Eneabba Gas Limited

ABN 69 107 385 884

Media Release
10 May 2010

SRK Consulting conducts independent technical assessment of Sargon coal resource in WA – gives A$186M preferred value

Highlights;

- **SRK Consulting completes independent technical assessment of coal resource within Sargon tenements in Mid West Region of Western Australia,**
- **SRK Consulting's preferred valuation is A$186M for the resource (range A$134M - A$242M),**
- **Potential to develop Sargon coal resource as an Underground Coal Gasification project – first in Western Australia – will underpin development of Eneabba's proposed 168MW Centauri 1 gas-fired power station project near Dongara in Western Australia, and**
- **Eneabba recently signed an MoU with Cougar Energy for the development of its Sargon coal resource, with exploration/evaluation activities expected to commence soon at project.**

Australian energy company Eneabba Gas Limited (**ASX: ENB**) ("EGL" or "the Company") is pleased to provide the market with a detailed report by leading international consulting practice SRK Consulting ("SRK"), who recently completed an independent technical assessment of the Sargon coal resource ("Sargon Project") within the Company's 100% owned Sargon tenements in the Mid West Region of Western Australia.

A full copy of the SRK report is attached to this ASX announcement.

EGL, through its wholly owned subsidiary Eneabba Mining Pty Ltd, owns 10 exploration tenements that cover an area of approximately 1,175 sq km, the majority of which are considered highly prospective for supply via standard Underground Coal Gasification ("UCG") technology.

The Company has signed a Memorandum of Understanding (MoU) with Cougar Energy Limited (ASX: CXY) for the development of its Sargon coal resources (see ASX announcement dated 16 April 2010). Under the terms of the MoU, the parties will establish a binding agreement to conduct exploration, test work and studies to assess the suitability of the defined Sargon Tenement Area for a commercial UCG operation to supply syngas to a power station that may be developed by the joint venture.

EGL believes the report, in which SRK Consulting gives a preferred value on the project of A$186M, provides further support for the concept of utilisation of the Sargon coal resource as an UCG project – the first UCG project proposed to be developed in Western Australia.

Final recommended valuation - Sargon coal resource

Summary Total Valuation	Low	Preferred	High
In-situ coal value (A$M)	134	186	242
Equivalent Syngas product value A$/GJ	0.07	0.09	0.11

"The ability of the Sargon coal resource to be successfully developed into a UCG project will play a key role in the development of EGL's proposed 168MW Centauri 1 gas-fired power station project (Centuri-1) near Dongara in Western Australia," EGL Managing Director, Mr Mark Babidge, said.

SRK applied a risk-based valuation on two levels. Firstly, SRK estimated the probability that the project will proceed as expected from its current stage to the successful utilisation of the reported resource. Based on the application of project risk factors described in detail in the attached SRK report, a valuation model was developed as presented in Table 6-1 of the SRK Report. Secondly, this valuation model was analysed for uncertainty in the input factors used to generate the valuation model.

As detailed in the full Report, SRK has applied more risk to the "down-side" case at the current project stage, because of the large number of unknown parameters relating to potential resource utilisation, and the low level of knowledge of the structural geology of the area and its potential impact on utilisation of resource for UCG.

The valuation is most sensitive to three aspects of the projects; the Syngas market price, the probability of future drilling success, and the amount of Indicated Resource in the valuation. As expected, the most significant aspect is the Syngas market price – which is a measure of the calorific value of the syngas as well as market conditions (as low calorific value gas is worth less in the marketplace).

The Company, following this report, will now commence activating the stated recommendations with the Sargon Project.

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Competent Persons Statement

*** The information in this VALMIN-Compliant report is based on information compiled by Dr Peter Williams (Member, Australian Institute of Geologists) and Mr Sigit Hardjanto (Member, Australasian Institute of Mining and Metallurgy), and are full time employees of SRK Consulting (Australasia)Pty Ltd. Mr Hardjanto is a qualified geologist and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Dr Williams is a qualified geologist and has sufficient experience relevant to valuation of exploration and mining assets and to the activity which he is undertaking, to qualify as Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves." Dr Williams and Mr Hardjanto consent to the information and valuation, in the form and context in which it appears.*

Sargon Project – Valuation of Coal Assets

Report prepared by

SRK Consulting

May 2010

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Sargon Project – Valuation of Coal Assets
ENE002

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Name/Title	Company
Mark Babidge	Eneabba Mining

Rev No.	Date	Revised By	Revision Details
0	30 April 2010	Peter Williams	Draft report issued to client
1	5 May 2010	Peter Williams	Draft report issued to client
2	6 May 2010	Peter Williams	Final report issued to Client

Executive Summary

Summary of Principal Objectives

SRK reviewed the current documentation related to the Sargon Coal project in February 2010, and provided recommendation to EMPL regarding the approach to valuation applicable to the Sargon coal resource. EMPL and SRK agreed to split the project into two stages. During the first stage of the project, SRK will assess the coal assets, and will report to EMPL all of the factors which SRK identifies as material to the asset value, and the impact of these factors on the likely outcomes from a valuation, preliminary to actually finalising a valuation as a second stage. This report is the Stage 1 report.

Outline of Work Programme

Given the stage of development of the Eneabba project, SRK has applied a risk-based approach to the valuation, where the coal resource is valued on an in situ basis. A target product value is determined by reducing the total in situ Specific Energy of the coal resource (from analytical data and Resource models) by resource and product recovery factors. These factors are determined from comparable testing elsewhere, data from the literature and data provided by Eneabba. There are some trial data for inseam gasification that SRK used to incorporates into an understanding of recovery and the composition of the in situ gas output.

The resulting valuation provides a Resource value on a “per-tonne-of-coal” basis, factored by the Resource tonnes and Specific Energy.

SRK reports a value range by applying a risk profile around the key determining factors, by utilising the @RISK simulation software.

Results

SRK is of the opinion that the parameters used in the estimation are valid, and the geochemical data on which the estimation is based are of a quality to meet JORC standards. However, SRK is of the opinion that the reporting of the Resources can be improved. Combining the seam interpretations from the resource model and the seismic data, SRK is of the opinion that the Coal Resource as calculated by Xenith is conservative in terms of the total in situ resources. These additional resources would be in the Inferred category.

SRK has applied a risk-based valuation to the Sargon on two levels. Firstly, SRK has estimated the probability that project will proceed as expected from its current stage to successful utilisation of the Reported Resource. Based on the application of factors described in the report, a valuation model is constructed (called the “averaged valuation model”), as presented in (Table 0-1). Secondly, this preliminary valuation model is analysed for uncertainty in the input factors to determine the preferred valuation and the valuation range.

Table 0-1: Results from application of risk factors to possible economic outcomes

		Stage 1	Stage 2	Stage 3	Stage 4	Target value
		Exploration (A$M)	Drilling (A$M)	UCG Test Burn (A$M)	Definitive Feasibility	(A$/resource tonne)
	Costs	*3.0*	*8.0*	*23.0*	*45.0*	
	Probability of success at stage	*75%*	*24%*	*40%*	*90%*	
Indicated	PwC Assumption	2.31	3.15	13.60	34.83	39.44
	50% Assumption	1.79	2.44	10.67	27.51	31.30
	Probability of success at stage	*25%*	*24%*	*40%*	*90%*	
Inferred	PwC Assumption	0.74	3.16	13.64	34.94	39.56
	50% Assumption	0.57	2.45	10.70	27.60	31.40
		Valuation, (A$M)		**Valuation, A$/GJ**		
Averaged valuation model	Indicated	139.5		0.13		
	Inferred	73.2		0.04		
Total		***212.7***		***0.10***		

Results from varying the major input parameters and analysing all parameters in a single risk model results in a lower overall valuation for the project. This is because SRK has applied more risk to the "down-side" case at the current project stage because of the large number of unknown parameters relating to potential resource utilisation, and the low level of knowledge of the structural geology of the area and its potential impact on utilisation of the resource for UCG. The final valuation recommendation is shown in Table 0-2.

Table 0-2: Final recommended valuation – Sargon Coal Project

Summary (Averaged valuation model)	Low	Preferred	High
In-situ coal value (A$M)	134	186	242
Equivalent Syngas product value (A$/GJ)	0.07	0.09	0.11

The valuation is most sensitive to four aspects of the projects, the Syngas market price, the two probabilities of drilling success at stages 2 and 3 of future work, and the amount of Indicated Resource in the valuation.

As expected, the most significant aspect is the Syngas market price – which is a surrogate for the calorific value of the output product as well as market conditions (as low calorific value gas is worth less in the marketplace).

SRK makes the following specific recommendation relating to the need for future work.

- The current geological model for the Sargon Resource does not include all of the geological information available. The Xenith model has not incorporated the detailed information that may be available from all available data sources, and so the structural geology model is currently at a very early stage.
- SRK suggests that there may be a number of small structures that could potentially impact the utilisation of the Resource for UCG, and recommends that there is a detailed interpretation of the structural geology from the existing seismic data, and that EMPL then review the need to undertake additional processing of the data. It is important to note that relatively small structures can have a significant impact when the coal seams are only a total of 5 m thick.
- In addition to a review of the seismic data, SRK also recommends that EMPL review existing aeromagnetic data. SRK's experience of utilisation of aeromagnetic data in underground longwall mining has provided one of the best techniques in identifying small structures that cause longwall disruption that have otherwise not been detected. The success of magnetics will depend on the magnetic signature of the basement, which SRK has not investigated as part of this valuation review.

Table of Contents

List of Tables

List of Figures

List of Appendices

Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by Eneabba Mining Pty Ltd (EMPL). The opinions in this Report are provided in response to a specific request from EMPL to do so. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

List of Abbreviations and Glossary

Abbreviation	Meaning
AIG	Australian Institute of Geoscientists
AusIMM	The Australasian Institute of Mining and Metallurgy
BSL	below sea level
Carbonaceous	Rock containing organic matter or other carbon
CSM	coal seam methane
CTL	coal-to-liquids
DTM	digital terrain model
EMPL	Eneabba Mining Pty Ltd
ENE	east north east
GJ	gigajoule
Interburden	Rock units separating coal seams
JORC Code	Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC), December 2004
k	thousand
kg	kilogram
Limestone	Rock composed dominantly of calcium carbonate
LLC	Limited Liability Company
m	metre
M	million
MJ/kg	megajoules per kilogram
ms	millisecond
Mt	million tonnes
Mudstone	Fine-grained generally impermeable rock type
NNW	north north west
Overburden	Rocks overlying a package of coal seams and associated interburden
PwC	PricewaterhouseCoopers
Sandstone	Rock composed dominantly of sand-sized particles
Seismic Survey	Geophysical method to determine rock structure and stratigraphy below the earth surface
SRK	SRK Consulting (Australasia) Pty Ltd
Syngas	Synthetic gas generate by burning coal under reducing conditions
t	tonne
twt	two-way time
UCG	underground coal gasification
Underburden	Rocks beneath a package of coal seams and associated interburden
VALMIN	Code and Guidelines for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports

1. Introduction and Scope of Report

Eneabba Mining Pty Ltd (EMPL) is seeking a valuation on the coal resource currently held under tenement in the Mid West Region of Western Australia – EMPL's Sargon project. SRK has investigated the current technical status of the information, and reviewed a previous valuation undertaken by Xstract (Bayrak and others, 2009). This review determines a technical value of the coal resource of the project, and complies with the VALMIN code as it applies to the valuation of exploration assets. SRK understands that the end use of the coal resource is the production of secondary Syngas through the in situ combustion of the resource – underground coal gasification (UCG) process.

The valuation is current at 6th May 2010. SRK's valuation has not taken into account the possible effects of taxation changes proposed as part of the Federal Government's response to the Henry Review released on 2 May 2010. A market-based exploration valuation includes an inherent assumption regarding prevailing taxation rates, and so no special allowance is normally applied for taxation. The future tax regime resulting from the implementation of the Federal Government's response to the Henry Review may have both positive and negative effects for exploration companies that are yet to be tested in the market.

2. Background and Brief

2.1 Background of the Project

SRK reviewed the current documentation related to the Sargon Coal project in February 2010, and provided recommendations to EMPL regarding the approach to valuation applicable to the Sargon coal resource. EMPL and SRK agreed to split the valuation project into two stages. During the first stage of the project, SRK will assess the coal assets, and will report to EMPL all of the factors which SRK identifies as material to the asset value, and the impact of these factors on the likely outcomes from a valuation, preliminary to actually finalising a compliant valuation as a second stage. This report is the Stage 1 report.

