RobSearch

2 July, 2010

The Directors
Golden Tiger Mining NL
Level 8, 139 Macquarie Street
SYDNEY, NSW, 2000

RA Ref: #4358

Dear Sirs,

GEOLOGICAL SUMMARY OF APEX ENERGY TENEMENTS

This report has been prepared for the Directors of Golden Tiger Mining NL (Golden Tiger) It is understood that the report may be published to the shareholders of Golden Tiger in relation to a proposed Joint Venture between its wholly owned subsidiary, Ormil Operations Pty Limited (Ormil) and Apex Energy NL (Apex).

RobSearch Australia Pty Limited (RobSearch) is an independent, Australian-owned and managed natural resource consultancy, specialising, inter alia, in the appraisal and valuation of petroleum resources and projects. In preparing this report, professional staff and associates of RobSearch provided expert opinion on matters related to their specific expertise.

In preparing this report, RobSearch has relied primarily on information produced by Apex, together with other information in its possession. RobSearch is not in a position to guarantee the accuracy or completeness of such data available to it in the preparation of this report.

It should be noted that in 2004 RobSearch was commissioned as the Independent Expert to review and assess the coal mine methane and coal seam methane interests held by Apex Energy NL.

RobSearch Australia Pty Limited
(formerly *Robertson Australia Pty Limited & Robertson Research (Australia) Pty Limited*)
ABN: 29 000 762 078

INDEPENDENT CONSULTANTS
NATURAL RESOURCES • SAFETY & ENVIRONMENTAL ENGINEERING • PROJECT IMPLEMENTATION

3rd Floor, 80 Arthur Street, North Sydney, NSW 2060, Australia Phone: (02) 9957 3199 Fax: (02) 9954 4011
E.Mail: info@robsearch.com.au

SUMMARY & CONCLUSIONS

Apex Energy NL (Apex) was formed in 2001 with the specific objective of exploring for and producing methane associated with coal mining operations in the Sydney Basin.

The Company holds a 100% interest in the methane rights over two Licences in the Southern Coalfields to the south of Sydney and 70% of a third.

In addition, Apex has agreements to market gas collected from the Metropolitan colliery in the course of de-gassing coals prior to mining operations. It also has agreements with Huntley Heritage and with Sada Services over the Huntley and Clutha mines respectively. The latter area of interest lies within PEL 454 in which Apex holds a 70% interest in joint venture with Carbon Minerals Ltd.

In February, 2004 Apex drilled its first well into the western part of the abandoned Coal Cliff/Darkes Forest mine, within PPL 444 immediately to the south of the Metropolitan colliery, and produced gas at flow rates of up to over 1 mmscfg/d. Although more work will be required to determine recoverable resources and long term deliverability, the well has clearly demonstrated the potential of such abandoned mine workings (goafs) to contain significant gas resources. A number of other prospective goafs have been identified in the Coal Cliff/Darkes Forest, Metropolitan, South Cliften, North Bulli and Huntley collieries, and further exploratory drilling is justified.

Apex also holds an interest in PPL 442, a large tenement extending from PPL 444 to the south of Wollongong. This tenement includes extensive areas of abandoned and working coal mines which provide ongoing opportunities for establishing substantial additional resources of gas from goaf drainage.

Another potentially large source of gas in all three areas is CSM from deeper seams underneath existing mine workings, where stress relief caused by the mining operations can be expected to have created fracturing in the underlying coals. Depending on the depth to which such fractures extend, it can be reasonably expected that permeability in the deeper seams, such as the Balgownie and the Wongawilli, will have been enhanced, resulting in significantly higher gas flows than could be obtained from undisturbed seams.

Recent research has also indicated that a significant proportion of methane from coal seams in some regions is of biogenic origin, and is currently being generated as a result of the interaction of anaerobic bacteria with coal. AGL have concluded that this is the case in the Camden area where they have been developing CSM for some years.

Such bacteria are believed to be introduced to the subsurface through movement of groundwater, and it is reasonable to expect that this process would be facilitated by mining operations. It is thus probable that biogenic processes will significantly enhance production of methane from old workings, such as tapped by Darkes Forest -1, by supplementing the original thermogenic gas in place with ongoing generation. Research by CSIRO indicate that the methane from Darkes Forest 1 is predominantly biogenic in origin.. Research is also being carried out overseas to establish whether such bacterial action can be artificially enhanced

Figure 1

1.0 INTRODUCTION

1.1 BACKGROUND

Over the past decade, exploration for and extraction of methane from coal seams has been rapidly increasing in Australia, particularly in Queensland and New South Wales, and more recently in Victoria. This is usually referred to as coal seam methane (CSM) or as coal bed methane (CBM). (In Queensland it is referred to as coal seam gas (CSG)). Several major projects are currently being considered for the export of CSM as LNG.

In the southern coalfields of the Sydney Basin, high concentrations of methane in coalmines have long presented major safety problems. Since 1996, BHPBilliton has been draining methane from coal seams prior to mining operations at Appin, Tower and Westcliff collieries and using it for electricity generation. BHPBilliton is currently producing in the order of 8 billion cubic feet of gas per annum. Overseas, in countries such as the USA, UK and in Europe, significant quantities of gas

are produced from old mine workings and used for power generation. The gas extracted by such operations is referred to as coal mine methane (CMM).

As set out below, Apex currently holds 100% interests and is operator in two Petroleum Exploration Licenses in the southern Sydney Basin and has an agreement with the operator of the Metropolitan colliery to exploit gas produced from the mine and explore for additional resources. In addition, it holds an 70% interest in a PEL in the Burragorang area to the west.

In early 2004 the company successfully drilled its first well, Darkes Forest -1, into the abandoned workings of the Coal Cliff/Darkes Forest colliery and subsequent testing confirmed the presence of a potentially commercial gas accumulation in the goaf.

