

# Alkane Resources

## Long term buy - Price Target (\$1.10)

4<sup>th</sup> June 2008



### Investment Data

Share Price (cents)	43
Ord Shares (m)	241.8
Market Cap (\$'m)	\$103
Enterprise Value (\$'m)	\$90.5
Options (m)	8.7
Net Cash (31 March 08)	\$12.5
52 week Low/High (cents)	21.5 / 51.5

### Company Officers

Ian Chalmers	Managing Director
John Dunlop	Chairman
Ian (Inky) Cornelius	Non Exec Director
Ian Gandel	Non Exec Director
Anthony Lethlean	Non Exec Director

### Major Shareholders

Abbotsleigh Pty Ltd	29.13%
Merrill Lynch Nominees	7.76%
ANZ Nominees	7.22%
National Nominees	4.03%
Sydney Equities	1.99%

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## Production the next step for Alkane

### Company Summary

Alkane Resources is an Australian based junior explorer with a growing resource inventory of gold and boutique mineral assets in New South Wales. Alkane has been threatening to make the leap back into gold production for a number of years and whilst initial studies on its Tomingley Gold Project showed it to be economically viable, the margins were a bit too tight for comfort. The discovery of the Caloma deposit 500m from existing resources has changed all that. A maiden resource from Caloma is to be included in a definitive feasibility study and should see a decision to mine taken in early 2009 with first production expected late 2009 /early 2010.

Add the McPhillamys multi-million ounce deposit in the making, currently being drilled as part of the Newmont (earning 51%) Joint Venture and the world class Dubbo Zirconia project (DZP) and Alkane Resources is set to surge pass its high water mark (\$0.55) achieved during operation of its Peak Hill gold mine in 2003.

### Tomingley Gold Project Resources

Measured, indicated and inferred

Deposit	Tonnes	Grade	Ounces
Wyoming One	6,300,000	2.70	547,700
Wyoming Three	815,000	2.20	58,700
Total	7,130,000	2.70	606,400

### McPhillamys Resource Target

Deposit	Tonnes	Grade	Ounces
McPhillamys	50,000,000	1.5	2,400,000

Target size based on previously reported intersections including 123m at 1.96g/t Au from surface.

### Ongoing Developments

Alkane has good news expected on three fronts:

1. Continuing flow of good results from the Caloma gold deposit which in turn provide critical mass to commence development of the Tomingley Gold Project.
2. Similarly for current drilling of the McPhillamys deposit (Newmont Australia earning 51%). Drilling to determine the size of the mineralised system is currently being planned.
3. Operational findings regarding the scale up potential of the demonstration plant currently processing ore from the Dubbo Zirconia - Niobium Project, which has a projected 200 year mine life.

