

PROJECT DEVELOPMENTS

NEW SOUTH WALES

PEAK HILL GOLD MINE

Alkane Exploration Ltd 100%

Reticulation of existing heap leach pads continued throughout the December Quarter and 886 ounces of gold were recovered. Cash costs were A\$430 per ounce while revenue averaged A\$547 per ounce. Year production was 5645 ounces with cash costs of A\$279 per ounce and revenue of A\$556 per ounce, generating A\$1.6 million cash operating surplus.

It is expected that decommissioning and gold recovery operations will continue for most of calendar 2004. Production of two to three thousand ounces is forecast.

DUBBO ZIRCONIA PROJECT

Australian Zirconia Ltd (AZL) 100%, subject to Astron Limited earning 50%

Astron Limited have the right to earn 50% interest in the DZP by funding all expenditures to complete a Final Development Plan by October 2006.

A series of technical meetings have been held with Astron personnel to agree process flow sheet optimisations and modifications, leading to design and construction of the Demonstration Pilot Plant (DPP). It is anticipated that this work will result in further laboratory scale test work in the next three months prior to finalisation of the design of the DPP mid year. Construction should commence in the second half of the year.

TOMINGLEY GOLD PROJECT (TGP)

Alkane 100% subject to separate royalty agreements with Compass Resources NL, Golden Cross Operations Pty Ltd and Climax Mining Ltd.

Resources

As detailed in the announcement to the ASX on 11 December 2003, the resources for **Wyoming One** and **Wyoming Three** ore deposits were compiled from the drilling data available at the end of November. These are summarised in the tables below:-

WYOMING RESOURCES (>1.00g/t Au cut off)									
DEPOSIT	Measured		Indicated		Inferred		Total		Ounces
	Tonnage (t)	Grade (g/t)							
Wyoming One	3,365,000	2.52	770,000	3.36	380,000	4.45	4,515,000	2.83	410,225
Wyoming Three	730,000	2.35	15,000	2.37			745,000	2.35	56,304
TOTAL	4,095,000	2.49	785,000	3.34	380,000	4.45	5,260,000	2.76	466,529
WYOMING RESOURCES (>0.75g/t Au cut off)									
Wyoming One	4,020,000	2.25	1,010,000	2.77	520,000	3.49	5,550,000	2.46	439,148
Wyoming Three	815,000	2.20	15,000	2.32			830,000	2.20	58,772
TOTAL	4,835,000	2.24	1,025,000	2.76	520,000	3.49	6,380,000	2.43	497,920

Resources were calculated by Terry Ransted MAusIMM (Principal, Multi Metal Consultants Pty Ltd) who is a competent person as defined in the Australasian Code for Reporting of Mineral Resources and Ore Reserves, September 1999 and accurately reflects the information compiled by the competent person). The full details are given in the attached Note 1 in the 11 December 2003 ASX Announcement.

A scoping study commenced as a result of the resource compilation to determine the optimum development scenario for these resources. This study is continuing and various open pit models and production rates are being evaluated.

RC and aircore drilling continued during the Quarter and as advised to the ASX on 20 November, 20 RC holes (4126 metres) targeted depth extensions to the Wyoming Three ore body and the hanging wall zone within Wyoming One. Results were tabled in that report.

67 aircore holes (5347 metres) tested specific zones within Wyoming Two and Three, and a possible southerly extension to the Wyoming One mineralisation (results also tabulated in the 20 November report). As a result of encouraging results recorded by WY653, WY656 and WY662 in the south extension to Wyoming One, an additional aircore program was completed (22 holes for 1609 metres) before the end of the year. An altered porphyry body similar to that hosting the Wyoming One system was identified on the most southerly line 6392700mN with associated veining and mineralisation in WY 680.

Hole No	East	North	Azimuth	Intercept (m)	Grade (g/t Au)	Interval (m)	EOH (m)	Target Zone
WY 653	614102	6392904	180°	2(EOH)	4.17	57 - 59	59	Wyoming 1-S
WY 656	614098	6392799	180°	3	0.70	33 - 36	41	Wyoming 1-S
WY 662	614081	6392904	180°	3	1.31	21 - 24	83	Wyoming 1-S
WY 680	614060	6392700	180°	12	0.45	27 - 39	45	Wyoming 1-S

All holes drilled at a nominal inclination of -60°.

Gold analysis by 30g fire assay of 3 metre composites.

This program has demonstrated mineralisation over a 200 metre strike length which is open to the south and at depth with only a shallow transported clay cover. Further aircore and RC drilling has been scheduled to evaluate this new zone.

Wyanga Acquisition

As advised to the ASX on 8 January 2004, Alkane reached agreement with Climax Mining Ltd to acquire a 100% interest in EL 6085. The Exploration Licence adjoins Alkane's Tomingley Gold Project to the north and north-west. The EL covers an area of 61 square kilometres, and includes the northern and north western extensions of the Ordovician andesitic volcanic sequence that hosts the Wyoming gold deposits and the Peak Hill gold mine. As at Wyoming, extensive transported clay sediments cover the volcanic stratigraphy and target generation has been based upon interpretation of aeromagnetic and gravity data.

Exploration work by Climax and other partners which included reconnaissance bedrock aircore drilling, with limited RC and core follow up, identified several target areas. Of immediate interest is **Tomingley Two (Greendale)**, where RC drilling had generated intercepts within a 60 metre wide quartz veined shear zone of:

- 16 metres grading 1.00g/t gold (including 2m @ 5.00g/t Au) in WRC 3, and
- 4 metres grading 1.60g/t gold in WRC 2

Tomingley Two is located 1.6 kilometres north of Alkane's Tomingley One target where drilling during 2003 has identified gold mineralisation over an open ended 200 metre long zone. Both Tomingley One and Two are located within a 5 kilometre long structural corridor which includes the historic Tomingley workings near its southern extent.