1.2 SCHEDULE OF INTERESTS

License Area	Apex Equity	Type of Equity	License Area
Southern Sydney Basin, NSW, Australia			
Consolidated Coal Lease 703 and Coal Lease 379 Authority 200 (Exploration)	80%	Agreement to Exploit Gas (subject to 20% NPI)	58 Km^2
PEL 444	100%	W.I. (subject to 10% NPI)	32 Km^2
PEL 442	100%	W.I. (subject to 5% NPI)	441 Km^2
PEL 454	70%	W.I.	168 Km^2
CCL 700	100%	W.I. (subject to 15% NPI	19 Km^2
CCL 740	70%	W.I. (subject to 10% NPI	36 Km^2

2.0 GEOLOGY & GAS POTENTIAL OF SOUTHERN SYDNEY BASIN

2.1 GENERAL GEOLOGY

Apex's areas of interest lie in the Illawarra region of the Southern Sydney Basin of New South Wales. This basin is of Permo-Triassic age, containing extensive multiple seams of coal in the Upper Permian sequence. Coal is the primary resource in the basin, generating major export earnings, used for generating electricity and for the production of steel in Port Kembla. Exports from NSW & Queensland make Australia the world's largest exporter of coal.

The basin has been subjected to an east-west directed compressive stress, resulting in generally low permeability within the coals, except where the stress had been locally relieved, such as in the area of coal mines.

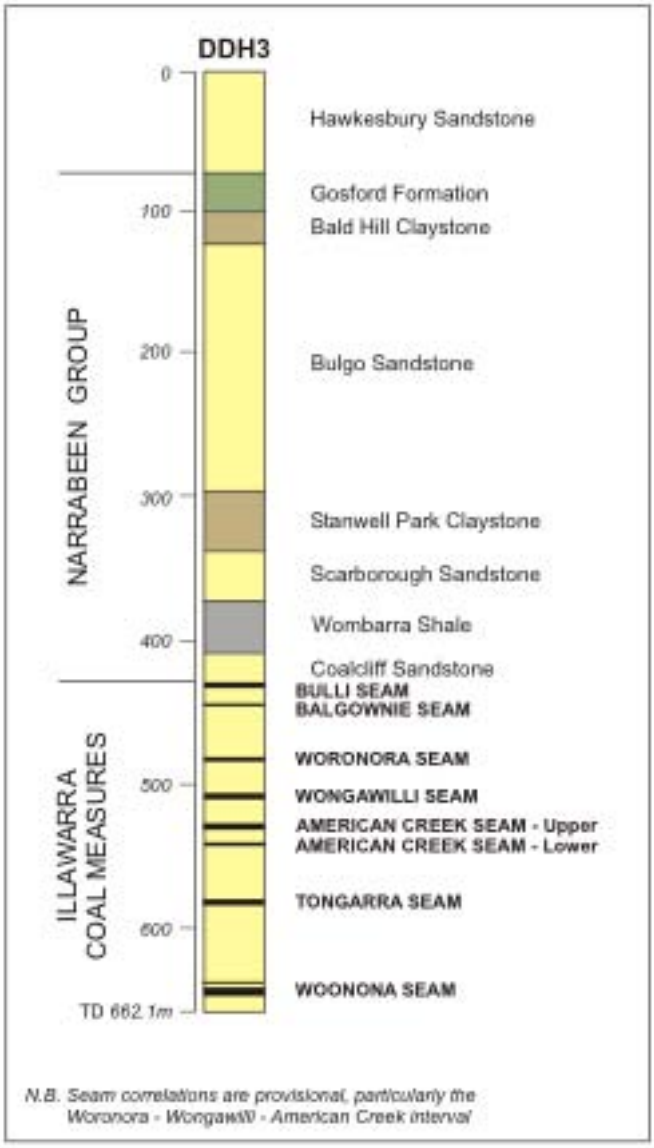
The Late Permian coal measure sequence, the Illawarra Coal Measures, contains the primary coals in the Southern Sydney Basin (**Figure 2**). Most of the coal mining has been carried out in the youngest seam, the Bulli seam, with lesser activity in the underlying Balgownie, Wongawilli and Tongarra seams. As the sequence dips to the north, the deeper seams successively rise to mineable depth in the southern part of the Southern Coalfields

Bulli Seam

This seam is the best developed seam at mineable depth in the northern part of the areas held by Apex. It is currently being mined in the Metropolitan colliery, and was the subject of mining in the Coal Cliff/Darkes Forest colliery.

The Bulli seam in this area ranges from 2 to 4 metres in thickness and is classified as a medium ash, low sulphur, semi-hard to hard coking coal. The measured gas content of these coals generally ranges from 6 – 12 m^3/t, but as discussed later in this report, there is strong evidence that the true values may be significantly higher than those measured.

The seam was 3.2m thick at a depth of 432m in the recent DDH3 corehole drilled within CCL 773.



Stratigraphic Section (Northern area)

Figure 2

Balgownie Seam

The Balgownie is a thin (1 – 3.5 m) seam of good quality lying 10 – 15 metres below the Bulli. Although it has not been mined in the northern part of the area, it has moderate to high gas content

and provides an important secondary target for Apex within all three tenements. The DDH3 corehole encountered 1.48m net coal within a 1.57m seam at 445m

Wongawilli Seam

The Wongawilli Seam is the thickest seam in much of the Illawarra region, averaging 8 metres in thickness. It is higher in ash than the Bulli and Balgownie and has lower measured gas content at equivalent depths, but due to its thickness, it has significant potential for methane extraction. It should be noted that high ash coals may have gas contents as high as low ash coals.

In the western part of CCL 773, however, the DDH3 corehole showed what is interpreted to be this seam as very poorly developed with only 0.7m net coal.

American Creek Seams

Although not mined in the Southern Coalfields, the three American Creek Seams were very well developed in DDH3 with 5.26m of net coal below 508m in depth.

Tongarra Seam

This seam is generally thin with high ash and generally low gas content where measured. At this stage, it is not a major target for Apex, except possibly in the southern portion of PEL 442.

Further studies and test drilling are planned to be undertaken by Apex in the future to determine the CSM potential of this seam within its tenements.

In the north with CCL 773, however, the DDH3 corehole showed the Tongarra to be well developed with2.25m 1.48m net coal within a 3.15m seam at 582m

Woonona (Wombarra) Seam

Although data on this seam are relatively sparse, over 4 metres of net coal with high gas content were encountered in the DDH3 corehole at a depth of 640m. Comparable results were also recorded in DDH5 and an exploration well drilled immediately to the west of the Metropolitan colliery.

2.2 COAL SEAM & COAL MINE METHANE POTENTIAL

Introduction

The coal seam methane potential of the Sydney Basin has long been recognised, as many of the coals have very high gas content, causing serious safety problems throughout the history of coal mining in the area.