2.2 Nature of the Brief

SRK has reviewed the in situ Sargon Coal Resource, and the classification of that resource, using the geological model already developed by Xenith Consulting (Xenith).

Using the resource generated by Xenith, SRK provides an independent opinion on the value of the resource based on the following assumptions:

- The risk level associated with the Resource.
- The economic potential of the resource is for in situ utilisation, in this case as proposed by Eneabba, in situ conversion of the Resource to Syngas (UCG) suitable for extraction and input to a proximal power station.
- There are no current engineering studies available to assist in conversion of the Resource to a gas Reserve.
- There are similar UCG projects or pilot projects with which SRK can compare the potential performance of the Eneabba Resource – Eneabba will assist SRK in generating this database of information, which will be checked by SRK.
- Eneabba agrees to assist SRK by way of provision of research of which SRK may not be aware, but which can be used publicly in SRK's report.
- SRK is already aware of Australian projects and is also aware of coal gasification projects using (or proposing to use) mined coal feed, which provides base-case data on coal gas production efficiency in general terms.

- Given the stage of development of the Eneabba project, SRK has applied a risk-based approach to the valuation, where the coal resource is valued on an in situ basis as follows:
  - Total in situ Specific Energy of the coal resource (from analytical data and Resource models).
  - Less estimate of underground burn efficiency – based on comparable testing elsewhere and public domain data that and data provided by EMPL. There are some trial data for inseam gasification that SRK used to incorporate into an understanding of recovery and the composition of the in situ gas output.
  - Less estimate of likely gas extraction efficiency – based on operations and test burns on other operations.
  - Less contamination risks associated with the produced gas – based on both data sources mentioned above. This includes a review of current data so far collected on environmental and groundwater risks, including subsidence risk.
- The resulting valuation provides a Resource value on a “per-tonne-of-coal” basis, factored by the Resource tonnes and Specific Energy.
- SRK reports a value range by applying a risk profile around the key determining factors, by utilising the @RISK simulation software.

3. Programme Objectives and Work Programme

3.1 Programme Objectives

The objectives of this project are to identify all of the factors that have an impact on a valuation of the Sargon coal resource, undertake an assessment of those factors and provide an estimation of how these factors may affect a valuation outcome. This stage of work does not provide a VALMIN Code-compliant valuation. Should this be required, SRK reserves the right to make changes to this report that will allow public reporting of results.

3.2 Purpose of the Report

The purpose of this Report is to provide an independent technical assessment of the Sargon Coal assets of Eneabba Mining Pty Ltd. SRK does provide an opinion as to the value of the resource. The valuation is for internal purposes only, and SRK does not provide permission to EMPL to make this report public in any way, including by way of release to equity markets.

3.3 Reporting Standard

This Report has been prepared to the standard of, and is considered by SRK to be, a Technical Assessment Report under the guidelines of the VALMIN Code. The VALMIN Code is the code adopted by The Australasian Institute of Mining and Metallurgy (AusIMM) and the standard is binding upon all Australasian Institute of Geoscientists (AIG) and AusIMM members. The VALMIN Code incorporates the JORC Code for the reporting of Mineral Resources and Ore Reserves.

This Report is a Valuation Report, and provides an opinion as to the value of the coal assets currently included in Resources reported by EMPL.

3.4 Work Programme

The project was undertaken during April 2010. The first stage was a review of the resource models provided by Xenith, followed by a discussion meeting in Perth on the results of that review, together with a review of the seismic data available for the project. This work was followed by a collation of the available geological data from existing reports and seismic sections to form an opinion on the structural geology and indications of coal continuity available from different sources.

The valuation work included literature review and derivation of a suitable method for determining the value for the in situ coal resource, and then preparation of a suitable valuation model, reporting of the results, and peer review.

3.5 Project Team

Sigit Hardjanto, a member of AusIMM and a Competent Person for coal resources under the JORC Code reviewed the coal resources, Sarah Monoury reviewed the seismic data with Peter Williams. Peter Williams, a member of AIG undertook the asset valuation. Peer review was by Bruce McConachie.

3.6 Statement of SRK Independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no prior association with EMPL concerning the mineral assets that are the subject of this Report, other than as declared in this report. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence.

SRK's fee for completing this Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the Report.

3.7 Warranties

EMPL has represented in writing to SRK that full disclosure has been made of all material information and that, to the best of its knowledge and understanding, such information is complete, accurate and true.

3.8 Indemnities

As recommended by the VALMIN Code, EMPL has provided SRK with an indemnity under which SRK is to be compensated for any liability and/or any additional work or expenditure resulting from any additional work required:

- which results from SRK's reliance on information provided by EMPL or to EMPL not providing material information; or
- which relates to any consequential extension workload through queries, questions or public hearings arising from this Report.

3.9 Consents

SRK consents to this Report being included, in full, in any EMPL public releases, in the form and context in which the technical assessment and valuation is provided, and not for any other purpose.

4. Sargon Coal Project

The Sargon Coal Project has evolved since the original tenements were acquired in 2004 from a potential coal seam methane (CSM) project concept, to a project with a JORC Resource on coal seams in the Cattamarra Formation. These seams are located at depth ranging from the surface north of the project area to 400 m in depth in the south. The Cattamarra Coal Measures comprise a number of thin seams, of which seams “C” and “D” are currently part of the EMPL Sargon Coal Resource. Typically, these seams are thin, and are sub-bituminous in terms of coal rank. They do not form a conventionally mineable coal resource, as they are sub-economic to extract in this area.

However, EMPL is proposing the effective economic utilisation of the resource through underground coal gasification processing (UCG) and extraction of the resultant Syngas for utilisation at surface. The proposed utilisation is gas turbine feed to the proposed Centauri I power station located on the tenements. As such, the Resource is potentially economic, thereby meeting the JORC guidelines for quoting the resource.

In deriving a target value for the coal resource, this valuation takes the future potential economic usage into account, and then applies an assessment of risks associated with reaching that target value to provide an opinion on the current value of the project.

A significant component of that risk is geological in nature, because there is not currently a large database of information on the geometry and chemical behaviour of the Sargon Coal, or any modelling of the behaviour of the twin-seam system in relation to the proposed underground ignition and burn system. Because of this, SRK has referred to historical and current research and information on the behaviour of other resources that have been trialled or brought to production as UCG projects to determine a risk profile for the project.

SRK notes that this project is still at a very early stage in relation to studies on utilisation. SRK cannot guarantee that the underground burning process will be successful at this particular site. Other UGC projects have been successful, and there is considerable interest in the project in the industry, as indicated by the recent announcement of a joint venture with Cougar Energy (Eneabba Gas, 2010)in relation to the project (Eneabba Gas, 2010). However, EMPL has not yet empirically tested the suitability of the Sargon Coal resource for UCG, and has yet to undertake a trial of any of the possible UCG technologies at the Sargon Project.

4.1 Tenements

The Sargon tenements are located in the Northern Perth Basin, between Geraldton and Dongara in the Mid West Region of Western Australia (Figure 4-1). Details of the tenure and expiry dates of the tenements are shown in Table 4-1.

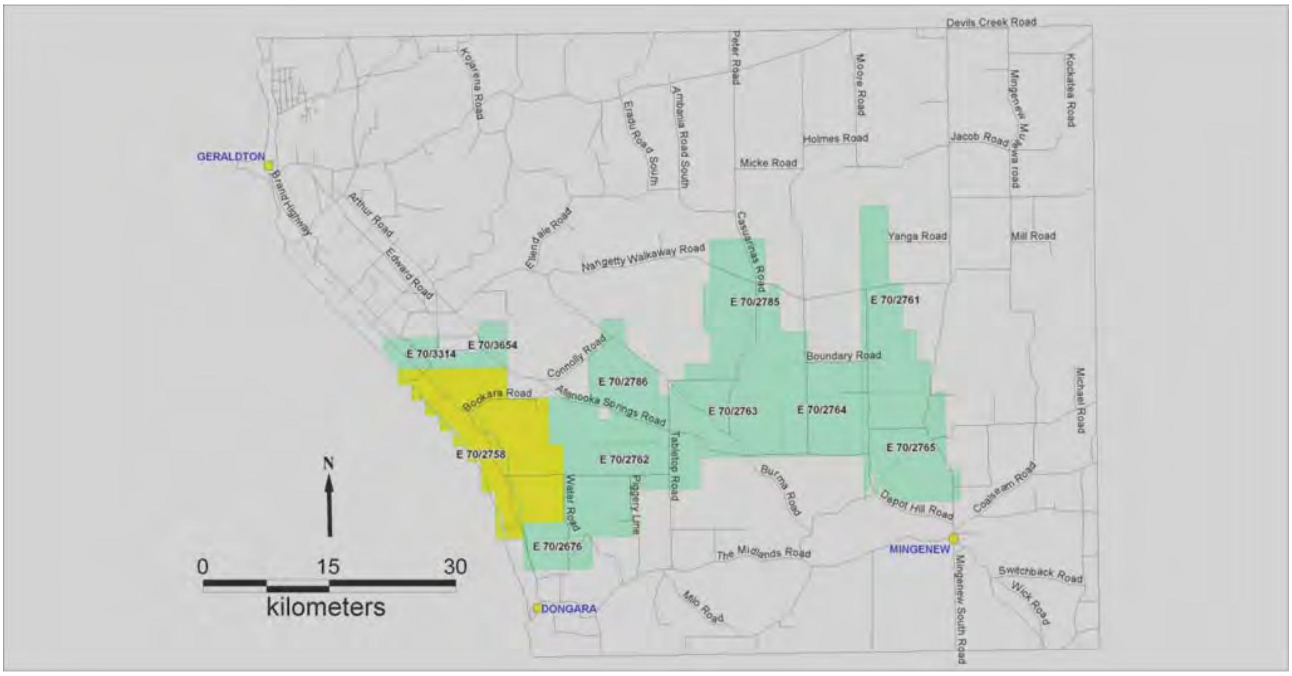


Figure 4-1: Location of the EMPL tenements, Mid West region, WA

Source: SRK, data from GSWA. Sargon resource on tenement E70/2758, shown in yellow

Table 4-1: Results from search of DMP tenement information on 14 April 2010

Tenement ID	Type	Tenement Status	Holder count	Holder	Formatted tenement ID	Legal area	Unit	Grant date	Expire
E7002676	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2676	13	BL.	2004/10/13	2011/10/12
E7002758	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2758	70	BL.	2005/11/15	2010/11/14
E7002761	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2761	37	BL.	2005/11/15	2010/11/14
E7002762	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2762	64	BL.	2005/11/15	2010/11/14
E7002763	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2763	38	BL.	2005/11/15	2010/11/14
E7002764	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2764	36	BL.	2005/11/15	2010/11/14
E7002765	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2765	44	BL.	2005/11/15	2010/11/14
E7002785	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2785	44	BL.	2005/11/15	2010/11/14
E7002786	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/2786	34	BL.	2005/11/15	2010/11/14
E7003314	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/3314	11	BL.	2008/07/24	2013/07/23
E7003654	Exploration Licence	Live	1	Eneabba Mining Pty Ltd	E 70/3654	6	BL.	2009/11/03	2014/11/02

Note: Blocks (BL) in this area are approximately 2.93 km^2 in area

The total tenement package has an area of approximately 1163 km^2 in 397 blocks. The Sargon Coal Resource is located on exploration licence E70/2758, which is the westernmost tenement in the Sargon tenement package (Figure 4-2) and covers approximately 205.9 km^2.

