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COAL

# FLUORITE DISCOVERY IN MONGOLIA

30 March 2012

ASX: GUF

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## WEBSITE

[guildfordcoal.com.au](http://guildfordcoal.com.au)

## REGISTERED OFFICE

Suite C1  
1 Honeysuckle Dr  
Newcastle, NSW, 2300

Phone: +61 (2) 4914 5910  
Fax: +61 (2) 4925 3505  
[info@guildfordcoal.com.au](mailto:info@guildfordcoal.com.au)

## KEY PROJECTS

**HUGHENDEN**  
Location:  
Galilee Basin, QLD

**SIERRA**  
Location:  
Bowen Basin, QLD

**KOLAN**  
Location:  
Maryborough Basin, QLD

**SOUTH GOBI**  
Location:  
South Gobi Basin, Mongolia

**MIDDLE GOBI**  
Location:  
Middle Gobi Basin, Mongolia

## HIGHLIGHTS

- Fluorite mineralisation discovered outcropping on Mid Gobi exploration licence in Mongolia
- Laboratory results of field grab samples reveal fluorite mineralisation with potential ceramic grade
- Magnetic survey preliminary findings shows a feature overlaying the area of outcrop and grab sampling location with an approximate size of 3km in length by 1km in width
- Initial drilling and further field mapping is scheduled to commence in April to confirm the nature, quality and extent of the mineralisation
- This exploration will also help determine if there are any other valuable minerals which are often found associated with fluorite deposits such as galena, barite and sphalerite (lead, barium and zinc)



## MONGOLIAN PROJECT OVERVIEW

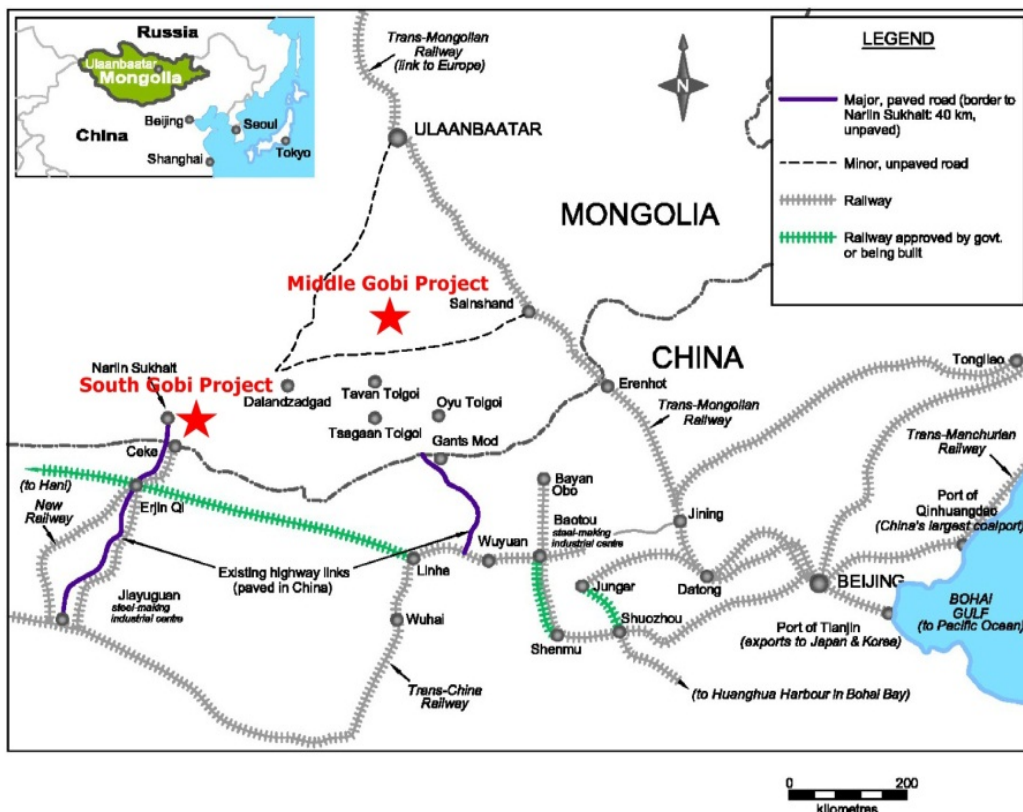
Guildford's interests in Mongolia are held through Guildford's 70% owned subsidiary, Terra Energy.