It has been estimated that the Sydney Basin contains a total of 26.5 tcf or 752 million m^3 of methane *(Brown et al, 1996)* with potentially recoverable gas estimated at 5,300 PJ. Not all of this gas would be economic at prevailing gas prices, although it is noted that this estimate excludes "*areas occupied the National Park estate, colliery holdings, and urban developments.*" Coal seam methane will be developed in areas closest to markets first, so that the higher production cost for coal seam methane can be offset by lower transport costs as compared to natural gas delivered from fields some 1,000 kilometres away in either the Cooper or Gippsland Basins. The Southern Sydney Basin in which Apex's interests are situated is considered to be more prospective for coal bed methane than the Northern Sydney Basin.

Constraints on realising CSM potential

There are both technical and cultural constraints on all the potential coal seam methane being recovered. Permeability of deeper coal seams (generally greater than 1,000 metres) is very low and it is unlikely that economic rates of production can be attained with currently available technology.

Because the Sydney Basin is structurally under compressive stress, the natural fracture systems in the coal are naturally closed, resulting in low permeability. Artificial fracturing of the coal seams is therefore required to obtain gas flow rates at a commercial level, even at relatively shallow depths. Continuing development of cheaper and more efficient methodology, however, is continuing to improve the commerciality of coal seam methane. It should be noted that, as discussed further below, this high stress regime may improve recoveries from CMM operations.

Coal Mine Methane potential

Data from both currently operating and abandoned mines clearly demonstrates the very significant coal mine methane potential in the Southern Sydney Basin. The most obvious demonstration of this is BHPBilliton's operations at the Appin, Tower and West Cliff collieries. BHPBilliton supply some 8.4 Bcf of gas per annum to power stations operated by Energy Developments Limited (EDL). EDL installed at total of 94 Caterpillar 3516 gas engines, each capable of producing 1.03 MW, utilising coal mine methane of a minimum methane content of 40 percent. The project has operated at full capacity since 1996, and operates 365 days per year. The project achieves a reduction of 2.8 million tons per year of CO_2 equivalent, making it one of the largest greenhouse gas reduction projects in Australia. The Bulli seam in the active mining areas of Appin, Tower and West Cliff collieries has an in-situ gas content of 12-14 m^3/t with a gas composition of 94-98% methane and 1-5% carbon dioxide.

Reduction in methane content in mines clearly provides major improvements in mine safety, and to date this has been the driving motivation for pre-mining drainage operations. The pioneering work by BHPBilliton in the use of extracted methane for power generation, has also highlighted the potential of such gas in contributing to NSW energy needs.

CMM has several operational and economic advantages over CSM, including first, the fact that the mining companies are required to drain methane from coal seams in advance of mining for safety reasons, providing a low-cost source of gas. Secondly, the extraction of coal in a mine creates a significant localised reduction in rock stress, leading to the creation of fractures in the overlying and underlying strata and an increase in permeability (See 2.2.8 below). Thirdly, abandoned workings or goafs provide effective storage chambers for gas as it is desorbed from the coal.

In addition to the direct economic benefits, commercial utilisation of CMM also has the potential to make a significant contribution to greenhouse gas reduction, first by minimising the escape of methane to the atmosphere, and secondly, by reducing dependence on coal as a fuel for power generation.

Carbon Dioxide content

Carbon dioxide (CO_2) is present in varying proportions in all gas associated with the Metropolitan and Coal Cliff/Darkes Forest collieries. CMM from the Metropolitan pre-mining drainage program which will be collected by Apex is expected to contain 40% – 60% CO_2, whereas the gas tested from the Darkes Forest goaf is only 15% CO_2.

The reasons for the varying concentration of CO_2 in the gas adsorbed on coal is not well understood. *Faiz et al 2003* noted that CO_2 content generally decreases with depth. The gas from wells drilled on anticlines typically has higher CO_2 content than that from wells drilled in synclines. It has also been noted that CO_2 content is often higher closer to volcanic intrusions. As discussed further below, it is possible that the CO_2 content may decrease over time, due to dilution by biogenic methane.

It is interesting to note that CO_2 content in the Metropolitan colliery ranges from less than 35 percent in the now largey worked-out eastern part of the mine, to greater than 90 percent in the western part in the immediate vicinity of volcanic intrusions.

BHP's work at Appin demonstrates that providing the CO_2 content of the gas is not excessive, it does not prevent the gas from being used as a fuel for power generation. If, however, it were proposed to sell gas into the gas pipeline network, the CO_2 content would need to be reduced to a low level in a specialised treatment plant to meet pipeline specifications.

Biogenic methane

Biogenic methane is generated during peatification early in the coal process. The majority if not all of this biogenic methane is driven off during the thermogenic coalification process. Secondary biogenic methane is generated from coal when meteoritic water is introduced into coal seams typically following uplift. This meteoritic water often contains bacteria. In circumstance where this meteoritic water contains methane producing anaerobic bacteria (methanogens), secondary biogenic methane can be generated. The methanogens work to decompose the organic matter which may include depolymerisation of coal as a food source. A number of studies are underway to enhance this methane generation by introducing specific methanogens and nutrients to accelerate the process.

Faiz et al, 2003 have demonstrated that a significant proportion of the gas in the Camden area of the southern Sydney Basin is of biogenic origin and imply that over half of the gas content of a coal from the Camden area may be of biogenic origin.

Ingress of meteoritic water into old mine workings can be expected to facilitate biogenic methane production, and significant generation may be occurring in real time. In simple terms, methane is being generated at the present time and will continue to do so. There is also the potential for this process to be accelerated by the introduction of specific methanogens and nutrients.

Secondary biogenic methane generation is probably a very significant factor in explaining the current gas composition in the abandoned Darkes Forest West goaf, where the current level of methane is high compared to that recorded during the mining operation.

Carbon isotope ratios can be used to discriminate between biogenic and thermogenic methane. CSIRO analyses of gas samples from Darkes Forest 1 indicate the methane is predominantly biogenic in origin. Further work is required to understand the timing and quantum of secondary biogenic generation and the conditions that are conducive to optimisation of such generation.