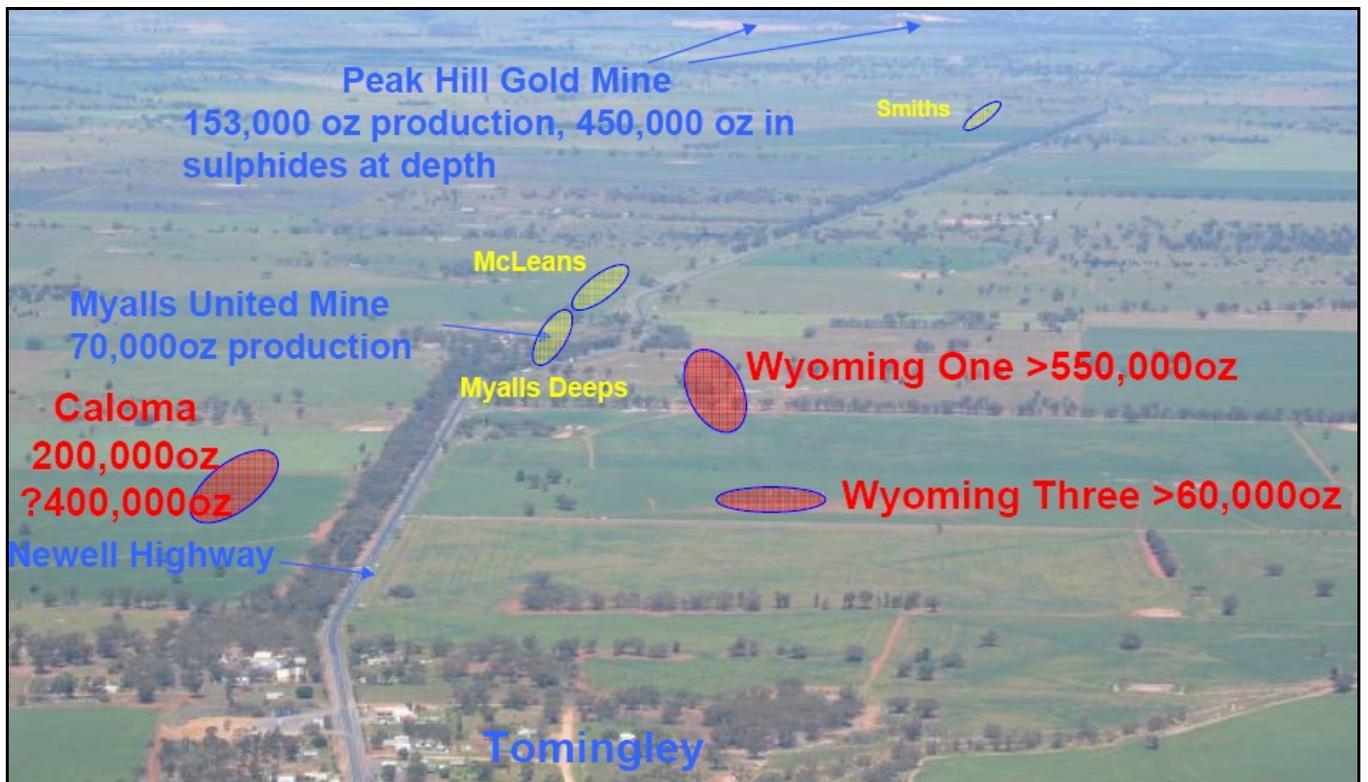
Each of these projects has the potential to be a company maker in its own right.

**Tomingley Gold Project**

The Tomingley Gold Project (TGP) extends over 60km from Parkes in the south, to north of the Tomingley township in the Central West of New South Wales.

Resources are spread between the Wyoming One, Wyoming Three and Caloma deposits. Prior to the discovery of Caloma a scoping study into the development of the Wyoming One and Wyoming Three deposits was completed. The results of the study showed that the development was viable but sensitive to blowouts in capital cost, mining cost and the gold price (calculated at A\$650 per ounce). The decision was made to delay the development of the project until a more economically robust model could be developed.

The discovery of the Caloma deposit has proved to be the “golden” bullet Alkane was looking for. An estimated 2 million tonnes of near surface mineralisation at 3g/t Au (for approximately 190,000oz) allows the possibility of increased start up revenues to help off set the cost of pre-strip of ~10m and ~30m of cover for the Wyoming Three and Wyoming One deposits respectively.



Currently, drilling is due to be temporarily wound up at Caloma to allow review of some 22,000m of drill data, calculate a resource and plan more holes as required. The resource will allow more detailed planning of process plant parameters to commence such that a definitive decision on project advancement can be made.

**Wyoming Resources (>1.00g/t Au cut off)**

Deposit	Measured		Indicated		Inferred		Total		Ounces
	Tonnes (t)	Grade (g/t)							
Wyoming One	4,020,000	2.25	1,010,000	2.77	1,275,000	4.09	6,300,000	2.70	547,700
Wyoming Three	815,000	2.20	15,000	2.32			830,000	2.20	58,700
<b>Total</b>	<b>4,835,000</b>	<b>2.24</b>	<b>1,025,000</b>	<b>2.76</b>	<b>1,270,000</b>	<b>4.09</b>	<b>7,130,000</b>	<b>2.70</b>	<b>606,400</b>

Maiden resources for Caloma and McPhillamys are yet to be released.