Terra Energy and its subsidiaries control a number of tenements contained in two coal projects in Mongolia. The coal projects are located in the coal bearing basins of the South Gobi and Mid Gobi which contain both thermal and coking coals.

The **South Gobi Project** consists of four exploration licences and one mining licence located in the South Gobi Province (Umnigovi Aimag) of Mongolia. These licences are situated approximately 1,000km south-west of the Mongolian capital of Ulaanbaatar and approximately 60km from the Chinese border station of Ceke, where coal produced in nearby Mongolian mines is currently transported through to China.

The **South Gobi Project** has a **JORC coal resource** for the proposed North Pit of **70.4Mt** of coking coal consisting of an **Indicated Resource of 39.7Mt** and an **Inferred Resource of 30.7Mt**. A further Exploration Target<sup>#</sup> for the South Gobi Project of **70Mt to 892Mt** of coal has also been estimated by Independent Geologists.

The **Mid Gobi Project** consists of two exploration licences located in the Dundgovi Province which is approximately 200km south of Ulaanbaatar and just over 200km west of the Mongolian railway grid with a logistic route to China via the Erlianhaote border crossing. The Mid Gobi Project has a total **JORC coal resource of 221.4Mt** consisting of an **Indicated Resource of 32.3Mt** and an **Inferred Resource of 189.1Mt**. A further Exploration Target<sup>#</sup> for the Mid Gobi Project of **165Mt to 830Mt** of coal has also been estimated by Independent Geologists.



Map Showing Location of Guildford Projects in Mongolia in relation to Infrastructure

## MID GOBI PROJECT

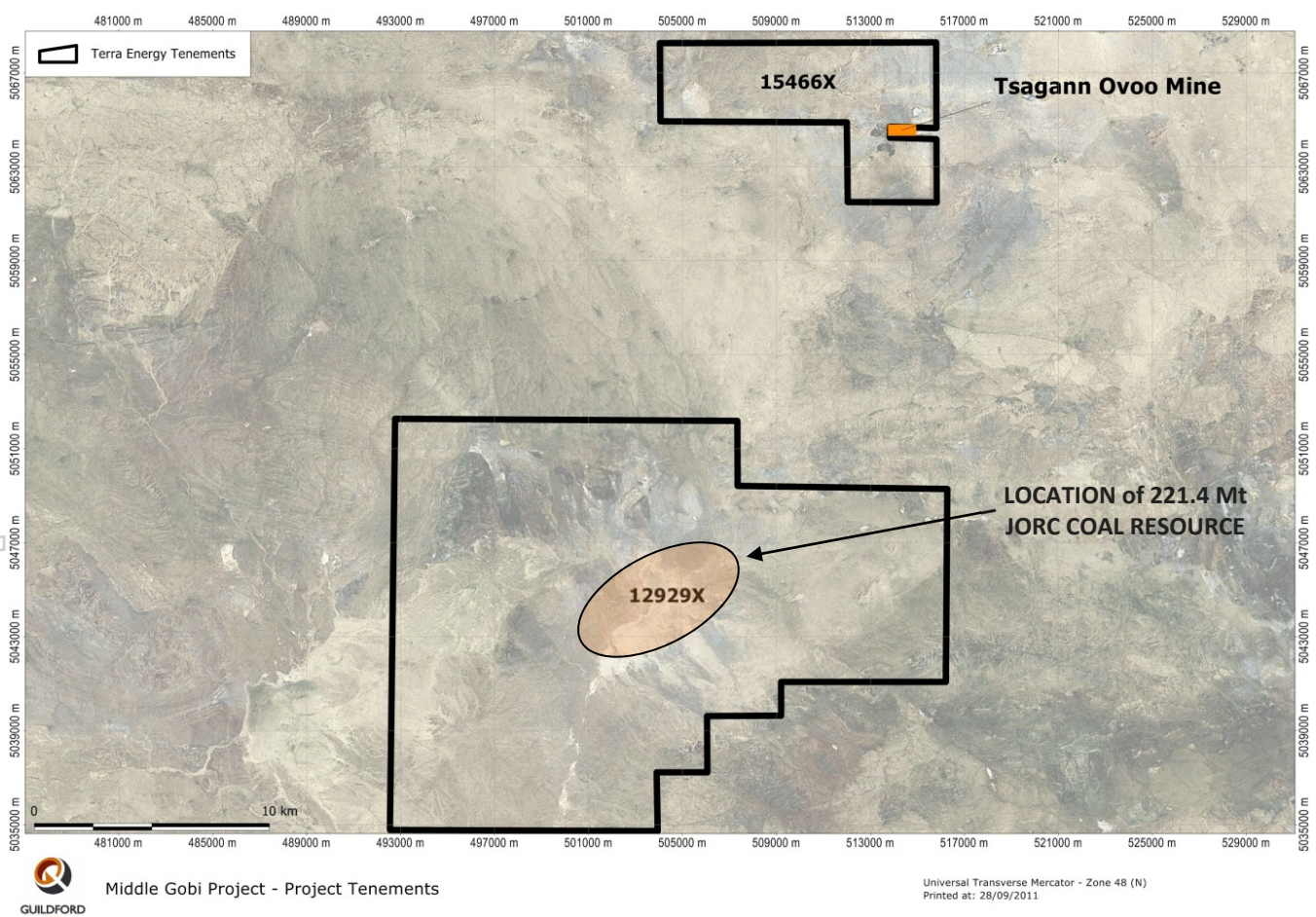
The Mid Gobi Project consists of two exploration licences located in the Dundgovi Province, which is approximately 200km south of Ulaanbaatar and just over 200km west of the Mongolian railway grid with a logistic route to China via the Erlianhaote border crossing.