2.2.8 Principles of CMM production

The major physical effect of underground coal mining operations is the relief of stress within the overlying and underlying strata, which in turn leads to the creation of zones of fracturing in the strata above and below the workings. This effect is likely to be particularly pronounced in highly stressed basins such as the Sydney Basin (**Figure 3**).

The consequences of the above are:

- if, as in the Sydney Basin, there are coal seams lying close beneath the seam which has been mined, gas will seep from the underlying seams into the mine workings. Such seepage is a major source of gas in both working and abandoned mines and is likely to greatly increase the recovery of goaf gas from old workings and
- the increase in effective permeability of the underlying seams due to this fracturing is likely to significantly increase the flow rates from wells drilled into them.

Over the last two years, Apex has been carrying out extensive studies into the characteristics of goaf systems, and the processes involved in gas migration into them. Research by Dr Les Lunarzewski of Lunagas has indicated that stress relaxation fracture systems may extend well below the Wongawilli seam under favourable conditions, thus significantly increasing the gas reserves accessible to goaf drainage in the Bulli Seam.

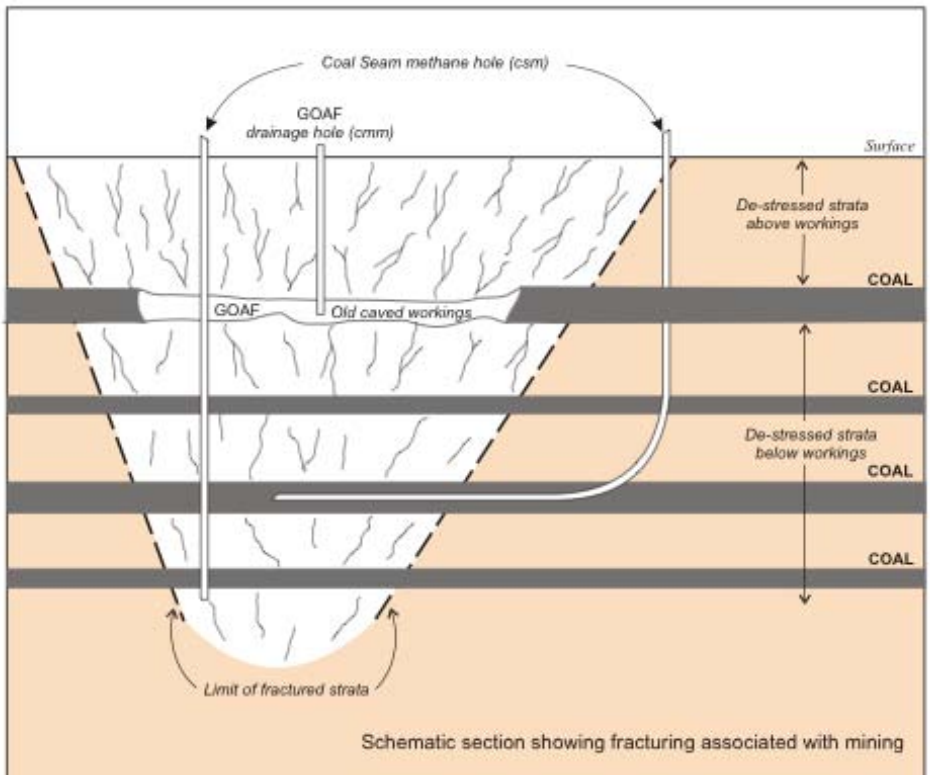


Figure 3

3.0 GAS MARKETS

Thirty four percent of the Australian population live in New South Wales and consume 32 percent of the total energy consumed in the country. This consumption is concentrated in the region around Sydney, extending from the Newcastle region in the north to the Wollongong region in the south. Natural gas consumption is currently around 130 PJ per year (New South Wales total energy consumption is around 1,400 PJ per year). Almost all of this gas is imported from the Cooper Basin in South Australia and the Gippsland Basin of Victoria. Natural gas production, including coal mine methane and coal seam methane, in New South Wales totals less than 10 PJ per year (about 8.4 PJ at Appin and Tower plus less than 1 PJ from Sydney Gas Company's (AGL) Camden operation.

Clearly, gas from either the Cooper or Gippsland basins has higher transportation costs than gas produced close to the population centres of New South Wales. Australian Bureau of Agricultural and Resource Economics (*Bush et al ,1999*) have forecast natural gas consumption of around 230 PJ in 2014/15 in New South Wales. A later ABARE report, *Fainstein et al, 2002* forecasts natural gas consumption in New South Wales to rise to be in the range of 164 to 179 PJ by 2009-10.

There is therefore clearly potential for Apex to sell gas into the NSW gas distribution system at an attractive price if sufficient reserves can be established to justify the capital costs involved. A 15–20 km pipeline would need to be built to connect the Metropolitan and Coal Cliff areas to the gas trunk line west of Appin, and a gas treatment plant would be required for CO_2 removal to bring the gas to pipeline specification.

Alternatively, gas can be utilised with minimal treatment and transport costs for direct electricity generation. The capital costs to Apex are minimal, the sale price of gas is attractive, and an early cash flow to the company makes this approach very attractive. BHPBillliton and EDL have clearly demonstrated the viability of such plants with their Appin Tower Power Project.

A third possible alternative market is the sale of gas directly to an industrial end-user for power generation and process heat. Land zoned for heavy industrial use exists at Coalcliff, within 6 km of the potential goaf drainage sites associated with the Darkes Forest, Coal Cliff and Metropolitan collieries.