## Feasibility Study

Current conceptual development of the Tomingley Project consists of three open pit mines (Caloma, Wyoming One and Three) followed by an underground operation at Wyoming One. Gold production would be through a conventional carbon in leach (CIL) gold recovery circuit at an open pit rate of between 750,000 – 1,000,000 tonnes per annum. The treatment rate would produce approximately 100,000 ounces p.a. for the first two years of production then approximately 75,000 ounce p.a. for six to eight years depending on underground development.

Current estimates put capital costs at A\$50 million including \$2.0 million for construction of a 40km long pipeline to access artesian water. Pre-existing water permits to satisfy requirements for a 1mtpa plant have been sourced. No camp facilities are required and the workforce can be sourced locally. A natural gas pipeline and railway are located five kilometres west of the Tomingley town site and power is available from the NSW state grid.

Previous investigations in the feasibility of developing the Wyoming Deposits ran a into head wind by way of the approximately 30m barren clays that needs to be removed prior to accessing ore at Wyoming One. Ore extraction from 5m below surface at Caloma will provide early cash flows and offset the cost of pre-strip at Wyoming One as well as contribute to prompt repayment of capital expenditure.

### Dubbo Zirconia Project (DZP)

Firstly, it must be pointed out that in terms of value contribution a more accurate name would be the Dubbo **Niobium-REE-Zirconia** Project. Located 20 kilometres south of Dubbo in the central west of New South Wales, the DZP is based upon one of the world's largest in-ground resources of zirconium, hafnium, niobium, tantalum, yttrium and rare earth elements (REE).

The deposit is centred on the Toongi trachyte intrusive, an almost entirely mineralised body of indeterminate depth. The intrusive has been extensively drilled to 55m depth to establish a 35.7 million tonne measured resource as a basis for further development.

Additional holes to 100m depth have confirmed continuity of grade and tonnes at depth for an **additional 35.7 million tonne inferred resource** at similar grades.

Metal	Tonnes	Grade	Tonnes
Zirconia Oxide	35,700,000	0.014%	1,434,720
Hafnium Oxide	35,700,000	0.04%	29,280
Niobium Oxide	35,700,000	0.46%	336,720
Tantalum Oxide	35,700,000	0.03%	21,960
Yttrium Oxide	35,700,000	0.14%	102,480
Uranium Oxide	35,700,000	0.014%	10,248
Total REE	35,700,000	0.745%	545,340

### Metallurgy

Due to the fine grain size of the trachyte intrusive, separation of ore minerals by physical means is impractical. Over several years the Company has developed a flow sheet consisting of sulphuric acid leach followed by solvent extraction recovery and refining to produce several products.

Construction of a demonstration plant at ANSTO and commissioning has been completed with several thousand litres of pregnant leach solution collected. The recovery of all metals into solution has been high (in the order of 90%) and has confirmed that the sulphation process is robust and should readily scale up to a full commercial sized operation.

The acid requirement for processing DZP ore will result in project sensitivity to sulphur and acid prices. To mitigate this exposure Alkane has a number of options such as the processing of refractory ore from remaining resources at its Peak Hill gold mine to recover sulphur as well as gold. Alternatively, processing of proximal sulphur rich ores from surrounding operations is another option for supplementing sulphur requirements.

## Development

The size and potential of the DZP has been widely known for some time and begs the question as to when the project will be developed. Whilst it has taken time to refine the process of extraction, it is also likely that the capital requirement for development (+ A\$100m) will demand its share of attention in planning company strategy. Alkane has maintained a relatively tight capital structure considering its +20 year history so it would be reasonable to assume that the board would prefer to avoid any significant dilution to fund capex requirements, especially when cash flows from Tomingley are likely in approximately 18 months time.