The two Mid Gobi Project exploration licences have an approximate area of 36,000 hectares and are located in the coal bearing Ongi Gol Basin.

The primary target is coal due to the regional geology which consists mostly of moderately dipping sedimentary basins which potentially provide multiple hard and low rank surface coal targets. The project location is within relatively close proximity to infrastructure for potential customers including Mongolian and Chinese electricity generators.

There are two potential coal deposits located in the Mid Gobi Project

- Tsagaan Ovoo Deposit (Exploration Licence 15466X)
- Tsakhiurt Gobi Deposit (Exploration Licence 12929X)



**Figure 1 Map Showing Location of Guildford Middle Gobi Projects**



## MID GOBI FLOURITE DISCOVERY

### BACKGROUND

During the 2011/2012 winter it was brought to Terra Energy's attention that a number of illegal miners were active on the Mid Gobi Project's exploration license 12929X. The illegal miners were removed by the authorities and security established.

Terra Energy geologists visited the site and collected a number of grab samples (Figure 2) from the area where the illegal mining was being conducted. The samples were brought back to SGS Laboratories in Ulaanbaatar for testing.

Initial analysis of laboratory results indicated that the samples were fluorite of an economic grade. Further exploration has been planned to confirm the size and quality of the mineralisation.

Mongolian mineral law is not mineral specific and allows exploration to be carried out for coal and non-coal mineralisation by the holder of the exploration licence.



**Figure 2      12929X – Field Sampling - Example of Analysed Fluorite Sample**

## ANALYTICAL QUALITY RESULTS

Three of the grab samples taken from the field were sent to the SGS Laboratory in Ulaanbaatar, Mongolia. The sample preparation included weighing, crushing, splitting and pulverising. The samples were then tested for CaCO<sub>3</sub>, CaF<sub>2</sub> and SiO<sub>2</sub>. The results are shown below in Table 1 with the calcium fluoride (CaF<sub>2</sub>) results highlighted.

### ANALYTICAL REPORT

Scheme	WGH79	SCR34	SCR34	CLA07C	CLA07C	CLA07C
Units	Kg	%	%	%	%	%
Detection Limit	0.01	0.01	0.01	0.01	0.01	0.01
Upper Limit	100	100	100	100	100	100
	WtKg	-3.35mm	-75µm	CaCO <sub>3</sub>	CaCO <sub>3</sub> (R)	CaF <sub>2</sub>
TE-001	0.99			0.78	0.76	89.4
TE-002	0.48			0.82		94.0
TE-003	0.24	97.2	99.8	0.78		90.5
Std GBWO07251				0.44		91.1
Blk BLANK						

**Table 1 12929X – Preliminary Field Sampling Analytical Results**

The following grade classifications are given by the US Geological Survey and indicate that the samples taken from 12929X are potentially ceramic grade fluorite. Industry practice has established three grades of fluorite:

- Acid grade, containing more than 97% CaF<sub>2</sub>
- Ceramic grade, containing 85% to 95% CaF<sub>2</sub>
- Metallurgical grade, normally containing 60% to 85% CaF<sub>2</sub>

Fluorite grades are defined by their intended use, but these grades are essentially just averages (USGS 2005 Mineral Handbook).