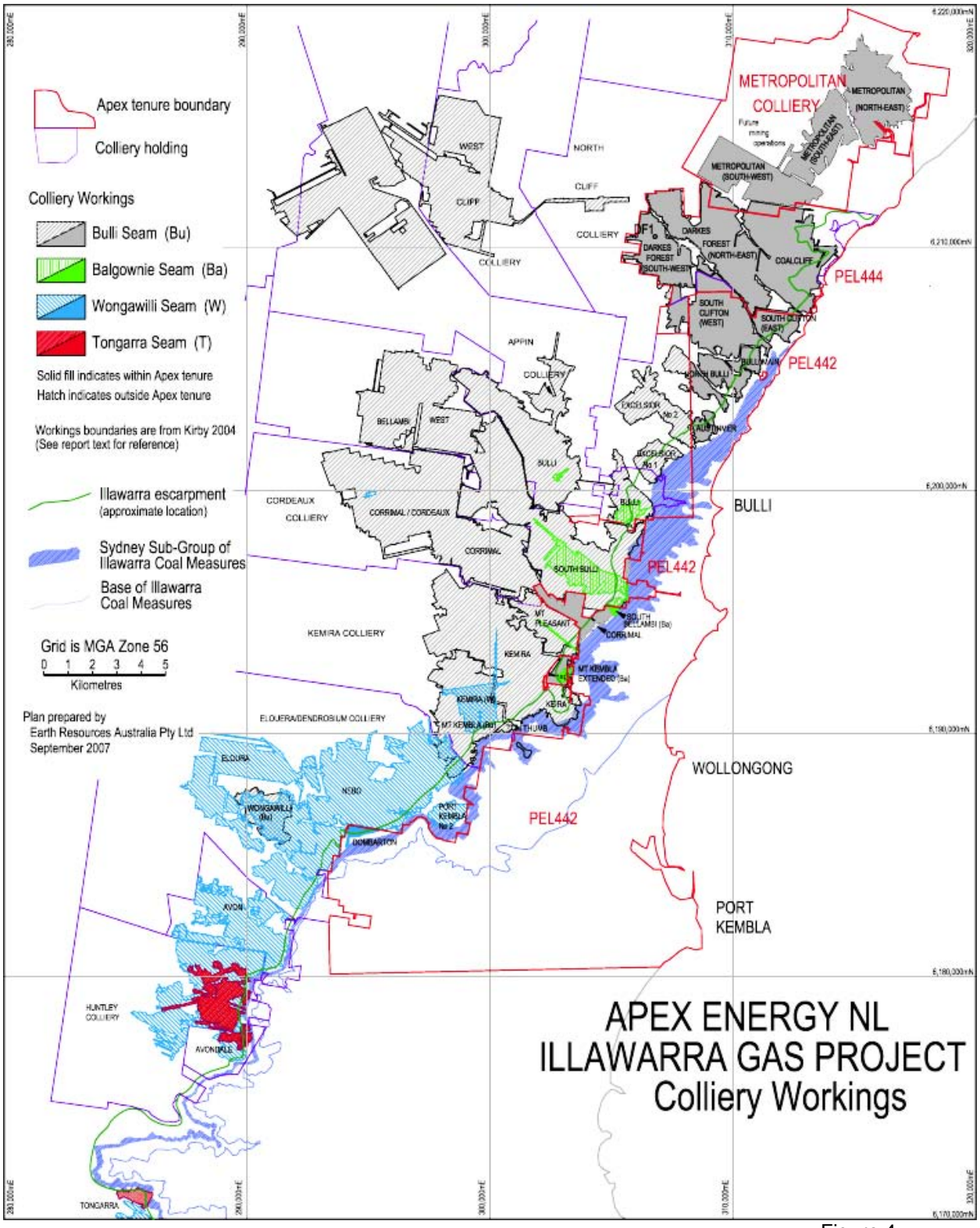


Figure 4

4.0 EVALUATION OF TENEMENTS

4.1 PEL 444, NSW

Introduction

PEL 444 covers the area of the old Coal Cliff/Darkes Forest colliery and is located adjacent and to the north of PEL 442. It covers Mining Lease (ML) 1411 held by Rio Tinto, which has a 10% Net Profit Interest (NPI) on any gas produced from within the license.

The primary targets are goaf gas from abandoned mine workings of the Bulli Coal Seam in the abandoned Coal Cliff/Darkes Forest colliery, such as the Darkes Forest West goaf prospect which was successfully drilled and tested recently, and gas in unworked deeper Balgownie and Wongawilli seams.

Coal Cliff/Darkes Forest Colliery

This is one of the oldest collieries in Australia, and was worked for 114 years from 1877 to 1991. The mine was effectively two workings, the Coal Cliff working to the east and the newer Darkes Forest working to the west.

The goaf gas potential is most likely best developed in the western upthrown Darkes Forest portion of the mine, as some of the eastern Coal Cliff workings may be in part water-filled.

Work to date

Darkes Forest -1 was drilled in 2004 to assess the goaf potential in the upthrown fault block (Darkes Forest West) of the abandoned Coal Cliff/Darkes Forest colliery. The well encountered the Bulli seam at 467 metres and flow tested at 350,000 scf per day (10,000 m^3 per day) through a 3/4 inch choke.

Further testing in 2004 resulted in flow rates of 750,000 scf per day (21,400 m^3 per day) through a 1 inch choke and a rate of 1,200 Mscf per day (34,300 m^3 per day) through a 2 inch choke. It has been reported that these flow rates were achieved without appreciable pressure loss.

In 2007 a new extensive testing program obtained maximum flows of 1,200-1,600 Mscf per day with only very small pressure drawdown after thre days of flowing and with full recovery within ten days to the original pressure. Analysis of the gas showed it to be 81-83% methane which is suitable for local power generation with only minimal processing..

On the basis of these tests it has been estimated that a long-term flow rate of 500 Mscf per day is achievable.

Potential goaf drainage resources

PEL 444 generally covers the area of the Coal Cliff/Darkes Forest colliery, and hence assessment of potential resources and reserves is focussed on the Coal Cliff/Darkes Forest colliery data. Unfortunately, since the mine closed in 1991, all technical data held by the mining personnel has been destroyed (*Bresnehan & Associates, 2003*). Bresnehan concluded that total gas contents were in the order of 6 m^3/t to 12 m^3/t in the mined areas. It is considered that these gas contents estimates are conservative for the same reasons as discussed in 6.1.3.2. Secondary biogenic methane generation is considered to make a significant contribution to the methane resources of the goafs in the colliery.

Mining activity ceased at Coal Cliff/Darkes Forest in early 1991 and it is understood that the mine was not sealed until some 3 or 4 years later. The methane emission rate from abandoned mines declines hyperbolically (rate declines rapidly in initial years following abandonment and then subsequently declines much more slowly). The US EPA, 2004 report that the emission rate for abandoned mines declines to around 20 percent of the initial emission rate (at abandonment) after 3

years. They also report that no data have been published on the pressure within abandoned mines. Proprietary information on shut-in pressures measured at some abandoned mines, range from essentially atmospheric up to 27 psia."