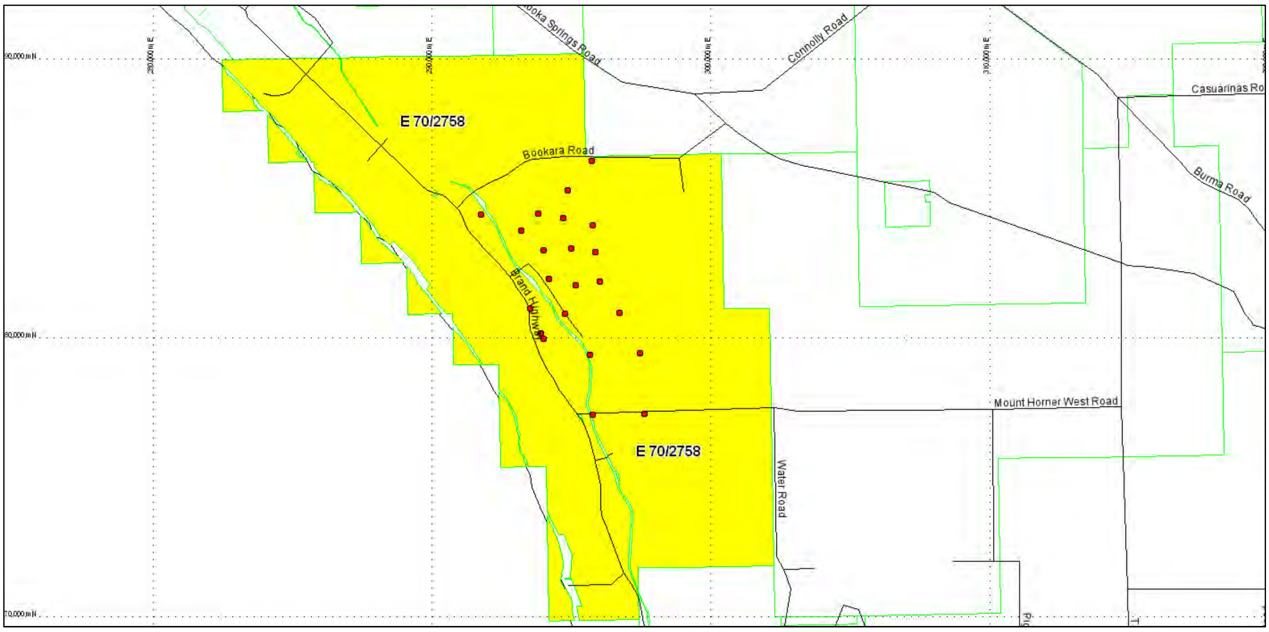


Figure 4-2: Location of the Sargon Coal Resource

Note: Red dots indicate location of drill holes completed by EMPL

Source: SRK Consulting

4.2 Geological Setting

4.2.1 Regional geology

The Sargon tenements are located in the Northern Perth Basin. The basin has a protracted history of deposition from the Permian through to the Pleistocene. Jurassic rocks ranging from the Eneabba Formation to the Yarragadee Sandstone underlie the Sargon project area. The Proterozoic metamorphic basement of the Northampton Block crops out as a number of small inliers 16 km north of the resource. The basement rocks are in places overlain directly by Cattamarra Coal Measures, Cadda Formation and Yarragadee Formation. The thickness of the sedimentary sequence increases to the east and to the south. The Jurassic sequences are overlain in the project area by the Pleistocene Tamala Limestone unit. The regional geology of the Northern Perth Basin is described in Mory & Iasly (1996) and Ercole & others (2002).

4.2.2 Local Geology

The local geology is known from an analysis of the surface mapping combined with interpretations from seismic data and logging of EMPL drilling programmes in 2007 and 2009, and earlier oil and gas drilling in 1986 and 1987. There is, as yet, no new geological map produced from the EMPL drilling results, but it is clear that a number of faults are now recognised, and the detailed geology of the tenements differs from previous interpretations. In the northern part of the tenement, the coal resource appears bounded to the west by an east northeast-dipping normal fault that is clearly visible in seismic sections (e.g. line 87-30). There is also a set of normal faults identified in the seismic sections, which appear to dip to the south-southeast, causing the basement to deepen to the south. The age of these faults relative to the deposition of the Jurassic coal measures is not clear, but Mory & Iasly (1996) suggest that most of this faulting took place before deposition of the Middle Jurassic Cattamarra Coal Measures.

Detailed descriptions of the local geology are provided in Westblade (2009). The tenements are located on the Allanooka Terrace, and Greenough Shelf structural subdivisions of the Northern Perth Basin (Figure 4-3).

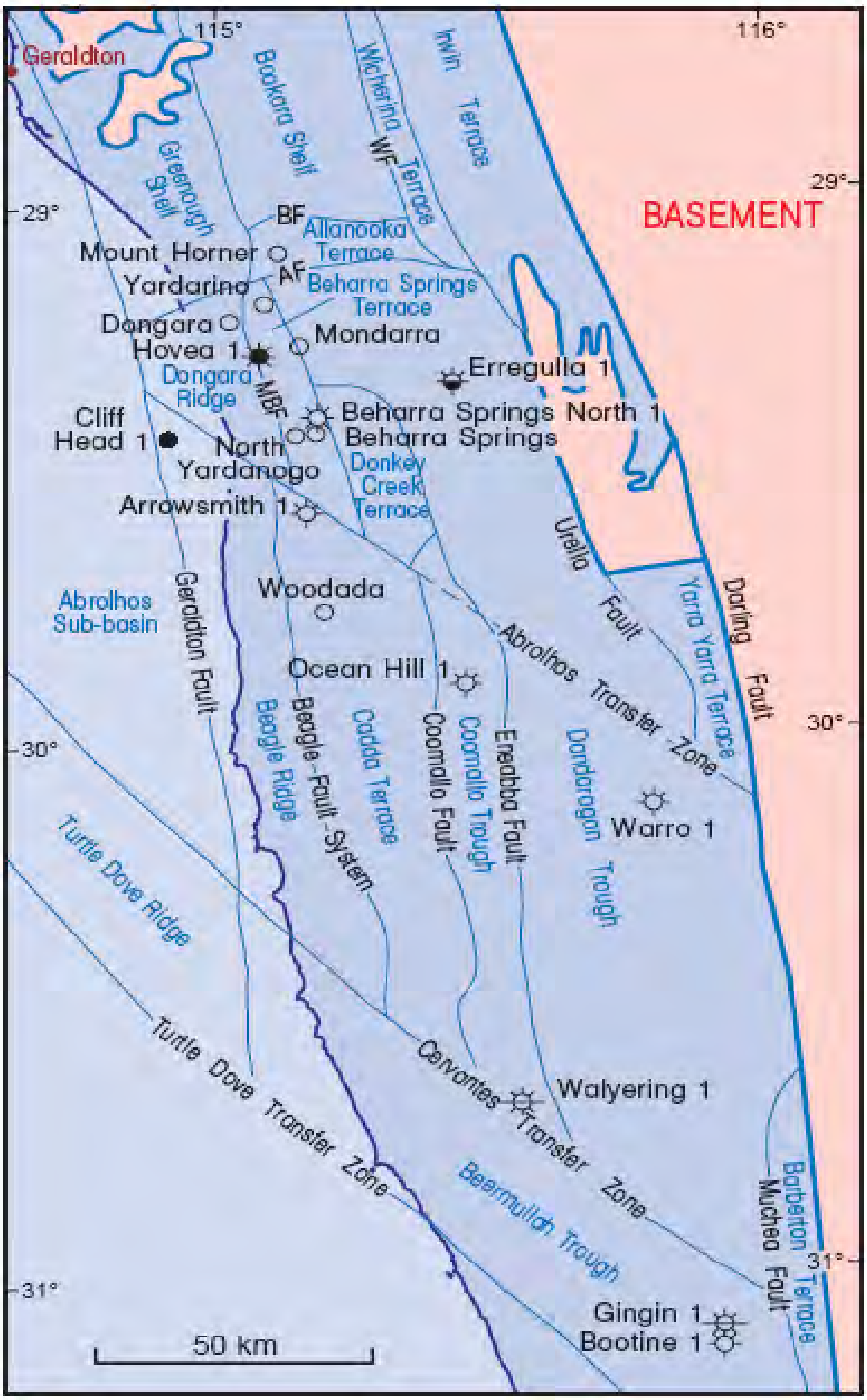


Figure 4-3: Structural subdivisions of the Northern Perth Basin

Source: D'Ercole and others, 2002

In this area, the sequence is truncated, with the Triassic succession missing in most parts of the tenement package (Figure 4-4).

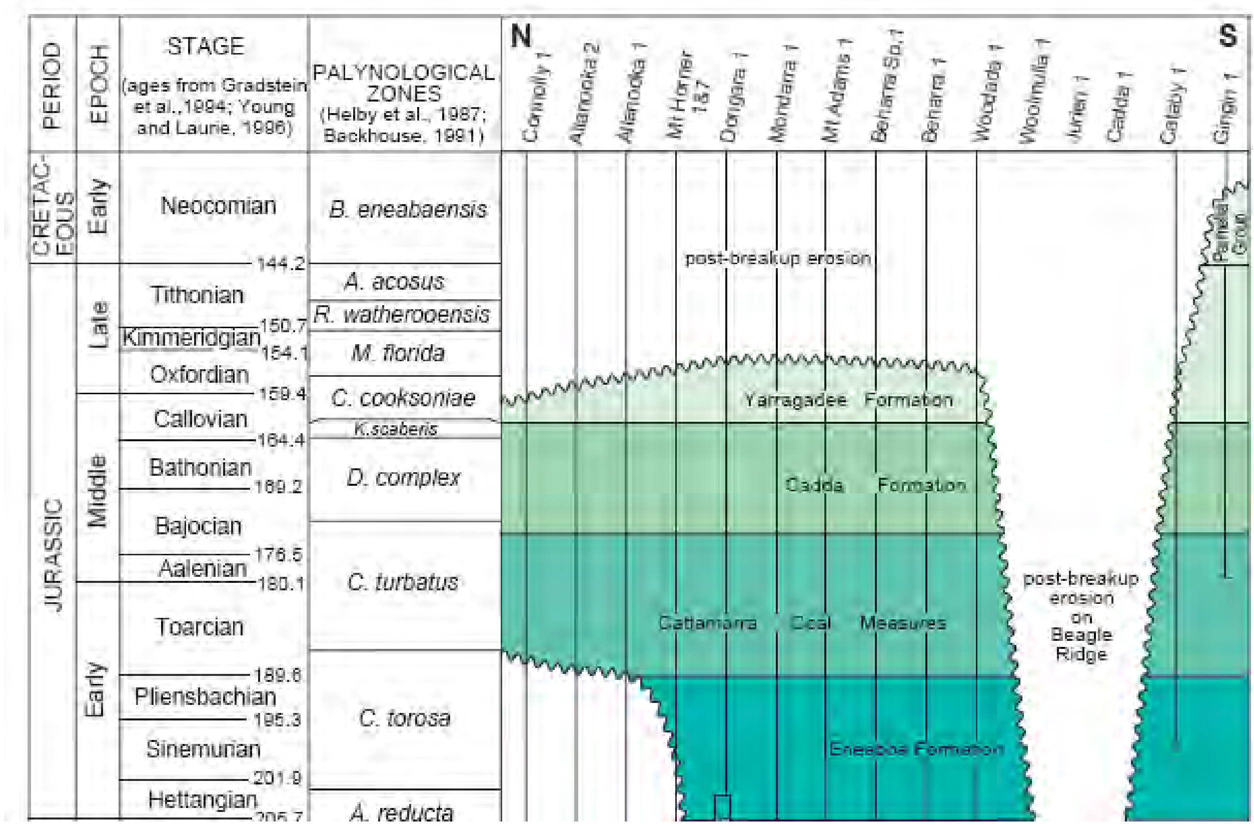


Figure 4-4: Stratigraphy of the Northern Perth Basin

Source: D'Ercole and others, 2002

Note: Sargon stratigraphy similar to that in the northern wells

Structures identified in the Sargon Project area are similar in orientation to the regional structures shown by D'Ercole and others (2002) as bounding the major structural domains, particularly the bounding structures to the Greenough Shelf and the Allanooka Terrace.

4.3 Analysis of drilling and resource estimation

SRK has reviewed the Xenith Resource report and resource model to assess this model for risk and suitability for valuation under the VALMIN code. The resource analysis undertaken by Xenith used information from recent drill cores.

The conclusions from SRK's review are:

- In general, Xenith geological model meets the standard for modelling, based on the available database of holes (coordinate and elevation of holes), topography data, quality data and structure (if any).
- There are 22 exploration drill holes in 2009 as well as 4 holes from the 2007 included in this model showing two coal seams (C and D seams). The average thickness of C seam is 1.29 m and D seam is 2.70 m. The average interburden between seams is 1.33 m thick.
- One major fault has been interpreted with a general north–south trend and throws ranging up to 120 m.
- Only holes with geophysical log and quality analysis are included in resource calculation.
- For the resource calculation, Xenith applied coal thickness 1.00 m or greater, and a maximum raw ash cut off of 40%. They also stated that points of observation are no more than 1000 m apart for indicated status and no more than 2000 m apart for inferred status. SRK found that the application of the JORC Code guidelines had been applied inconsistently. In some areas, the resource area boundaries were extended beyond 1000 m apart for Indicated and 2000 m apart for Inferred, as shown in Figure 4-5.