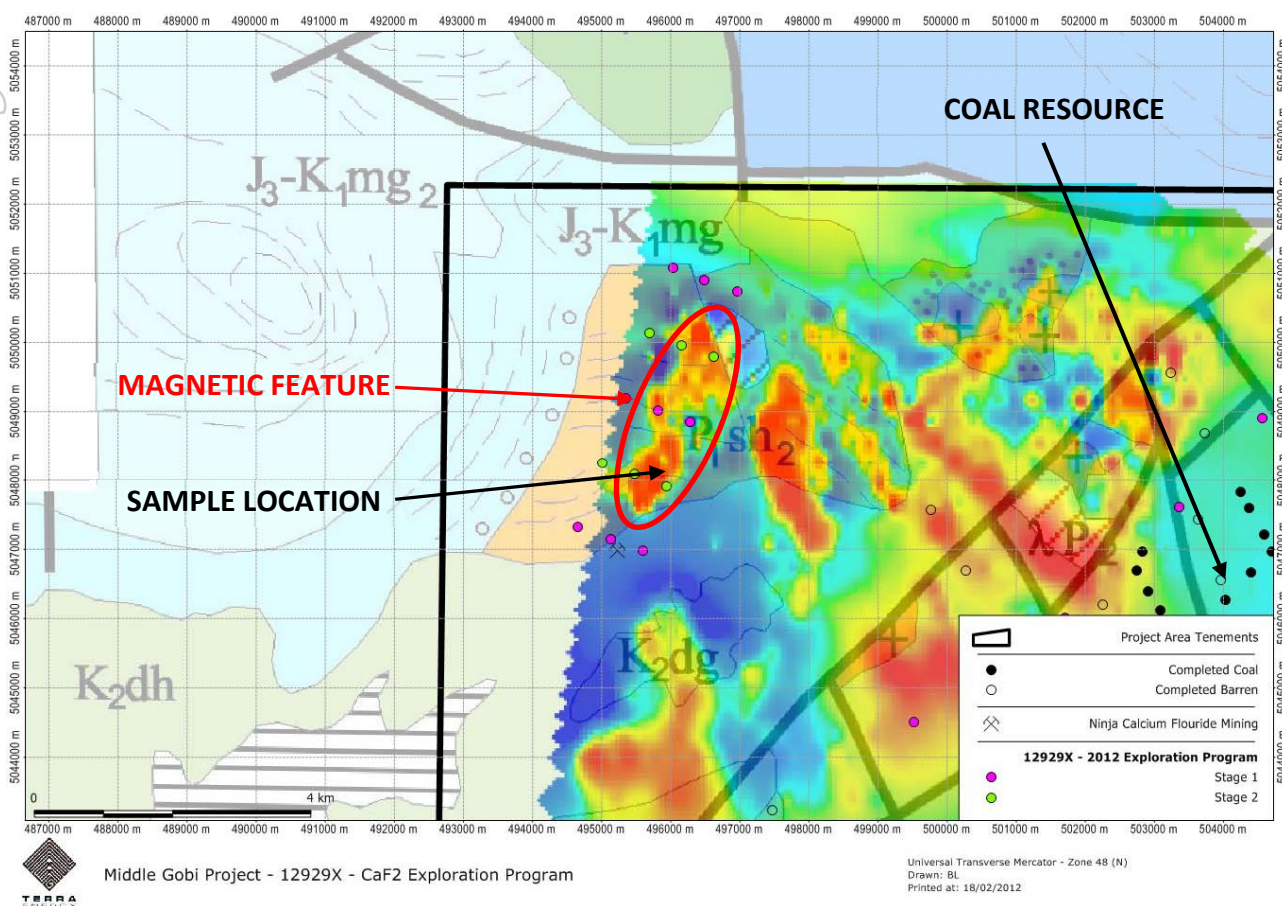
## POTENTIAL DEPOSIT AREA AND FUTURE EXPLORATION

A magnetic survey has been completed on 12929X by Logantek LLC with processing and reporting of the results expected in late March 2012. Preliminary magnetic (TMI) results are shown in Figure 3. The image shows a magnetic feature in close proximity to the area of outcrop and sampling with an orientation approximately north east to south west. The approximate size of the feature appears to be 3km long by 1km wide.

A conceptual soil sampling and drill program has been designed to confirm that the magnetic feature is related to the fluorite samples and to evaluate whether there are any other valuable minerals which are often found associated with fluorite deposits such as galena, barite and sphalerite. The proposed exploration drilling program may vary pending the final magnetic survey findings together with a follow up geological assessment.



