for Opencut surface gasification and ISG (>200m OB) areas for In Seam Gasification. This includes limited wireline and Coal Quality data. V_WS - Inferred Resource, including OC (<200m OB) areas for Opencut surface gasification and ISG (>200m OB) areas for In Seam Gasification. This includes limited wireline and Coal Quality data.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	No external audits were undertaken. Internal reviews and

Criteria	Explanation	
		QAQC audits were undertaken. Leigh Creek Energy has also reviewed and given input into the correlation of the data. All data provided was reviewed by Leigh Creek Energy personnel and GeoConsult Resource Geologists.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The Leigh Creek Deposit is well understood with over 50 years of mining occurring on the property. Coal yields and qualities, in particular, have been monitored on a continual basis as feed stock to the power station at Port Augusta. The estimate of coal resources relates to the Leigh Creek Coal Field. There are no remaining areas of material uncertainty relating to modifying factors that could have an impact on the coal resource viability

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Generic Terms and Equivalents

Throughout the Code, certain words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, a non- exclusive list of generic terms is tabulated below together with other terms that may be regarded as synonymous for the purposes of this document.

Generic Term	Synonyms and similar terms	Intended generalised meaning
assumption	*value judgements*	*The Competent Person in general makes value judgements when making assumptions regarding information not fully supported by test work.*
Competent Person	*Qualified Person (Canada), Qualified Competent Person (Chile)*	*Refer to the Clause 11 of the Code for the definition of a Competent Person. Any reference in the Code to the singular (a Competent Person) includes a reference to the plural (Competent Persons). It is noted that reporting in accordance with the Code is commonly a team effort.*
cut-off grade	*product specifications*	*The lowest grade, or quality, of mineralised material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.*
grade	*quality, assay, analysis (that is value returned by the analysis)*	*Any physical or chemical measurement of the characteristics of the material of interest in samples or product. Note that the term quality has special meaning for diamonds and other gemstones. The units of measurement should be stated when figures are reported.*
metallurgy	*processing, beneficiation, preparation, concentration*	*Physical and/or chemical separation of constituents of interest from a larger mass of material. Methods employed to prepare a final marketable product from material as mined. Examples include screening, flotation, magnetic separation, leaching, washing, roasting, etc.* *Processing is generally regarded as broader than metallurgy and may apply to non-metallic materials where the term metallurgy would be inappropriate.*
mineralisation	*type of deposit, orebody, style of mineralisation.*	*Any single mineral or combination of minerals occurring in a mass, or deposit, of economic interest. The term is intended to cover all forms in which mineralisation might occur, whether by class of deposit, mode of occurrence, genesis or composition.*
mining	*quarrying*	*All activities related to extraction of metals, minerals and gemstones from the earth whether surface or underground, and by any method (eg quarries, open cast, open cut, solution mining, dredging, etc)*
Ore Reserves	*Mineral Reserves*	*'Ore Reserves' is preferred under the JORC Code but 'Mineral Reserves' is in common use in other countries and is generally accepted. Other descriptors can be used to clarify the meaning (eg Coal Reserves, Diamond Reserves, etc).*
recovery	*yield*	*The percentage of material of interest that is extracted during mining and/or processing. A measure of mining or processing efficiency.*
significant project	*material project*	*An exploration or mineral development project that has or could have a significant influence on the market value or operations of the listed company, and/or has specific prominence in Public Reports and announcements.*
tonnage	*quantity, volume*	*An expression of the amount of material of interest irrespective of the units of measurement (which should be stated when figures are reported).*

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Appendix B – Geological Modelling Plans

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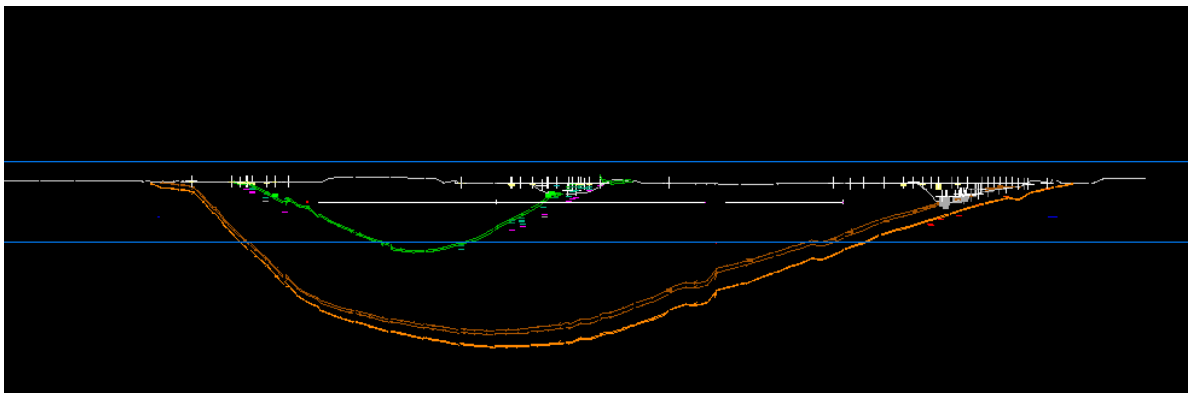

Typical Section – Upper, Main and Lower seams

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248000 249000 250000 251000 252000 253000 254000 255000

6627000 6626000 6625000 6624000 6623000 6622000

400 0 200 400 600 800 1000

Metres

N

LCK – PEL650

Seam f
Depth to Roof Contours

Figure:

GeoConsult

LEGEND

- R2457 35.51 — Drillhole location with name and interesected horizon value
- C1194 26.78 — Drillhole location with name and Fixdhd interpolated value
- 10 — Contours of horizon grid model with values
- Exploration Tenement Area

Scale:	Date:	Drawn:
1:20000		A.Buck

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Metres

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LCK – PEL650

Seam f
Nett Thickness Contours

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PEL650

PEL650

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LCK – PEL650

Seam i1
Depth to Roof Contours

Figure:

GeoConsult

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Seam i1
Nett Thickness Contours

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Metres

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LCK – PEL650

Seam k2
Depth to Roof Contours

Figure:

GeoConsult

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LCK – PEL650

Seam k2
Nett Thickness Contours

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Metres

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LCK – PEL650

Seam q1
Depth to Roof Contours

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Metres

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LCK – PEL650

Seam q2
Nett Thickness Contours

Figure:

GeoConsult

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400 0 200 400 600 800 1000

Metres

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LCK – PEL650

Seam v1
Depth to Roof Contours

Figure:

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Metres

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LCK – PEL650

Seam v1
Nett Thickness Contours

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Scale:	Date:	Drawn:
1:20000		A.Buck

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PEL650

PEL

LCK – PEL650

Seam w1
Depth to Roof Contours

Figure:

GeoConsult

LEGEND

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