- A significant area of resource may not support sustained burning due to small scale faulting associated with a crush zone evident along the north–south normal fault. Quantification of this zone will be important to define the practical exploitation areas available to the current project.
- Inferred Resources can be significantly improved by incorporating drill holes Bonnefield-1, Wattle Grove-1 and Rakrani-1, while Eleven Mile-1 also adds to the control. Because JORC inferred resources typically depend on 4 km spacing (Stoker, 2007) rather than 2 km as applied by Xenith, it is possible to greatly increase the tonnages, particularly to the south. Although there is no core, excellent control is provided by high quality well logs and the available seismic data.

4.3.1 Drill spacing

As indicated previously, the drill hole spacing is outside normal guidelines. However, there is apparent continuity of both coal quality and of thickness in areas where spacing is outside the guidelines. SRK reviewed the available seismic data to provide additional evidence of coal seam continuity.

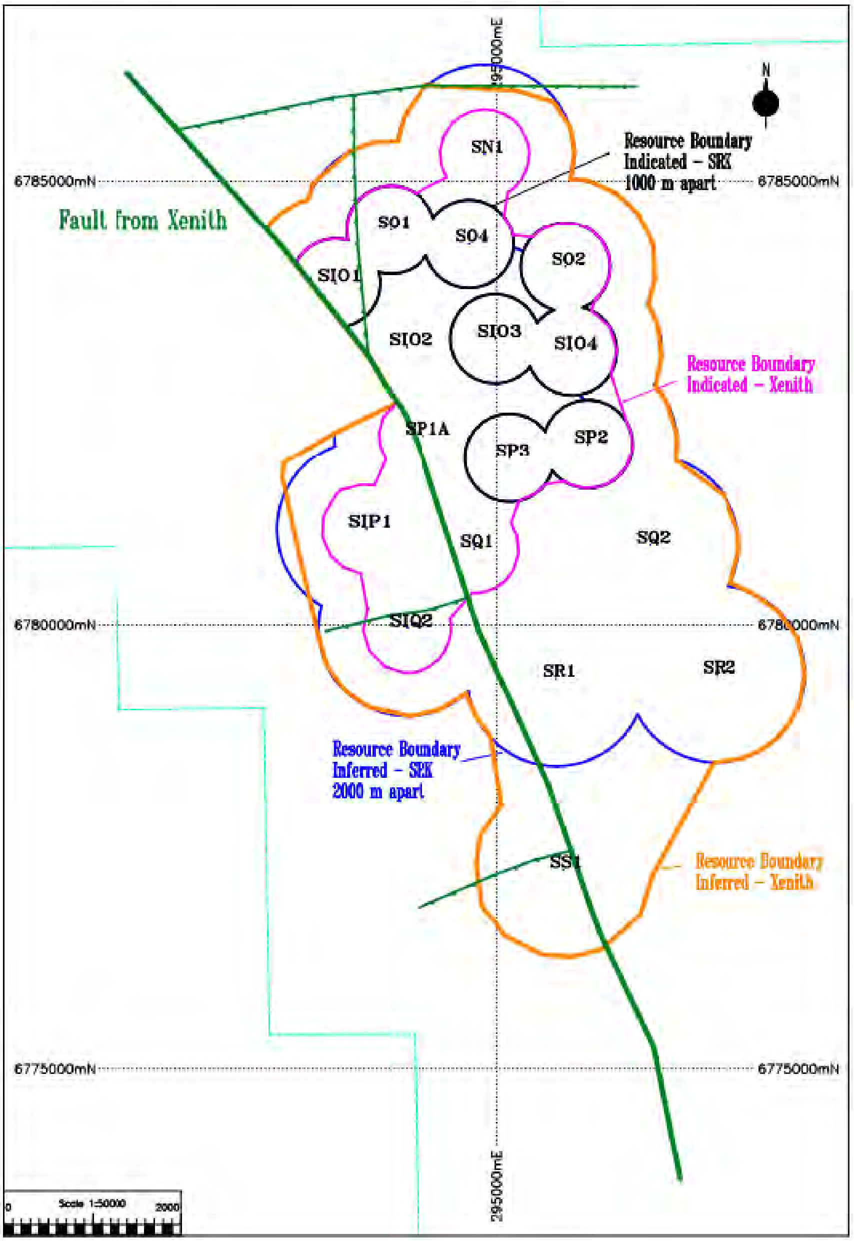


Figure 4-5: Outline of the resource classification boundaries calculated by SRK and Xenith

Tenement outline in light green, faults from Turner (2009)

4.3.2 Seismic surveys in the area

The area was subject to exploration for oil and natural gas in the 1980s and 1990s. Part of that exploration programme was the acquisition of seismic data and drilling of several wells. Seismic profiles have been collected and processed by different companies, thus the quality is variable.

In interpretation of the seismic lines, SRK notes that direct visualisation of the Cattamarra coal seams is unlikely to be consistent across the whole project area. These form two thin seams up to 1.5 m (seam C) and 3.3 m (seam D) in thickness, separated by an interburden ranging in thickness from 0.9 m to 2.1 m thick. The total package thickness is therefore about 5 – 6 m in thickness. The interburden and surrounding overburden and underburden are carbonaceous mudstone and siltstone. Firstly, the vertical resolution of the seismic profile decreases with time (depth). Indeed, at the best the vertical resolution would vary from 7 m to 30 m in the first 300 m, and then fall rapidly in the basement as velocity increases. Secondly, the velocity contrast between the coal seam and the overburden is low whereas the velocity contrasts between sandstone and limestone, as well as sedimentary rocks and granite are significant enough to be observed.

The stronger reflector on the seismic profiles is representative of the basement, varying mainly from 300 to 450 ms two-way-time (twt). It correlates with the interpreted depth of basement from the petroleum wells. The coal seam horizon is expected between twt 100 and 200 ms. There are two other strong horizons visible on some seismic lines that correspond to two deeper limestone units. They occur at the base of the lower Jurassic as described in the well log for the Eleven Mile petroleum well.

4.3.3 Coal seam continuity

As discussed above, there are some areas where the drill hole spacing exceeds the JORC recommended maximum for indicated resources. Seismic lines reviewed to assess continuity over these areas are shown in Figure 4-6.

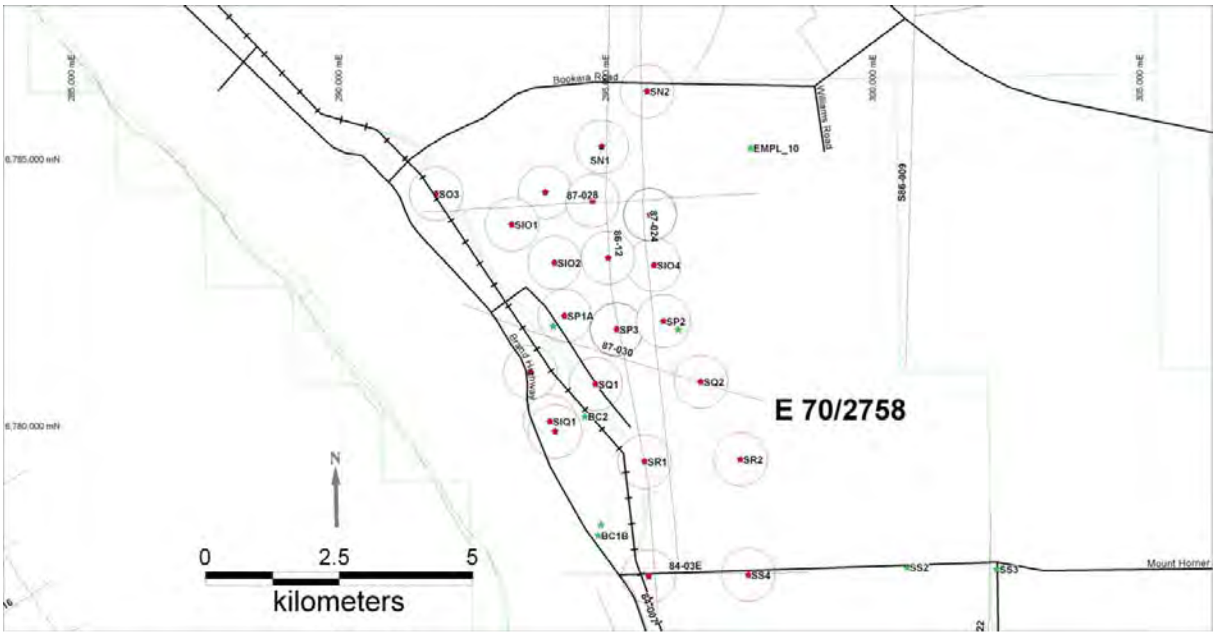


Figure 4-6: Seismic lines to review coal continuity

These are 86-012, 87-024, 87-030 and 87-028.

86-12: Between drill holes SN1, SO4, SIO3, SP3

87-24: Provided useful north–south control and illustrates the deepening to the south

87-030: Between SP3 and SQ1 (also provided evidence of small-scale crush zone faulting)

87-028: Between SO4 and SO2

In 87-028, coal is intersected in SO4 at 184 m downhole and in adjacent SO2, 1100 m east coal is at 183 m downhole. The approximate two-way (travel) time (twt) at the location and depth is between 130 and 150 ms. At this time only moderate continuity of stratigraphic reflectors are apparent in the seismic data. The basement is dipping to the west, and occurs at about 320 ms twt at the drill hole locations of interest, and the sequence appears to on-lap the basement as it rises to the east. The pattern of reflections suggests that surface coupling and ground statics are producing significant noise in the shallow section. Close to the fault, there is good evidence of small-scale disruptive faulting and it is possible that out-of-plane reflections cause increased noise.

In 87-030, the top of seam C is at 295 m in SP3 and at 250 m in SQ1 (down-hole). This represents a twt of about 205 ms. The line shows strong reflectors and continuity of the reflectors at this depth. On line 87-023, which is a N–S line east of the two drill holes, reflections are poor, and there is some indication of faulting at depth. This may suggest some small displacement ENE-striking faults in this area.

In 86-12, SN1 (161 m downhole), SO4, SIO3 (224 m downhole) and SP3, there is a reasonable continuity of reflectors between all four drill holes at the appropriate depth. Some loss of reflector may be due to ENE-striking faults.

4.3.4 Structural geology

Faults in the basement are readily apparent on the seismic sections, and the projection of the major faults to surface is shown in Figure 4-9. Xenith has provided evidence that the fault striking north-northwest offsets the C and D coal seams. This normal fault has a throw to the east of up to 200 m in the basement. Xenith indicate a throw of up to 120 m of the coal measures, suggesting this may be a growth fault. The thickness of stratigraphy thins to the east of the fault, also suggesting this is in part a growth fault. SRK has not identified a continuation of this fault north of line 87-027, and in particular cannot recognise it on lines 87-022 or 87-032.

Hole SN2 did not intersect coal, and is located north of the major east-north-easterly-striking fault. This fault has a throw of up to 240 m to the south, and can be traced across the northern part of the prospect area from the seismic lines. This fault also continues to surface. This fault does appear to be present on lines 87-027 and 87-028, suggesting that this fault may truncate or terminate the NNW-striking fault.