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**Figure 3 Proposed Exploration Plan for Fluorspar Supported by Preliminary Gravity Results**

## FLUORITE OVERVIEW

Fluorite (also called fluorspar) is a halide mineral composed of calcium fluoride  $\text{CaF}_2$ . Fluorite may occur as a vein deposit, especially with metallic minerals, where it often forms a part of the gangue (the surrounding “host-rock” in which valuable minerals occur) and may be associated with galena, sphalerite, barite, quartz and calcite. It is a common mineral in deposits of hydrothermal origin and has been noted as a primary mineral in granites and other igneous rocks and as a common minor constituent of dolostone and limestone. The most common occurrence of fluorite is as vein deposits, usually associated with lead and silver ores and with quartz, calcite, dolomite, and barite.

There are two principal types of industrial use for natural fluorite, corresponding to different grades of purity:

### Metallurgical grade fluorite

Commonly called Metspar, which contains less than 97% (typically 85% or more)  $\text{CaF}_2$ . This is used for flux in steel production and in the manufacturing of ceramics, opalescent glass, enamels and cooking utensils.

### Acid grade fluorite

Commonly called Acidspar, which contains 97% or more  $\text{CaF}_2$ . This is used to make hydrogen fluoride and hydrofluoric acid; manufacture of fluorochemicals, which includes fluorocarbons, fluoropolymers and fluoroelastomers; manufacture of  $\text{AlF}_3$  and synthetic cryolite used in aluminium smelting.



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**Further Fluorite Quick Facts:**

- Current global market size approximately 5.5 Mtpa to 6 Mtpa
- China produces in excess of 50% of the fluorite produced and is also the largest consumer
- Acid grade fluorite (>97% purity) accounts for 65-70% production and the balance is metallurgical grade (<97% purity)
- Current acid grade China spot price is approximately US\$600/tonne
- Recent spot price increases have been driven by Chinese demand and factors including environmental concerns, production/export restrictions, and industry consolidation

*(Source: Globe Metals & Mining, Investor Update Africa Down Under Conference, 01Sep11)*



## ABOUT GUILDFORD COAL

Guildford Coal has established a portfolio of coal exploration tenement areas in Queensland, Australia and more recently in Mongolia with a combined JORC resource of **2.172 billion tonnes** across the Hughenden Project (Qld), South Gobi Project (Mongolia) and Middle Gobi Project (Mongolia). In addition to these resources, Exploration Targets<sup>#</sup> have been prepared for Projects managed by Guildford in Queensland and Mongolia of **0.915Bt to 8.658Bt** of thermal and coking coal.

Guildford Coal's **Queensland** tenements cover an estimated area of 20,000 square kilometres and are defined within project areas as follows:

- Hughenden Project (Galilee / Eromanga Basins):
  - FTB (Qld) Pty Ltd (Guildford 100%)
  - Orion Mining Pty Ltd (Guildford 80%)
  - White Mountain Project (Guildford 56%)
- Sierra Project (Bowen Basin);
- Kolan Project (Maryborough Basin);
- Sunrise Project (Surat/Bowen Basin);
- Monto Project (Nagoorin Graben).

Guildford Coal also has an equity share in 7 tenements contained in two projects in **Mongolia** through its 70% shareholding in Terra Energy. The coal projects are located in the South Gobi and Middle Gobi coal bearing basins which contain thermal and coking coals.

Guildford Coal's key objective is to create shareholder value through the identification, securing and exploration and potential development of coal deposits. In order to achieve this objective, Guildford Coal intends to:

- Drill and assess existing exploration permits with the aim of establishing coal resources;
- Complement and diversify Guildford Coal's existing portfolio through application for and acquisition of additional coal assets;
- Undertake project development for high priority targets where economic coal deposits are proven; and
- Ultimately produce and sell a variety of coal products into export markets if successful in exploration objectives.

For and on behalf of Guildford Coal Limited.