## McPhillamys World Class Gold Discovery

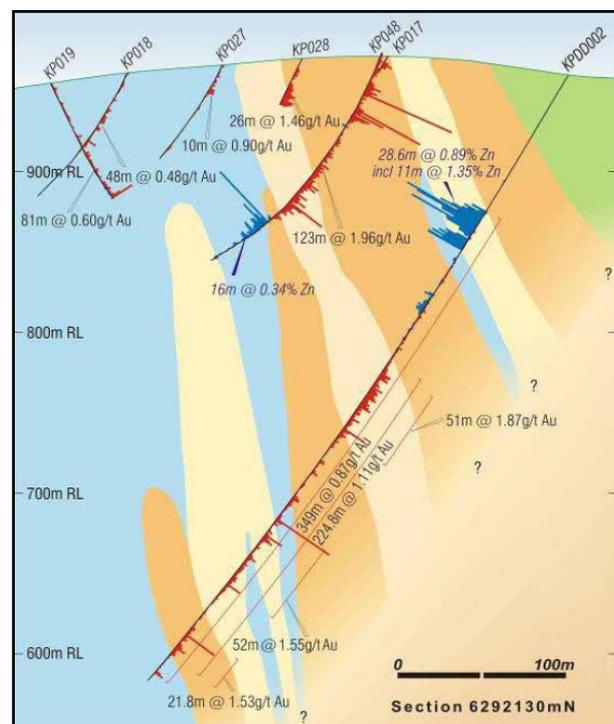
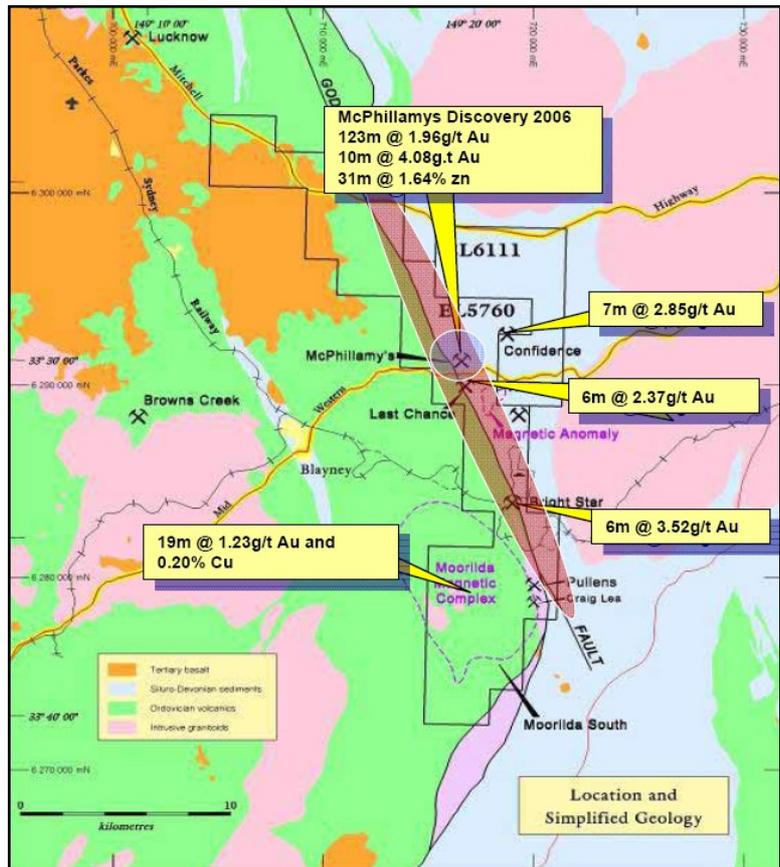
Late in 2005, Alkane formed an agreement which allowed Newmont to earn an interest in the Molong and Moorilda gold projects, located either side of the town of Orange in central-west New South Wales. The agreement required Newmont to spend \$5 million prior to August 2010 to earn 51% of the project. If that condition is met, Alkane can opt to contribute pro rata or fall back to 25% ownership of the project with all expenditures carried by Newmont to completion of a bankable feasibility study.