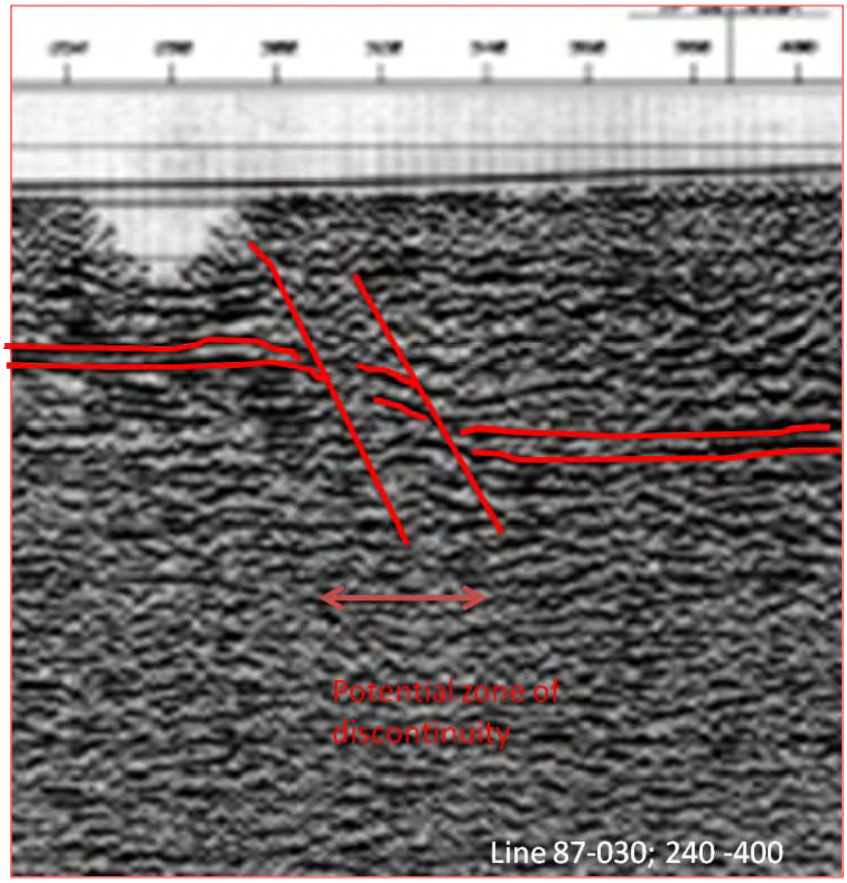


Figure 4-7: NNW-striking fault zone - geometry of structure at basement interface

A second probable fault can be mapped from the seismic data within the resource, between drill holes SP1A (200 m below sea level) and SIO4 (184 m below sea level) in the north and SP3 (226 m below sea level) and SP2 (219 m below sea level) in the south. The throw is between 20 m and 30 m to the south. There are visible discontinuities in the Cattamarra Formation reflectors associated with this probable fault (see Figure 4-8).

On the north–south seismic line 87-24, other faults can be identified as breaks in the continuity of the basement reflectors (Figure 4-8), one is present north of drill hole SIO4 (184 m below sea level) and two occur south of SQ1 (220 m below sea level) and SR1 (277 m below sea level). It is not clear whether the overall deepening of the coal basin to the south is due to a regional dip, or whether this is due to a series of stepped terraces.

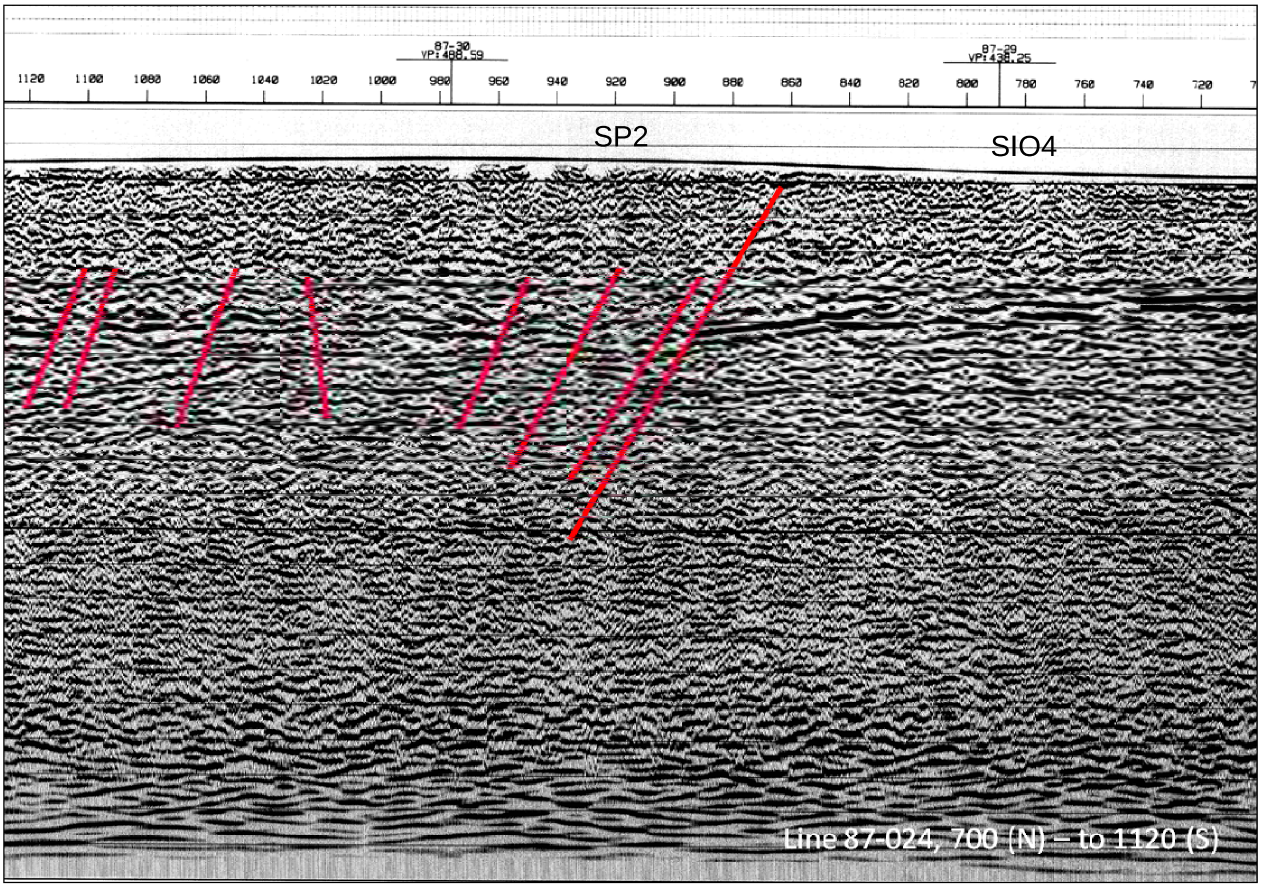


Figure 4-8: Other ENE-striking faults (in red) at the basement contact that may affect continuity in overlying stratigraphy

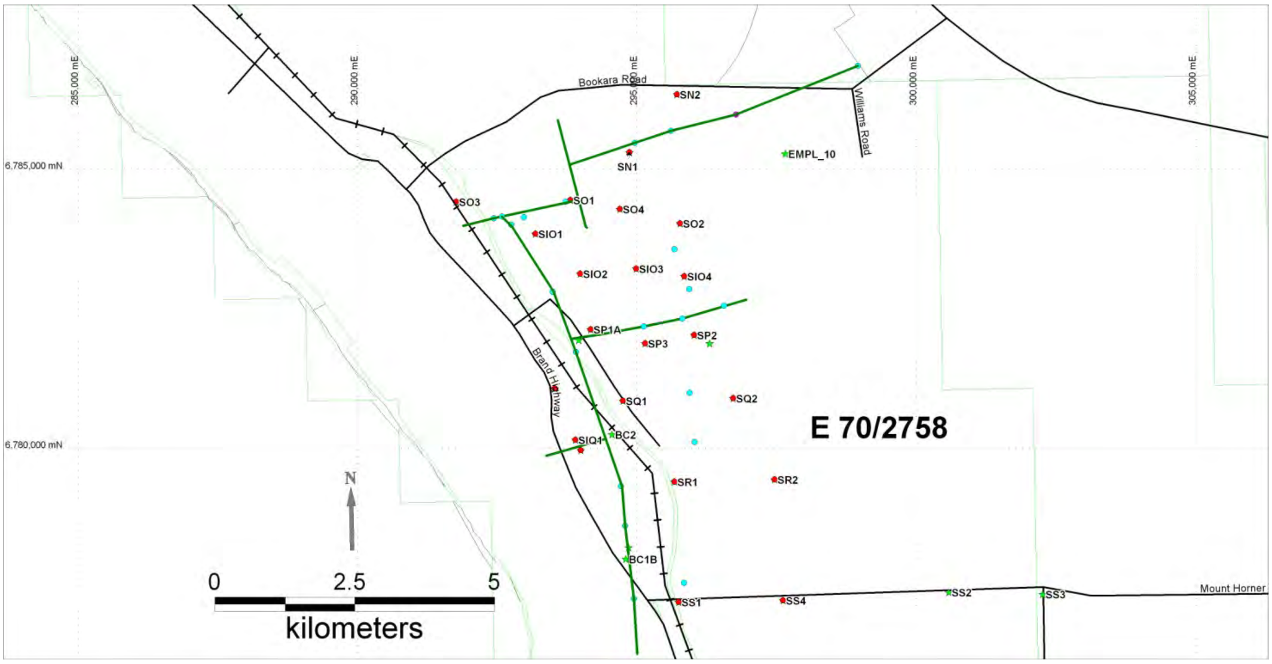


Figure 4-9: Structural interpretation of the seismic data - faults projected to surface

The major faults are associated with relatively wide deformation zones. For example, the major ENE fault on line 87-024 in the north of the tenement group has a deformation zone, probably comprising up to 3-4 fault strands, about 250 m wide. It is unlikely resources are recoverable over this zone, which needs to be mapped out to ensure the locations are accurate, and only seams south of the deformation zone are included in the resource. The NNW-striking faults such as seen on line 87-030 appear to have less associated deformation complexity, and the fault zone is about 100 m wide in the basement. It is not so clear how wide the zone is at the stratigraphic position of the Coal Measures. The fault appears to have a moderate easterly (60°) dip, so accurate location of the fault at surface and at the depth of the coal measures is required, as the coal seams will have an apparent easterly offset relative to the surface trace of the fault. For example if the fault has a 60° dip, the offset against the surface position of the fault to the coal measure will be 75 m at a depth of 150 m).

The southernmost two holes drilled by EMPL were SS1 (381 m BSL) and SS4 (281 m BSL). The surrounding holes SR1 (278 m BSL) and SR2 (264 m BSL) suggest that SS1 may be structurally offset relative to the surrounding holes. The nature of this structure is shown in (Figure 4-10). Line 84-09 suggests that here may be a N–S basement ridge causing the offset between SS1 and SS4, which may continue to the north, where basement is also rising to the east.

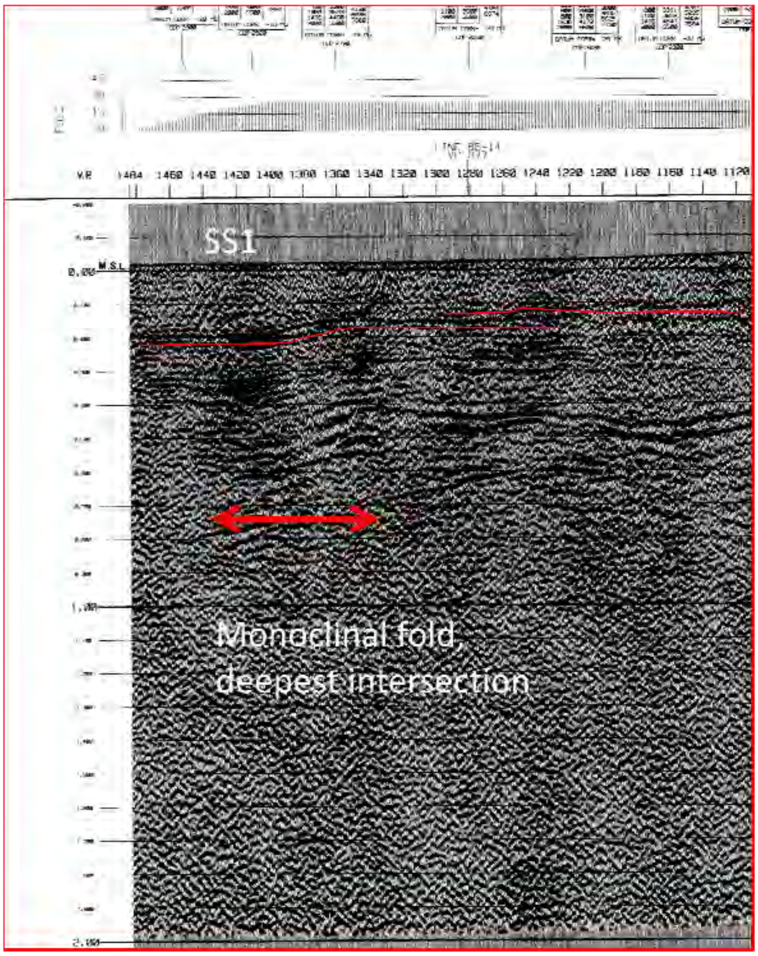


Figure 4-10: Monocline causing step down in stratigraphy to the south (Line 86-12)

Note: Thin red line indicates approximate position of Cattamarra Coal Measures (referred to as the Cockleshell Gully Fm in the various petroleum reports – early-middle Jurassic)

As a detailed interpretation of the seismic data is beyond the scope of this valuation review, SRK recommends that a detailed interpretation of the seismic data be undertaken by EMPL to assess the effects of faults on the continuity of coal seams. Currently, SRK estimates that there are at least five small-scale structures apparent in the data, with movement of anything up to 30 m at the basement, which may affect the coal seam continuity, as do the major faults.