**MICK AVERY**  
Managing Director  
T: +61(2) 4914 5910





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Guildford Project	JORC Resources (Mt)				Exploration Target <sup>#</sup> (Mt)		Potential Coal Type	Independent Geologist
	Measured	Indicated	Inferred	Total	Lower	Upper		
Hughenden*			1,619	1,619	580	5,720	Thermal	MDM
White Mountain@			262	262	40	815	Thermal	MDM/Palaris/Xstract
Kolan^					60	400	Coking	MDM
<b>AUSTRALIAN TOTAL</b>	<b>0</b>	<b>0</b>	<b>1,881</b>	<b>1,881</b>	<b>680</b>	<b>6,935</b>		
North		39.7	30.7	70.4	14	73	Coking	MDM
Central					56	279	Coking	MDM
East					0	241	Coking/Thermal	Palaris
West					0	300	Coking/Thermal	Palaris
<b>South Gobi</b>	<b>0</b>	<b>39.7</b>	<b>30.7</b>	<b>70.4</b>	<b>70</b>	<b>893</b>		
<b>Mid Gobi</b>	<b>0</b>	<b>32.3</b>	<b>189.1</b>	<b>221.4</b>	<b>165</b>	<b>830</b>	<b>Thermal</b>	<b>MDM</b>
<b>MONGOLIAN TOTAL</b>	<b>0</b>	<b>72.0</b>	<b>219.8</b>	<b>291.8</b>	<b>235</b>	<b>1,723</b>		
<b>TOTAL</b>	<b>0</b>	<b>72.0</b>	<b>2,100.8</b>	<b>2,172.8</b>	<b>915</b>	<b>8,658</b>		

\* The Hughenden Project consists of numerous tenements, and the Exploration Target<sup>#</sup> relates to the group of tenements. The Inferred Resource relates to EPC1477 and EPC1478.

@ The White Mountain Project consists of 262Mt JORC Inferred Resource developed by MDM on EPC1250 and EPC1260, an Exploration Target of 40Mt to 70Mt on EPC1250 estimated by Xstract and an Exploration Target of 0 to 745Mt estimated by Palaris on EPC1260

^ The Kolan Project consists of two tenements, EPC1872 and EPC2003.

## **# Exploration Target**

References to Exploration Targets in this document are in accordance with the guidelines of the JORC Code (2004). As such it is important to note that in relation to reported Exploration Targets any references to quality and quantity are conceptual in nature. Exploration carried out to date is insufficient to be able to estimate and report coal resources in accordance with the JORC Code (2004). It is uncertain if further exploration will result in the determination of a Coal Resource.

## **Competent Persons Statement**

Technical information in this report in relation to fluorite mineralisation has been compiled by Mr Peter Goodman, who is a Member of the Australasian Institute of Mining and Metallurgy (Member #307830) and has had sufficient experience which is relevant to the style of mineralisation under consideration and to the activities which are being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Goodman is employed by Terra Energy LLC (Guildford Coal Ltd subsidiary) and consents to the inclusion of the matters based on his information in the form and context in which it appears. Mr Goodman has over 10 years experience in the processing of fluorite type deposits.

Technical information in this report in relation to coal mineralisation has been compiled by Mr Brendan Lloyd, who is a Member of the Australasian Institute of Mining and Metallurgy (Member #208658) and has had sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities which are being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Lloyd is Exploration Manager for Guildford Coal Limited engaged under secondment from Palaris Mining Pty Ltd and consents to the inclusion of the matters based on his information in the form and context in which it appears. Mr Lloyd has over 10 years experience in exploration and mining of coal deposits.

## **JORC Coal Resource Competent Persons Statement**

Technical information in this report in relation to the JORC Coal Resource for South Gobi, Middle Gobi, White Mountains and Hughenden Projects has been compiled by Mr Mark Biggs, Principal Geologist of Moultrie Database and Modelling. Mr Biggs is a member of the Australasian Institute of Mining and Metallurgy (Member #107188) and has over 25 years of experience relevant to the style and type of coal deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined by the Australasian Code for Reporting of Minerals Resources and Reserves (JORC) 2004. The resource information in this report is being released to the Australian Securities Exchange. Mark Biggs consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The estimates of the Coal Resources presented in this Report are considered to be a true reflection of the Coal Resources as at 30<sup>th</sup> March 2012 and have been carried out in accordance with the principles and guidelines of the Australian Code for Reporting of Coal Resources and Coal Reserves published in September 2004 (JORC Code).

### **Forward Looking Statements**

*This Announcement contains certain "forward-looking statements". The words "anticipate", "believe", "expect", "project", "forecast", "estimate", "likely", "intend", "should", "could", "may", "target", "plan", "consider", "foresee", "aim", "will" and other similar expressions are intended to identify forward-looking statements. Indications of, and guidance on, future production, resources, reserves, sales, capital expenditure, earnings and financial position and performance are also forward-looking statements. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are outside the control of Guildford.*