Interestingly, the pressure in the Darkes Forest West goaf (tested by Darkes Forest -1) is now 36.2 psia (21.5 psig) which supports the view that additional methane has been generated since the sealing of the mine. Ongoing methane desorption is not considered to be a major contributor to the current pressure in the goaf. Typical gas composition during mining was 65 percent methane and 35 percent carbon dioxide. Gas from Darkes Forest 1 is 84 percent methane and only 15 percent carbon dioxide. Methane is more readily desorbed from coal than is carbon dioxide, and therefore in the later stages of desorption the gas composition is expected to be enriched in carbon dioxide rather than methane.

CSIRO, 2004 conclude that the methane from Darkes Forest 1 is predominantly biogenic in origin, based on preliminary isotope analyses of the gas. Further work is required to establish the timing and rate of secondary biogenic methane in the Coal Cliff/Darkes Forest goafs.

The presence of secondary biogenic methane is reported by *Faiz et al 2003* in the Camden area of the Southern Sydney Basin. *Bunny, 2002* reports secondary biogenic methane in the Gunnedah Basin.

Biogenic methane generation has been demonstrated experimentally in laboratories by the Alberta Research Council using crushed coal samples. Generation rates ranged from 1 scf/tonne coal/day to more than 1,100 scf/tonne coal/day. Reaction rates in a colliery are expected to be lower than those achieved in the laboratory, due the greater surface area of crushed coal compared to the coal remaining in a colliery. Coal remaining in the Coal Cliff/Darkes Forest colliery is estimated at 28 Mt. The Alberta Research Council is undertaking studies to assess the viability of augmenting biogenic methane generation by adding nutrients and bacteria (e.g. sewage sludge). Clearly there is real upside if it can be demonstrated that biogenic methane generation is actively occurring in the goaf, even if only a fraction of the remaining coal is involved in such generation.

At this time, an estimate of the recoverable methane from the void space and adsorbed onto remaining coal can only be made with no allowance for contribution from ongoing secondary biogenic methane generation. Recoverable methane from the Darkes Forest West goaf is estimated in the range of 0.9 Bcf to 2.1 Bcf with a range of 1.7 Bcf to 4.0 Bcf from the combined Darkes Forest East and Coal Cliff goafs. (Figures 3&4).

The estimates below assume that adsorption effects enhance the storage facility by around three times. More work is needed to confirm the potential due to adsorption effects and the effects could be significantly greater than the estimates above.

Potential recoverable methane: Darkes Forest West goaf

	Recoverable methane from goaf void – 21.5 psig reservoir pressure **(x 10^6 m^3)**	**Adsorbed volume – assuming 1 –3 m3/t at reservoir pressure of 21.5 psig** **(x 10^6 m^3)**	**Total methane recoverable** **(x 10^6 m^3)**	**Total methane recoverable** **(Bcf)**
Darkes Forest West (Darkes Forest#1)	7.76	17.56 – 52.68	25.32 – 60.44	0.898 - 2.145

Potential recoverable methane: Darkes Forest East and Coal Cliff goafs

	Recoverable methane from goaf void – 21.5 psig reservoir pressure (x 10^6 $m^{3)}$	Adsorbed volume – assuming 1 –3 m3/t at reservoir pressure of 21.5 psig (x 106 m3)	Total methane recoverable (Pj)
Darkes Forest East & Coal Cliff	15.74	32.04 – 96.94	1.696 – 4.000

In Belgium, abandoned coal mines are used for gas storage. Gas adsorption effects associated with the remaining coal enhance the storage facility capacity at the Peonnes and Anderlues mines over ten fold. It is understood that the maximum operating pressure is no greater than 40 psi.

CSM Potential in deeper seams

Seams below the Bulli and Balgownie have significant CSM potential in PEL 444. Recent coreholes in the Metropolitan colliery immediately to the north and outcrop data to the south indicate that there is a very high probability that these seams are present in PEL 444. Recoverable methane resource from the Tongarra, Upper American Creek, Lower American Creek and Woonona seams is estimated in the range of 163 Bcf to 272 Bcf. The upper estimate could be significantly higher, once it can be demonstrated that the standard method of gas content determination is underestimating gas content in this area. Realisation of this potential will require technical solutions to the challenge of drilling through the abandoned workings without losing circulation. It is understood that cost effective techniques for such drilling are available but yet untried in this area.

4.2 PEL 442, NSW

Introduction

The license covers an area of 502 km^2 along the NSW coast, from Stanwell Park in the north to Dapto in the south.

AOG Minerals Pty Ltd (a subsidiary of Australian Oil and Gas limited) has a 5% Net Profits Interest (NPI) over the license.

The primary objective in this license is goaf gas from abandoned mine workings of the Bulli Coal Seam and gas in unworked seams, primarily the Balgownie and Wongawilli seams. The Woonoona seam is a secondary target. This seam was encountered in a recent corehole in the Metropolitan colliery to the north with net coal more than 5 metres and high gas content.

Exploration Potential

There are potential methane resources in the abandoned collieries such as South Clifton, Bulli Main, North Bulli and Austinmer, and in seams underlying the Bulli seam such as the Woonona, Lower American Creek, Upper American Creek and Tongarra seams. The extent of any sealing of the South Clifton and the other collieries is unknown at this time, and thus no estimate of methane resource can be made.

Extrapolating seam thickness and gas content for the Woonona, Lower and Upper American Creek and Tongarra seams, it is estimated that recoverable methane resource is 36 Bcf to 59 Bcf in underlying the area of the South Clifton colliery alone. The range in recoverable resource is derived from the assumption that 30 to 50 percent of the gas in place is potentially recoverable. There is

significant upside potential if it can be demonstrated that gas content measurement methods currently used are underestimating actual gas content.

In addition, there is potential for methane from these deeper seams underlying collieries either still operating or still held under title. Access to these deeper seams in these areas would require agreement being reached with the titleholders. It is estimated that 173 Bcf to 288 Bcf of methane could be recovered from these areas, assuming satisfactory arrangements could be reached with the titleholders

There is also potential eastwards of current mining leases extending to the limit of the outcrop of the Illawarra Coal Measures, truncated by an arbitrary cutoff of two kilometres westwards from the coastline. It is assumed that coastal development will preclude access along a corridor two kilometres wide westward of the coastline. This potential is estimated in the range of 50 Bcf to 84 Bcf.