The agreement has led to the discovery of the McPhillamys gold deposit which is evolving to be one the most significant gold discoveries in Australia for the last ten years. Intersections reported to date include:

- **123m at 1.96g/t from surface**
- **349m at 0.87g/t from 97m**
- **263m at 1.32g/t from 134m**

The sheer volume of mineralised rock present indicates that McPhillamys is part of a major gold system. Individual intersections dispersed over 4km of strike indicate that the full potential of the Moorilda Project will take years of drilling to realise.

Alkane announced at its AGM a resource target of **2.5 million ounces** for McPhillamys. Whilst the involvement of a major mining company will prevent the fast tracking of a resource drill out and announcement, the scale of the discovery is undoubtedly world class and it would be safe to assume that the stated resource target will be met.



## Valuation

The following values per share have been assigned for Alkane's three core projects;

Project	Development discount applied	Discounted Value per share
Tomingley Gold	10%	\$0.27
Dubbo Zirconia	20%	\$0.48
McPhillamys Gold	60%	\$0.20
<b>Sub Total</b>		<b>\$0.95</b>
Cash	\$12.5m	\$0.05
9m BCI Shares	\$16.0m	\$0.07
<b>Total</b>		<b>\$1.07</b>
Current Share Price		\$0.43
<b>Upside</b>		<b>149%</b>

Values for the projects were calculated by the net present value (NPV) valuation method. Discount rates applied reflect the time and inherent risks involved in capital intensive projects. This point is particularly relevant for the McPhillamys Gold Project, which will undoubtedly be developed but is likely to take upwards of 3 years to reach that point.

The following assumptions have been used in determining cash flows from each project;

	Tomingley	Dubbo Zirconia
<b>Production</b>		
Mining	1.0m tpa	0.4m tpa
Processing	1.0m tpa	0.4m tpa
Recovery	95%	90%
Mine Life	10 years	Production over 10 years excluded (mine life 150-200years)
<b>Costs</b>		
Mining	A\$18/t of ore	A\$5/t of ore
Processing	A\$15/t	A\$100/t
Admin	A\$1/t	A\$2.5/t
Transport and marketing	-	A\$1000/t of product
Capex	A\$ 50m	A\$150m
Sustaining capex	A\$ 2.5m	A\$12m
Inflation	3%	3%
<b>Funding</b>		
Debt / Equity / Cash	\$20m / \$30m / -	\$70m / \$45m / \$35m

## Commodity Price assumptions (Australian dollars)

	2009	2010	2011	2012	2013	2014	2015	2016	...
<b>Gold /oz</b>	850	850	850	850	750	750	750	750	750
<b>Niobium /lb</b>			12	12	12	12	12	12	12
<b>Tantalum /lb</b>			45	45	45	45	45	45	45
<b>Uranium /lb</b>			75	75	75	75	75	75	75
<b>Zirconia Products /lb</b>			3	3	3	3	3	3	3
<b>REE total /lb</b>			5	5	5	5	5	5	5

## Discussion

The path ahead for Alkane is well laid out. Assuming there aren't any unforeseen hiccups in the development of the Tomingley Gold Project, the cash flows from that will put the company in a strong position to tackle the + \$100 million capital expenditure requirement for the Dubbo Zirconia Project. The in-house experience gained from the development of the Peak Hill Gold Mine adds further confidence in the ability of the board to develop a similar, though larger project at Tomingley.

The Dubbo Zirconia (Niobium) Project has been in the pipeline for sometime as the metallurgical processes were refined and optimised. Considering the +100 year mine life of the project, time taken to identify and iron out hiccups early on will likely turn out to be time well spent. Cash flows from this project should reach an equilibrium of approximately \$50 million p.a. placing Alkane in a robust position to contribute as required to the development of the McPhillamys deposit as well as its Western Australian exploration projects.

The clear view ahead for Alkane Resources sets it apart from its peers, as such we recommend Alkane Resources as a **long term buy**.

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