The seismic sections demonstrate continuity between some of the drill holes, but it will be important to test whether the ENE faults cause seam offsets, and define structural domains to assess the impact on resource recoverability.

4.3.5 Conclusion – Resources

SRK is of the opinion that the parameters used in the estimation are valid, and the geochemical data on which the estimation is based are of a quality to meet JORC standards.

Combining the seam interpretations from the resource model and the seismic data, SRK is of the opinion that the Coal Resource as calculated by Xenith can be considered JORC-compliant but conservative in terms of the in situ resources.

SRK does have a concern regarding the continuity of the seams from the perspective of utilisation, and there may be a reduction in practical working Resource associated with deformation around the faults, and the final accurate mapping of the intersection lines of the faults and the seams. These will not have a large impact from the perspective of tonnes and coal quality, but may impact recoverability. The nature and intensity of ENE-striking faulting needs to form part of the ongoing investigation by EMPL to ascertain the significance of potential structures to design of UCG "panels" for exploitation, and the effect, if any, this has on ability to utilise the resource.

SRK has calculated the affect on Resources if the JORC Code guidelines were applied consistently, and this would result in a decrease in Indicated Resource but a large increase in Total (Indicated plus Inferred) Resources. In the valuation, the potential for reduced certainty in the resource is included in the risk assessment in determining the overall risk discount.

5. Sargon Coal Valuation

The Sargon coal resource comprises two thin coal seams with low heat value (sub-bituminous coal to lignite). East of the major NNW striking fault and northern south of the ENE fault the coal seams range in depth from 154 m in the north to approximately 400 m in the south of the tenement package. West of the fault, the depth of the coal seams is poorly constrained, but may be at shallower depth. In SIP1 the depth is 129m and in SIQ2, south of a ENE striking fault, the depth is 200 m.

The Sargon Coal Resource would not be suitable for extraction as a thermal coal due to the narrow seam width and the depth, which would necessitate underground access. The exploration programme undertaken was designed to define either a coal seam gas resource or a resource suitable for underground gasification of the coal (UCG) and extraction of the gas product generated.

According to the JORC Code, any Identified Resource must have potential for economic utilisation. The Sargon Coal Resource is most suitable for treatment by UCG, and this valuation is based on that eventual economic outcome.

5.1 Underground Coal Gasification

Coal is utilised primarily as an energy source or as a source material for the manufacture of associated products. There are main four major ways coal is utilised to produce energy.

1. Solid coal, mined and processed and burnt as a solid energy source
2. Coal converted to gas through controlled combustion, followed by utilisation of the gas. This includes conversion of the gas to liquids (Coal-to-Liquids processes, or CTL).
3. Extraction of methane gas from coal seams and generation of “natural gas” products (Coal Seam Methane – CSM)
4. Underground conversion of the coal to synthesis gas, followed by extraction of the gas to the surface (UCG)

The economics of the different options depends on a number of factors, and for the purposes of this valuation, SRK has applied numbers for these factors based on the available literature and where possible by reference to data from UCG operations or experiments. No other economic utilisation is considered likely.

5.1.1 Valuation methodology

The Sargon Coal project is an early stage project, and as such, methods of analysis that rely on the assessment of cash flow or risks based on reserves are not applicable. There are four main ways of assessing early stage project values:

The major methods used to value exploration properties are:

- Multiples of Exploration Expenditure (MEE)
- JV terms – Comparable Market Value
- Rules of Thumb
- Geoscience Ratings methods
- Risk-based methods

The first method (MEE) is applicable where projects have no direct comparisons for a Comparative market Value approach, and no Identified Resources. This is not the case for the Sargon Project. Similarly, geosciences ratings methods are best applied to projects where there is no Identified Resource, so is also not considered in the case of the Sargon Project.

In the case of Sargon, a “Rule of Thumb” can be applied to determine a likely project product value, but this cannot be applied easily to determine a current project value, as there are no similar transactions against which to benchmark the project stage. In other words, there is no empirical way to determine either the volume of Syngas related to the coal tonnes, or to determine the calorific value of the Syngas (dependant on the process used, mainly air or oxygen injection), to derive a numerical estimate.

SRK has therefore opted for a method that relies on assessing a potential product value, based on conversion factors from comparative projects, and applying a risk-based method to discount this value against project risks and likely project cost profiles.

Using this approach, quantifying both the costs and the risks are the main factors that need to be addressed. The risk is determined as a probability the project will not proceed to the expected economic outcome.

The basis for discounting using the SRK Risk Method is a simple formula (shown below) that is applied to each project stage, starting from the expected project product value and discounting this through the project stages to the current stage, to give a Present Value (Equation 1):

Equation 1: Project stage discount method: PV = P x TV – C

Where:

PV = Present value

P = Probability of advancing to next stage

TV = Target value (Expected project product value)

C = Cost of exploration and development

All projects proceed through a number of stages in reaching their goals. For the Sargon project, with the product from the coal resource identified as Syngas generated by in situ coal gasification, SRK has assessed four stages remaining for the project.

1 ***Continued exploration***: As has been pointed out by Xstract, the current resource of 194 Mt of Indicated plus Inferred Resources is small compared to similar UCG projects. EMPL will also need to undertake additional exploration drilling to upgrade the Inferred Resources to Indicated.

2 ***Scoping study***: Testing of suitability of Resources for UCG. Ongoing infill drilling to upgrade Indicated to Measured to ensure structural continuity of the coal for trial burn. Further testing and laboratory studies. Ongoing exploration.

3 ***Pre-feasibility and trial production***: This requires testing of an underground “burn” and associated in-ground and extraction infrastructure, and testing variables necessary to determine optimum parameters for full production

4 ***Feasibility.*** In this phase, results from the trial will be worked into a final design with ±5% cost estimation on all production engineering.

Target value (TV) and cost of exploration (C) are both determined from the analysis of comparable historical data in the area. The probability of advancing from the currently defined to the next exploration stage (P) is determined by a set of geological risk factors, detailed further below. The probability of progressing to later stages from then on is defined by historical comparative data, also discussed in more detail below.

5.1.2 Project target product value

Sargon Coal project has an Identified Resource, which allows definition of a potential target value for product generates from the project. The Sargon project relies on the UCG process and extraction of the product Syngas. The composition and value of the product depends on several project parameters that are not as yet defined.

PricewaterhouseCoopers (PwC) undertook a review of UCG for Linc Energy in May 2008 (PwC analysis), provided to SRK by EMPL. The PwC analysis also provided a comparison of the in situ energy content of the seams to the energy extracted by the UCG process. The figure proposed by the PwC analysis is about 67%. The PwC analysis, assumed that resource recovery was 75% and that the product recovery was 90%, which is the same as the recovery for coal seam methane. These figures are from a number of sources referenced in the report.

In particular, the CSIRO review estimates about 70% resource recovery and 90% product recovery, and Chinese targets currently at 80% resource utilisation.

Other studies, such as Steinberg (HCE, LLC) in 2005 suggest that low rank coal (lignite) has a thermal efficiency of resource conversion of about 62%, which if combined with a product recovery efficiency of 90% results in an overall recovery of about 56%. Carbon Energy in 2008 had modelled its recovery from its resource at Bloodwood Creek at 50% of total in situ energy. The Reserves statement for Carbon Energy does not specify the underlying resource, so current estimates are not easily available.

At Chinchilla, the underground operation was on a 10 m-thick coal seam and the trial plant resulted in a 75% total energy recovery (Pana, 2009).

The market price for the product is also a variable, as it depends strongly on the processes used to generate the Syngas. The total calorific value of the Syngas may then vary significantly, so range of values can be assessed by varying the price about a mean market value.

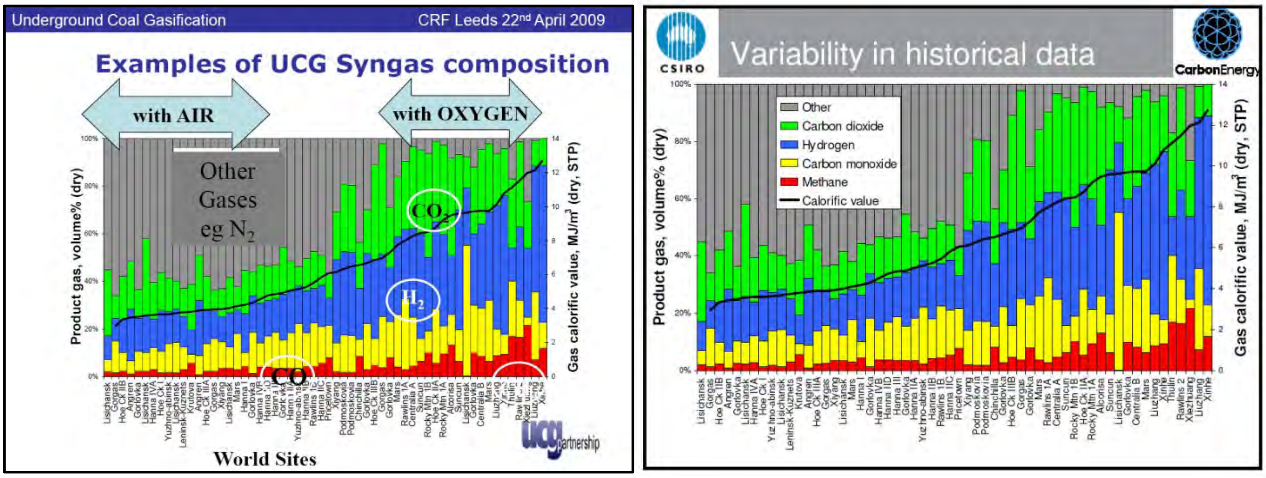


Figure 5-1: Variation in Syngas composition and calorific value by location (coal type?) and process

Source: Fergusson (2009)

The market value of Syngas at surface is assumed to be A$4/GJ, as in the PwC analysis. Current economic conditions are not significantly different, and this is still a reasonable assumption as to long-term price. SRK has used this figure, but includes a range based on the potential possible calorific outcomes from the projects using oxygen, as shown in Figure 5-1.

Using 50% as a low-end figure and 63% (PwC analysis) as a high-end figure, the total product value for the Sargon project is shown in Table 5-1. Obviously, the costs associated with different production technologies need to be considered, but at the current stage, this is assumed to comprise only a few percent of the Syngas value.

Table 5-1: Total product value of Sargon Coal

		(A$M)	*(A$/tonne)*
PwC analysis	Sargon Indicated	3,137	39.44
	Sargon Inferred	5,062	31.30
50% assumption	Sargon Indicated	2,324	39.56
	Sargon Inferred	3,750	31.40

5.1.3 Quantification of Project Risks - Probability Factors

Each stage of the project has a certain risk factor that may have negative impacts on the project viability. In assessing an overall project value, these risk factors are quantified to allow a present resource value to be calculated.

At each stage, each of these factors are given probability risk weightings between 0.5 and 1.0 depending on the perceived importance of these features in the geological model being invoked. Conversely, the absence of features favourable to successful utilisation (e.g. no cap sequence) are also given a low probability weighting between 0.0 and 0.5. The absence of data or knowledge is represented by a probability risk weighting of 0.5. The total project risk at each stage is calculated using Equation 2.

Equation 2: Risk probability: P = P1 x P2 x P3 x P4

5.1.3.1 Stage 1 probabilities

This probability measures the probability that additional drilling will upgrade the resources to the next stage. This is both to increase the total resources and to upgrade the Inferred Resource to Indicated classification. It measures the likelihood for both tonnage and for quality and geometry. The resource geometry is not well known in the south or west of the major NNW-striking fault. Additional resource blocks as identified by EMPL are currently not drilled. SRK has suggested a probability of 0.25 for new areas and Inferred resource, and a probability of 0.75 that all current Indicated and Inferred resource will be suitable for future Reserve classification. These assignments are somewhat subjective, partly assessed on the15% to 20% of the current resources outside of known contiguous structural blocks.