4.3 Gas Agreement over Consolidated Coal Lease 703 and Coal Lease 379 Authority 200 (Exploration)

Introduction

License CCL 703 covers an area of 51.45 km^2. Apex has an agreement to collect and market gas produced by their pre-coal mining gas drainage drilling in the Metropolitan colliery. The Joint Venture also has the option to increase this gas supply by undertaking additional drilling within the coal mining lease (CCL 703).

A 20% Net Profit Interest (NPI) on any mine-related gas produced and sold from within the license, and a 5%NPI over all other gas, will be paid to the owners of the colliery.

Apex have been provided with data on current and future coal mining activities including gas drainage. Bresnehan and Associates in 2004 prepared a report on the deliverability of coal mine methane from the Metropolitan colliery over the next seven years. They concluded that pre-mine drainage will result in minimum of 2.5 MMscfg/d, predominantly from the Bulli seam. Apex have funded the deepening of two recent coreholes to assess the potential of the deeper seams within the full Illawarra Coal Measures sequence. These holes, however, indicated that long-wall mining over the next few years will be in an area of coal with very high CO_2 content, and Apex is therefore likely to delay collection of such gas until mining is again in coals with higher CH_4 content

Goaf drainage potential

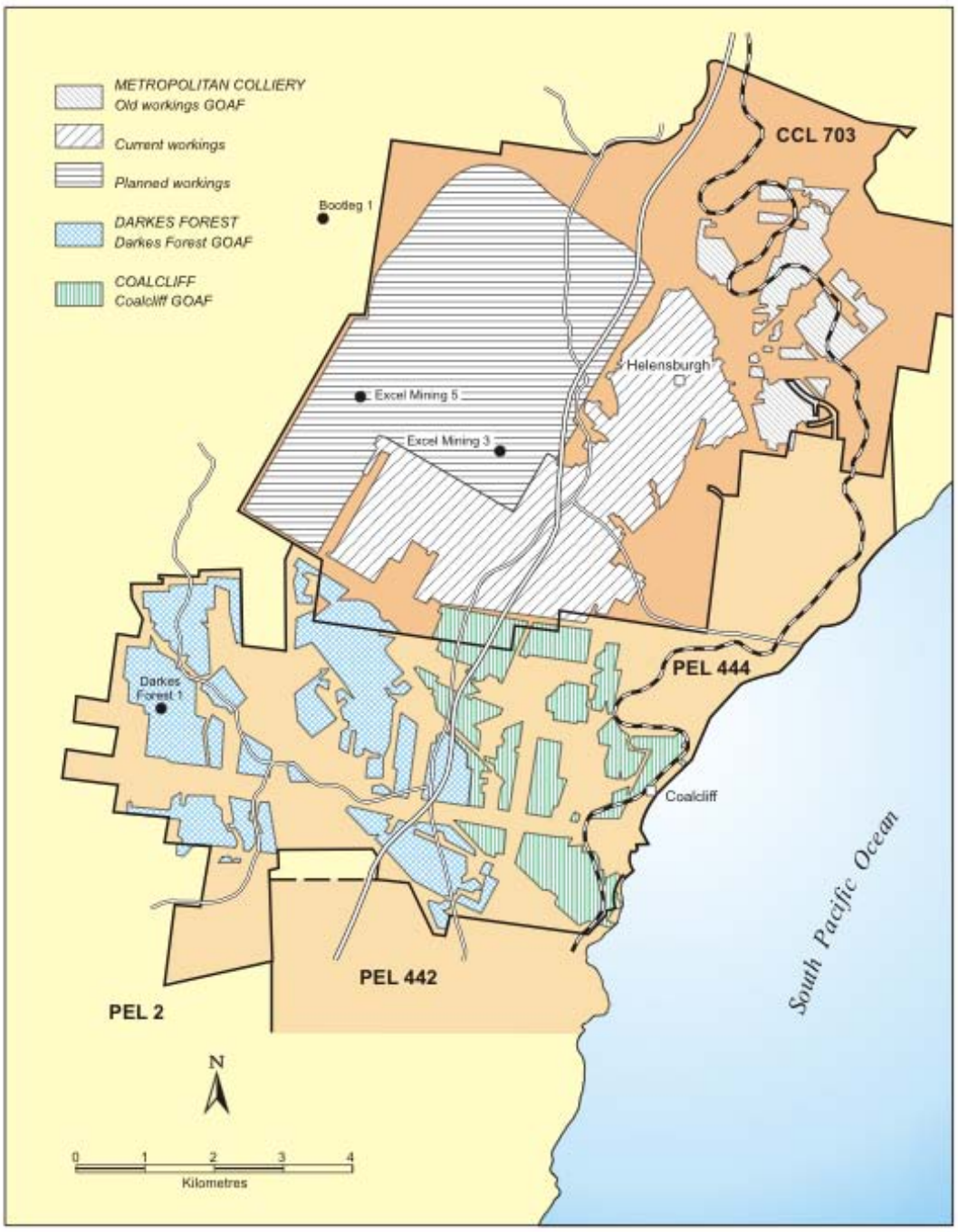
There is also additional CMM potential from the worked out area of the mine. However, it is understood that the methane content of gas in the mined eastern sector was generally low during the mining operations due to higher CO_2 concentrations. In view of the results of the Darkes Forest -1 well (see below), however, it is possible that the methane content may have increased since these sections were abandoned.

The methane content of goafs could be enriched by secondary biogenic methane generation or migration of methane rich gas from seams below the Bulli. At this time, there are insufficient data available to assess the methane potential of the goafs in the Metropolitan colliery. Apex has plans to assess this potential in the near term.

CSM Potential in deeper seams

Significant CSM potential has been identified by the recent DDH3 and DDH5 corehole drilled in the Metropolitan colliery . In particular, the Woonona seam is thick (>5m), has relatively high gas content (13 m^3/t) with methane content greater than 95%. Depth to the Woonona seam is 640 m. Total gas in place in the area of the colliery workings is estimated at 140 Bcf. It is considered that

permeability enhancement via stimulation (fraccing) or in-seam drilling will be necessary to achieve commercial production rates. Sydney Gas produces from the Bulli seam at comparable depths following fracture stimulation. CH4 Gas Limited have demonstrated the viability of the surface in-seam technology to produce CSM from coal seams at Grosvenor in Queensland. The seams at Grosvenor are shallower (around 200+m) than the Woonona, however the SIS technology should be applicable for the Woonona seam at the Metropolitan colliery. Bootleg #1 corehole immediately to the west of CCL 703 encountered the Woonona seam with comparable thickness and gas content to that in DDH3.