5.1.3.2 Stage 2 probabilities

The key factors that affect the assessment for suitability of the resource for UCG are:

- Coal seam geometry
- Coal Composition and impurities
- Coal discontinuities
- Strata control and water control

Coal Seam Geometry

Coal seam geometry has been discussed by Xenith. The seam extends from less than 129 m deep in the north to about 400 m deep in the south. These depths are acceptable to the UCG process, and should not provide any adverse project risks. The shallower section where cap rock has not been identified may present a project strata control issue for subsidence and groundwater management. Seam thickness for seam C is reported by Xenith as 1.29 m, and is reasonably consistent and thicker (>1.5 m) across the northern part of the tenement. Seam D is similarly consistent, and has an average thickness of 2.7 m with a maximum of 3.34 m. Seam interburden is an average of 1.33 m thick.

It has been recognised that seams greater than 5 m in thickness are preferred for UCG, but there is no real data to suggest that thinner seams are not viable although continuity will be important for sustained burning and gas extraction.

Xenith has calculated a depth cut-off range with 77% of coal at a depth greater than 200 m. SRK has used this to suggest a probability of 0.8 that seam geometry will be suitable to allow an optimal design for the resource recovery modelled.

Coal composition and impurities

Sargon Coal is sub-bituminous and has a relatively consistent calorific value. Xenith has reported the average values of 14.9 MJ/kg and 22.7% ash in C seam and 16.0 MJ/kg with 19.1% ash in D seam, both within the range suitable for UCG. SRK assigns a probability of 0.95 to coal quality issues.

Coal discontinuities

SRK's review of the 2D seismic data indicates that there is potential for disruption of the coal seams particularly by the ENE-striking fault set. In addition, other geometric features such as the monoclinal fold may disrupt coal and overburden permeability. In addition, the Resource is cut by a NNW-striking fault which means infrastructure east and west of the fault would be required if both sections of the resource were to be utilised. SRK suggests further work is required in this area to define the size limits of blocks that will have no or inconsequential disruption. SRK assigns a 0.4 probability that this issue will not present problems in relation to conversion to practical working reserves.

Strata control and water management

SRK has not reviewed this area in detail. However, discussions with EMPL on this issue suggest that, especially at depths greater than 200 m, there will not be significant issues with hot water plumes or environmental issues related to escape of product from the system. However, there is a significant amount of work required in strata control to ensure limited resource losses especially where interburden is thinnest (range is 0.94 m – 2.1 m). SRK estimates a probability of 0.8 given that there are positive indications that the limestone capping will provide adequate control for groundwater management.

The total risk rating for Stage 2, applying Equation 2, is therefore 0.24.

5.1.3.3 Stage 3 probabilities

Prior to undertaking a test "burn", there needs to be a number of technical challenges resolved. The likelihood that there will be a successful burn initially, and that the present project valuation reflects this, is estimated to be 0.5.

This figure comprises the following factors:

- Uncertainty related to extractable gas composition.
- Poor modelling to allow efficient extraction (due to stage of industry research and development generally).
- Site-specific uncertainties.
- Lack of current bench testing to support potential product value outcomes.

These negative aspects which would attract a probability rating of 0.5 (unknowns), are offset by the body of test work which suggest that projects of this type are viable and that the UCG process can be managed with respect to product and production rate. This factor also allows for project delay due to issues that may arise during pilot testing.

5.1.3.4 Stage 4 probabilities

The probability that construction will proceed following the resolution and completion of Stage 3 is very high. The reason for this is that, at this stage, there will be an appropriate engineering solution developed and a project economic model established. Stage 4 will convert that into a construction design. In essence, most project risk including economic risk is factored into the Stage 2 trial or pilot production testing. There are however significant costs associated with Stage 4.

SRK has estimated a probability of 0.90 for this stage.

5.1.4 Estimation of project costs.

The cost of exploration on the Sargon tenements in 2008-09 reporting period (November 2008 – November 2009) was A$3M. The outcome from this work was completion of the drilling programme and a JORC Resource. In determining cost for future work, this figure is the basis for the annual cost of continued exploration. Ongoing exploration drilling costs are assumed necessary, as well as significant infill drilling to ensure particularly seam continuity. Stage 2 drilling costs are estimated to be higher than Stage 1 costs, and these will be added to the Stage 1 costs and carried forward to Stage 3.

SRK has used a cost estimate for the pilot project stage of A$15M. Obviously, a range of testing scenarios is possible but SRK consider that A$15M will cover all the likely methodologies.

For the feasibility stage studies, typical engineering design costs and option studies for coal operations are 5% of capital expenditure for large projects and 10% for smaller projects. SRK has allowed A$25M for completion of the feasibility study, including all drilling and testing costs at this stage.

5.1.5 Project Valuation Outcome

The two assumptions related to the recovery and extraction efficiency, being actual gas recovery data (Carbon Energy, single operation, modern modelling) and the values compiled by PwC (from a range of actual and estimated possible recoveries) are input to the valuation as two separate analytical streams. However, to derive a final preferred valuation model, SRK has taken the average outcome from both streams to settle on a single valuation model (called here the "averaged valuation model"). This method recognises the inherent uncertainty in both of the assumptions, and avoids weighting the valuation too heavily in favour of a potentially optimistic outlook. The result from the analysis provided above is a preliminary project value estimate as shown in Table 5-2.

Table 5-2: Results from application of risk factors to economic outcomes

		Stage 1	**Stage 2**	**Stage 3**	**Stage 4**	**Target value**
		Exploration (A$M)	Drilling (A$M)	UCG Test Burn	Definitive Feasibility	(A$/resource tonne)
Exploration Drilling Costs		3.0	3	A$3		
Infill Drilling costs			5	A$5	A$10	
Project test costs				A$15	A$10	
Engineering and other study costs					A$25	
Probability of success at stage		*75%*	*24%*	*40%*	*90%*	
Sargon Indicated	PwC Assumption	2.31	3.15	13.60	34.83	39.44
	50% Assumption	1.79	2.44	10.67	27.51	31.30
Probability of success at stage		*25%*	*24%*	*40%*	*90%*	
Sargon Inferred	PwC Assumption	0.74	3.16	13.64	34.94	39.56
	50% Assumption	0.57	2.45	10.70	27.60	31.40
		Valuation, (A$M)		**Valuation, A$/GJ**		
Averaged valuation model	Indicated	139.5		0.13		
	Inferred	73.2		0.04		
Total		***212.7***		***0.10***		

This table does not reflect the range of possible outcomes based on varying the input parameters. SRK has used @RISK software to assess the impact of varying the critical inputs to the valuation, as highlighted elsewhere in the report. As the distribution functions associated with the variables are not symmetrical, analysis using this method will alter the preferred valuation figures from the "averaged valuation model" shown in Table 5-2.

Resources uncertainty

Resource uncertainty relates to two main factors highlighted in this report, firstly the drilling density and secondly the structural geology of the area. Whereas the first factor is reasonable, the structural geology represents two uncertainties, being the total recoverable tonnes and the accessibility effects of proximity to major structures. SRK has provided for this risk by setting a low on the Indicated of half the current Resource, and an approximate 10% increase in the Resource as the maximum.

The distribution medians are set at the current reported Resources. These factors are applied to the Indicated Resources. The Inferred Resources are varied 10% about the mean, as it is unlikely that these will vary significantly until additional drilling is carried out.

Product and Resource Recovery

For the PwC analysis case, the resource recovery rate of 70% is allowed to vary in the range 67.5% to 75%. This range encompasses other estimates of recovery reported in the recent literature. The Syngas product recovery in this scenario was varied between 80% and 95%, with the median held at 90%.

For the Carbon Energy case (50% total recovery), this has been varied in the range of 45% to 55%.

Product price

This was allowed to vary asymmetrically from A$2.00/GJ to A$5.00/GJ, along with expected variability in product energy value form UCG project worldwide.

Probabilities of project outcomes

These are allowed to vary across approximately ±0.1. In some cases these also vary asymmetrically.

The resultant input parameters are shown in Figure 5-2.

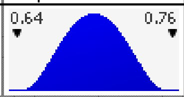
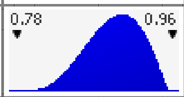
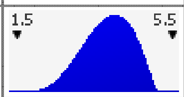
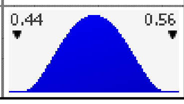
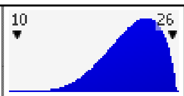
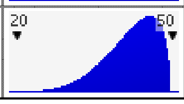
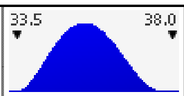
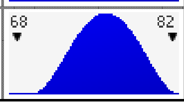
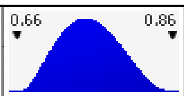
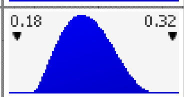
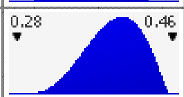
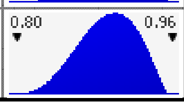
	Name	Worksheet	Cell	Graph	Function	Min	Mean	Max
	Resource Recovery	Product Recovery rates	E4		RiskPert(0.65,0.7,0.75,RiskStatic(0.7))	65%	70%	75%
	Syngas product recovery	Product Recovery rates	E5		RiskPert(0.8,0.9,0.95,RiskStatic(0.9))	80%	89%	95%
	Syngas market price	Product Recovery rates	E6		RiskPert(2,4,5,RiskStatic(4))	$ 2.00	$ 3.83	$ 5.00
	(eg Carbon Energy assumption, Surat BaSin)	Product Recovery rates	E10		RiskPert(0.45,0.5,0.55,RiskStatic(0.5))	45%	50%	55%
Category: Indicated								
	Indicated / C-Seam Coal Mass	Resources	E7		RiskPert(12,23,25.8,RiskStatic(23),RiskName("Indicated / C-Seam Coal Mass"))	-∞	21.63333	+∞
	Indicated / D-Seam Coal Mass	Resources	E12		RiskPert(21,45,48.5,RiskStatic(45),RiskName("Indicated / D-Seam Coal Mass"))	-∞	41.58333	+∞
Category: Inferred								
	Inferred /C-Seam Coal Mass	Resources	E8		RiskPert(33.75,35.5,37.5,RiskStatic(35.5),RiskName("Inferred /C-Seam Coal Mass"))	-∞	35.54167	+∞
	Inferred /D-seam Coal Mass	Resources	E13		RiskPert(70,76,81.9,RiskStatic(76),RiskName("Inferred /D-seam Coal Mass"))	-∞	75.98333	+∞
Category: Probability of success at stage								
	Probability of success at stage / Exploration	Valuation risk discounted	E10		RiskPert(0.675,0.75,0.85,RiskStatic(0.75))	68%	75%	85%
	Probability of success at stage / Drilling	Valuation risk discounted	F10		RiskPert(0.2,0.24,0.3,RiskStatic(0.24))	20%	24%	30%
	Probability of success at stage / UGC Test Burn	Valuation risk discounted	G10		RiskPert(0.3,0.4,0.45,RiskStatic(0.4))	30%	39%	45%
	Probability of success at stage / Definitive Feasibility	Valuation risk discounted	H10		RiskPert(0.81,0.9,0.95,RiskStatic(0.9))	81%	89%	95%

Figure 5-2: Distribution and ranges allowed on the different input assumptions.

The resulting valuations are shown in Figure 5-3.

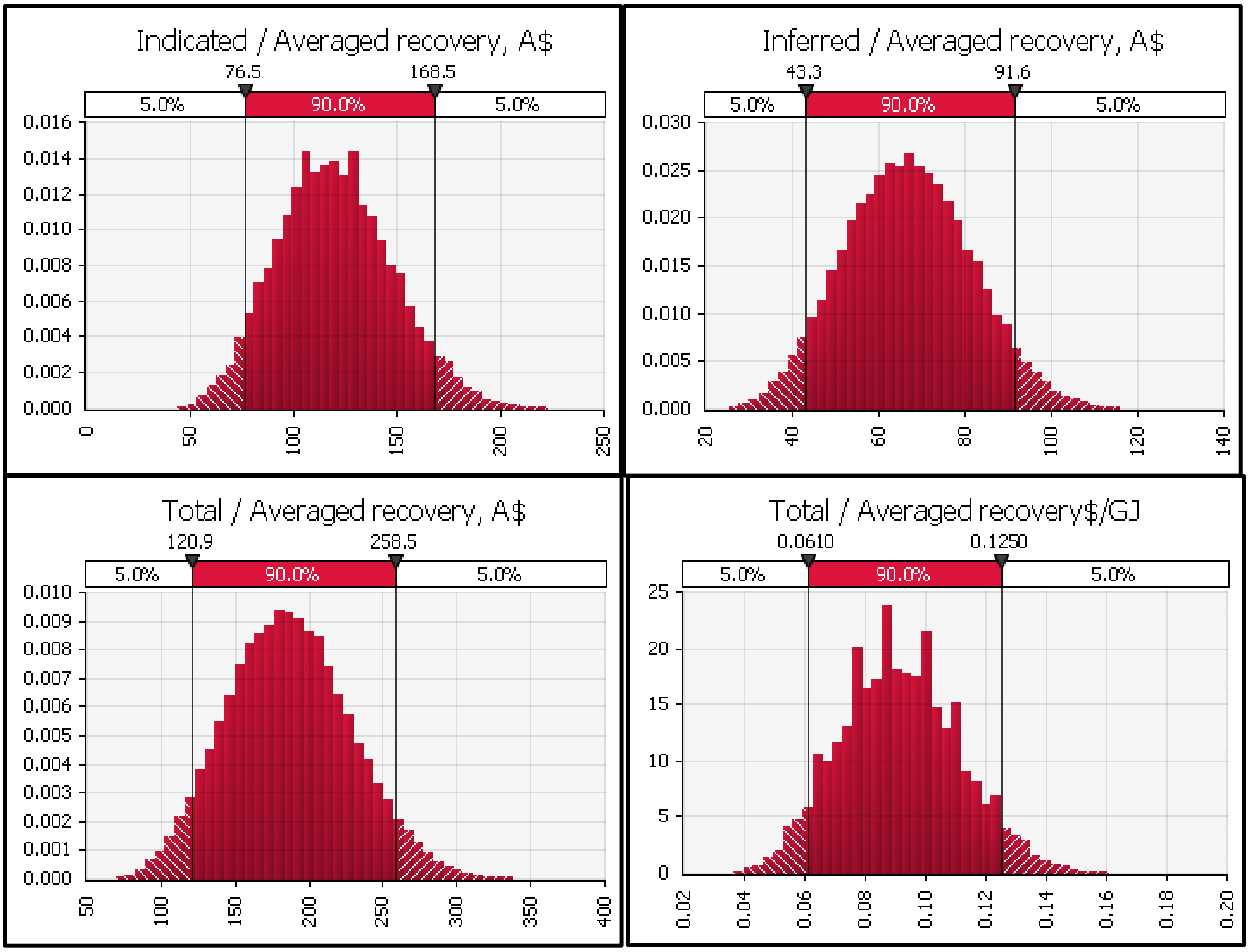


Figure 5-3: Valuation recommendations from Risk Analysis

This results in the following valuation figures:

Averaged Valuation Model:

Indicated component of the valuation is valuation is A$119M, with a low at the 10 percentile of A$76.5M and a high valuation at the 90 percentile of A$168.5M.

Inferred component of the valuation is valuation is A$66.8M, with a low at the 10 percentile of A$43.3M and a high valuation at the 90 percentile of A$91.6M.

SRK's Final recommended valuation is A$186M within a range of A$134M – A$242M.

These preferred values convert to equivalent energy value figures of A$0.09/GJ varying between A$0.07/GJ and A$0.11/GJ respectively.

5.1.6 Sensitivity

The sensitivity of the valuation to the individual variables is shown in Figure 5-4. The total regression coefficient is R^2 = 0.988. Stepwise regression is a technique for calculating regression values with multiple input values. Regression Coefficients from @RISK simulation are appropriate for the Sargon analysis and the analysis has a high total coefficient, and a good correlation between the rank and regression

Most of the correlation is contained in four of the variables, the Syngas market price, the probabilities of drilling success at stages 2 and 3 of future work, and the amount of Indicated Resource in the valuation.

As expected, the most significant variable is the Syngas market price – which is a surrogate for the calorific value of the output product as well as market conditions (as low calorific value gas is worth less in the marketplace).

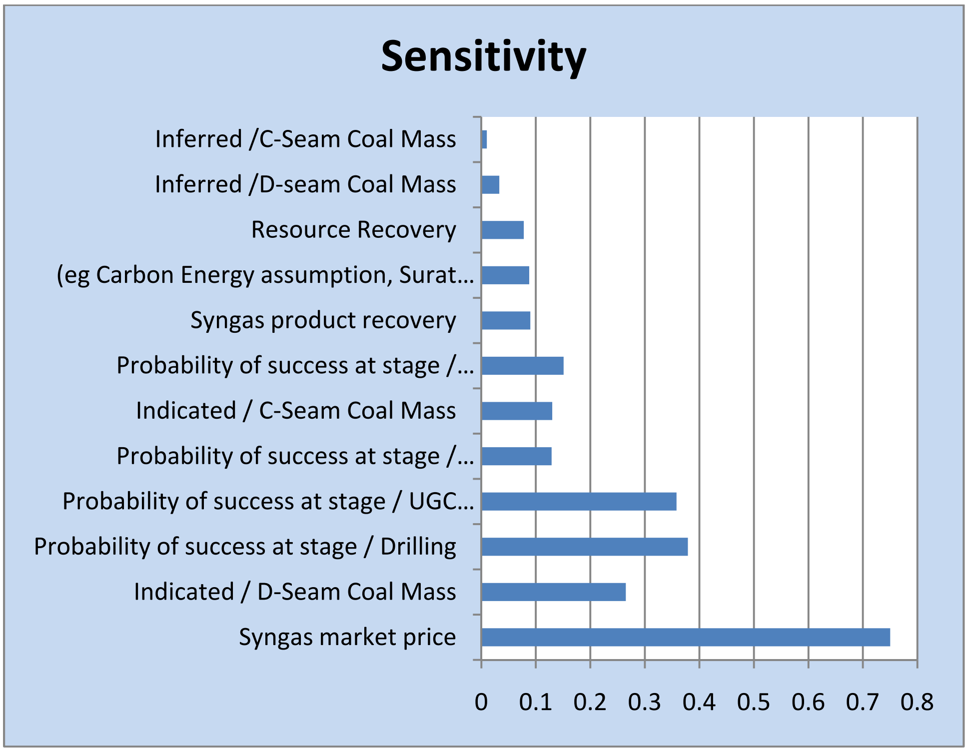


Figure 5-4: Regression Coefficients from @RISK simulation

6. Conclusions and Recommendations

SRK is of the opinion that the parameters used in the estimation are valid, and the geochemical data on which the estimation is based, are of a quality to meet JORC standards. However, SRK is of the opinion that the reporting of the Resources can be greatly improved.

Combining the seam interpretations from the resource model and the seismic data, SRK is of the opinion that the Coal Resource as calculated by Xenith is JORC-compliant, but is conservative in terms of the total in situ resources.

SRK has applied a risk-based valuation to the Sargon on two levels. Firstly, SRK has estimated the probability that project will proceed as expected from its current stage to successful utilisation of the Reported Resource. Based on the application of factors described in the report, a valuation model is constructed (called the "averaged valuation model"), as presented in Table 6-1. Secondly, this preliminary valuation model is analysed for uncertainty in the input factors to determine the preferred valuation and the valuation range.

Table 6-1: Results from application of risk factors to possible economic outcomes

		Stage 1	Stage 2	Stage 3	Stage 4	Target value
		Exploration (A$M)	Drilling (A$M)	UCG Test Burn (A$M)	Definitive Feasibility	(A$/resource tonne)
	Costs	*3.0*	*8.0*	*23.0*	*45.0*	
	Probability of success at stage	*75%*	*24%*	*40%*	*90%*	
Indicated	PwC Assumption	2.31	3.15	13.60	34.83	39.44
	50% Assumption	1.79	2.44	10.67	27.51	31.30
	Probability of success at stage	*25%*	*24%*	*40%*	*90%*	
Inferred	PwC Assumption	0.74	3.16	13.64	34.94	39.56
	50% Assumption	0.57	2.45	10.70	27.60	31.40
		Valuation, (A$M)		**Valuation, A$/GJ**		
Averaged model valuation	Indicated	139.5		0.13		
	Inferred	73.2		0.04		
Total		***212.7***		***0.10***		

Results from varying the major input parameters and analysing all parameters in a single risk model results in a lower overall valuation for the project. This is because SRK has applied more risk to the "down-side" case at the current project stage, because of the large number of unknown parameters relating to potential resource utilisation, and the low level of knowledge of the structural geology of the area and its potential impact on utilisation of the resource for UCG. The final valuation recommendation is shown in Table 6-2.

Table 6-2: Final recommended valuation – Sargon Coal Project

Summary Total Valuation (averaged recovery model)	Low	Preferred	High
In-situ coal value (A$M)	134	186	242
Equivalent Syngas product value (A$/GJ)	0.07	0.09	0.11

The valuation is most sensitive to four aspects of the projects, the Syngas market price, the two probabilities of drilling success at stages 2 and 3 of future work, and the amount of Indicated Resource in the valuation.

As expected, the most significant aspect is the Syngas market price – which is a surrogate for the calorific value of the output product as well as market conditions (as low calorific value gas is worth less in the marketplace).

SRK makes the following specific recommendation relating to the need for future work.

- The current geological model for the Sargon Resource does not include all of the geological information available. The Xenith model has not incorporated the detailed information that may be available from all available data sources, and so the structural geology model is currently at a very early stage.
- SRK suggests that there may be a number of small structures that could potentially impact the utilisation of the Resource for UCG, and recommends that there is a detailed interpretation of the structural geology from the existing seismic data, and that EMPL then review the need to undertake additional processing of the data. It is important to note that relatively small structures can have a significant impact when the coal seams are only a total of 5 m thick.
- In addition to a review of the seismic data, SRK also recommends that EMPL review existing aeromagnetic data. SRK's experience of utilisation of aeromagnetic data in underground longwall mining has provided one of the best techniques in identifying small structures that cause longwall disruption that have otherwise not been detected. The success of magnetics will depend on the magnetic signature of the basement, which SRK has not investigated as part of this valuation review.

7. References

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Appendix 1: ASX Consent Forms

COMPETENT PERSON'S CONSENT FORM

Pursuant to the requirements of ASX Listing Rule 5.6 and Clause 8 of the 2004 JORC Code (Written Consent Statement)

Report Description

Sargon Project – Valuation of Coal Assets

Eneabba Mining Pty Ltd and its holding Company, Eneabba Gas Limited

Sargon Coal Deposits, E70/2758

5 May 2010

Statement

I, Sigit Hardjanto confirm that:

- I have read and understood the requirements of the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("2004 JORC Code").
- I am a Competent Person as defined by the 2004 JORC Code, having five years' experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of *The Australasian Institute of Mining and Metallurgy*.
- I have reviewed the Report to which this Consent Statement applies.
- I am a full time employee of SRK Consulting

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to the Coal Resources.

Consent

I consent to the release of the Report and this Consent Statement by the directors of:

Eneabba Mining Pty Ltd and its holding Company, Eneabba Gas Limited

Signature of Competent Person:

Date: 5 May 2010

Professional Membership:
(Organisation)

Australian Institute of Mining and Metallurgy

Membership No:

991885

Signature of Witness:

Print Witness Name and Residence:
(e.g. Town/Suburb)
Bruce Allan McConachie
SRK Consulting
141 Queen Street
Brisbane

COMPETENT PERSON'S CONSENT FORM

Pursuant to the requirements of ASX Listing Rule 5.6 and Clause 8 of the 2004 JORC Code (Written Consent Statement)

Report Description

Sargon Project – Valuation of Coal Assets

Eneabba Mining Pty Ltd and its holding Company, Eneabba Gas Limited

Sargon Coal Deposits, E70/2758

5 May 2010

Statement

I, Peter Roderick Williams confirm that:

- I have read and understood the requirements of the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("2004 JORC Code").
- I am a Competent Person as defined by the 2004 JORC Code, having five years' experience which is relevant to the valuation of deposits as described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of *The Australian Institute of Geoscientists*.
- I have reviewed the Report to which this Consent Statement applies.
- I am a full time employee of SRK Consulting

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to the Coal Resource Valuation.

Consent

I consent to the release of the Report and this Consent Statement by the directors of:

Eneabba Mining Pty Ltd and its holding Company, Eneabba Gas Limited

Signature of Competent Person: [signature]

Date: **6 May 2010**

Professional Membership: **Australian Institute of Geoscientists**

Membership No:

Signature of Witness: [signature]

Print Witness Name and Residence: **Andre Wulfse, Wilson, Perth**