Colliery workings

Figure 5

4.4 PEL 454, NSW

Apex Energy NL (70% and operator) and Australian Coalbed Methane Pty Ltd (a wholly owned subsidiary of ASX-listed Carbon Mineral NL) (30%), hold PEL 454 in the Burragorang are to the west of the Illawarra licences. The licence includes the area of CCL 740 over the now shut-in Clutha mine in which Sada Services Pty Ltd retains a 10% NPI..

The licence covers a net area of approximately 168 square kilometres embracing the extreme southwestern margins of the Sydney Basin, west of Mittagong, and as shown in Figure 1. The application was lodged to permit a preliminary assessment of the potential for biogenic seam gas generation both in unmined seams, and in mined areas (goaf) adjacent to the seam outcrop/subcrop areas, where gas producing microbes may be introduced to the seams along with groundwater intake.

Very little work has been done on seam gas in this part of the Sydney Basin. The seam gas activities of Sydney Gas Company further to the east in PEL 2 and PPL 1 are well known, and biogenic methane is a significant component of the seam gas in SGC's "high production fairway" (Faiz et al, 2003). These authors postulate that the biogenic gas is the consequence of the entry of bacteria-laden meteoric waters both from the basin margins (east and west), and vertically via faults and major fracture systems. What little data is available from the southwestern margin – the area embraced by this application and part of the postulated bacterial intake regions – shows that gas from Burragorang Valley mines (based on carbon isotope determinations) have an extremely strong biogenic signature.

4.5 CCL 700, Huntley Coal Mine

CCL 740 is a 19km^2 area held by HTT Huntley Heritage Pty Ltd. Apex has reached an agreement with Huntley for exploitation of gas resources. Huntley will retain a 15% Net Profit Interest in any production.

5. POTENTIAL METHANE RESOURCES

Several estimates of reserves and resources have been made over the past two years, the most authoritative of which was by MHA Petroleum Consultants from the USA. Their 2P and 3P estimates were based solely on the upper coal seams over about 20% of Apex's acreage

It is clear from the following tables that Apex has substantial potential resources of methane within the tenements in which it holds interests. Of immediate relevance, the potential reserves within the goaf system are such that further wells into goafs are justified, both for gas production and obtaining information on the deeper gas resources.

Area	Category	Gas in Place (Bcf)	Recoverable (Pj)
Illawarra	Probable (2P)	123.8	58.0
Illawarra	Possible (3P)	330.1	151.8
TOTAL	**2p + 3P**	**453.9**	**209.8**
Illawarra	Contingent Resources	890.8	494.5
Burragorang	Contingent Resources	1,638.8	865.4
TOTAL	Contingent Resources	**2,529.6**	**1,359.9**

Note that these 2P reserves includes 6Pj of goaf gas and 52Pj coal seam gas.

Apex have carried out their own estimates (Rogers, 2009) as follows:

Area	Category	Gas in Place (Bcf)	Recoverable (Pj)
Goafs	Probable (2P)		6.2
Illawarra	Probable (2P)		106.9
Illawarra	Possible (3P)		226.8
TOTAL	**2p + 3P**		**339.9**
Goafs	Contingent Resources		70.00
Illawarra	Contingent Resources		673.8
Burragorang	Contingent Resources		780.2
TOTAL	Contingent Resources	**2,529.6**	**1,524.00**

DECLARATIONS

Qualifications

RobSearch Australia Pty Limited (previously named Robertson Australia Pty Limited and Robertson Research Australia Pty Limited) has been established for over thirty years and is one of the largest integrated independent natural resource consulting firms in Australia.

The core activities of RobSearch are in petroleum, minerals and coal exploration and development, including reserve assessment and production planning. The company has extensive experience in valuation of reserves and other assets on behalf of many international oil and mineral companies and financial institutions.

This report has been prepared for RobSearch by J. M. Blumer. The qualifications and experience of Mr Blumer are set out below.

John Blumer - Chairman & Managing Director, RobSearch Australia
B. Gen Sc. , MAAPG, FAusIMM, MMICA, MAIG, MPESA

John Blumer is one of Australia's most experienced independent petroleum consultants, with over 35 years of experience in the Australasian and international oil exploration industry. He formed his own consulting firm in 1975, and became a major shareholder and Director of RobSearch Australia in 1990. He is specifically responsible for all petroleum related activities of the company, specialising in exploration management, valuation of exploration and production interests and the preparation of statutory reports. He is a member of the VALMIN Committee of the AusIMM, advising the Australian Stock Exchange and the Australian Securities and Investments Commission with respect to mineral valuation issues, and is past-President of the Earth Resources Foundation of the University of Sydney.

Independence

RobSearch Australia Pty. Limited or any of the authors of this report have no pecuniary or professional interests which could reasonably be regarded in any way as affecting their abilities to report impartially on the petroleum exploration interests of Apex for Golden Tiger.

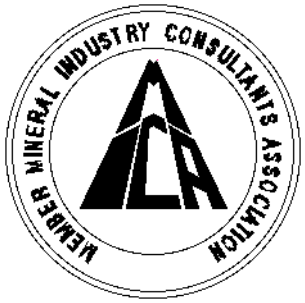
Limitations

This report is based on a review of published information and information proprietary to, and provided by Apex, together with non-confidential information in the files of RobSearch and in the public domain. The data provided and detailed discussions with directors and consultants of Apex cause RobSearch to be confident of the veracity of the proprietary information. The views expressed in this report, however, are solely those of RobSearch.

Conformity

This report has been prepared in conformity with the requirements of the Australian Securities Commission and the VALMIN Code of the Australasian Institute of Mining & Metallurgy and the signatory is bound by the authority of the Ethics Committee of the AusIMM.

RobSearch Australia Pty. Limited



J. M. Blumer B. Gen Sc., MAAPG, FAusIMM, MMICA, MAIG, MPESA
Managing Director