At **Allendale**, centred 6 kilometres north-west of Wyoming, aircore drilling by Climax defined a 2.5km x 1.5km gold-copper bedrock (sapolite) anomaly. Broadly spaced but deeper drilling in this area identified extensively altered sediments, volcanics and intrusive rocks associated with low grade gold and base metal values. Several other anomalous bedrock targets were defined by Climax, including **Wyanga** located 15 kilometres north-west of Tomingley, where drilling had intersected 2 metres grading 1.42g/t gold. This area has not had follow up drilling.

2004 Drilling Programs

Major drilling programs have been scheduled for the first half of 2004. This program will include 20,000 metres of aircore drilling which will initially target the new Wyoming One south area but is largely designed to test the Tomingley structural corridor. RC and core drilling should commence early March.

3,000 metres of RC drilling has been programmed to provide an initial test of the resource potential of the **McLeans** target which is located immediately to the south of the historic Myall's United mine, and about 1km south of Wyoming One. At McLeans previous wide spaced and shallow drilling has intersected ore grades over a 1km strike length. RC drilling will also be scheduled for Wyoming One south after all aircore results are available.

An initial three hole program of core drilling is planned to test the north end of the **Wyoming One** body, targeting the 376 structure and other structural targets at depth within the host porphyry. Further core drilling will be scheduled following results of the Wyoming One, Wyoming One south and McLeans holes, and a review of the structural controls to the Wyoming Three mineralisation.

ORANGE-MOLONG (copper-gold)

LFB Resources NL 100%

The Orange-Molong prospect is centred immediately to the north and west of the city of Orange and covers a number of monzonite intrusive associated targets. Six reconnaissance RC holes (total 1074metres) targeted anomalous gold and copper in soils, historic gold-copper workings and aeromagnetic lows within the Ordovician aged volcanics and intrusives of the Molong Volcanic Belt.

At the Galloway prospect, holes MRC022, 23 and 26 intersected strong pyrite mineralisation in silicified volcanoclastic sediments overlying hematite-pyrite altered diorite and monzo-diorite intrusives. Weakly anomalous values were returned, however 1 metre grading 9.91g/t Au and 0.56%Cu from 39metres in MRC023 has indicated that potential for ore grade systems exists in the area.

Hole No	East	North	Azimuth	Intercept (m)	Grade (g/t Au)	Grade %Cu	Interval (m)	EOH (m)	Target Zone
MRC023	681950	6323525	180°	1	9.91	0.56	39 - 40	120	Galloway

All holes drilled at a nominal inclination of -60°.

Gold analysis by 30g fire assay of 1 metre riffle split sample.

At Mt Keenan, holes MRC024, 25 and 27 targeted the historic copper mine and associated aeromagnetic lows. All holes intersected significant magnetite-hematite altered monzonite intrusives, with minor sediments and volcanics. Weakly anomalous results were also returned for these holes.

The drilling confirmed the Molong Project area to host a major dioritic to monzonitic intrusive complex, of the same age and composition as those rocks that host the giant Cadia-Ridgway deposits. Additional exploration is being programmed to assist with target definition for further drilling.

BODANGORA and CUDAL (gold-copper)

Alkane Exploration Ltd 100%, subject to royalty agreement with Rio Tinto Exploration Pty Limited

As announced on 8 January 2004, Alkane reached agreement with Rio Tinto Exploration Pty Limited to acquire three exploration licences in the Central West Region of NSW. Subject to a binding sale and purchase agreement, Alkane will acquire a 100% interest in Exploration Licences's 4022 (**Bodangora**), 4155 and 5851 (**Cudal**).

Bodangora

EL 4022 covers an area of 65 square kilometres and is located 15 kilometres north-east of Wellington, and about 25 kilometres north of Alkane's Wellington (Galwadgere) prospect. The tenement includes part of the northern end of the Ordovician aged Molong Volcanic Belt (MVB) before it is covered by younger

sediments of the Great Australian Basin. The MVB hosts the monzonite intrusive gold-copper deposits of the Cadia Valley Operations (~20M oz) of Newcrest and several other advanced exploration projects.

Within the tenement area, the geology is dominated by an andesitic volcanic and volcanoclastic sequence with sporadic monzonitic intrusives. Rare inliers of Silurian-Devonian sediments and volcanics are evident in the south while the Nindethana Fault, a major crustal suture, separates the Bodangora sequence from the Siluro-Devonian Hill End Trough sediments and Carboniferous Wuuluman Granite to the east.

Over several years, Rio Tinto and partners have identified a number of geochemical anomalies associated with monzonitic intrusives and have targeted these as Northparkes type porphyry copper-gold models. Surface geochemistry, shallow aircore and RC drilling have defined several zones of low grade copper-gold mineralisation.

Alkane's primary target in the area is structurally controlled gold deposits, exemplified by the historic **Bodangora** workings, which cover an area of about 2km by 2km. The main mineralised structure at Bodangora strikes north-west and has been mined over a distance of 1300 metres, to a depth of 300 metres. The structure is generally evident as narrow high grade quartz veins dipping at 45° to the north-east. Historically Bodangora produced nearly 200,000 ounces of gold from 300,000 tonnes of ore in the years 1876 to 1917. Other high grade vein structures are known nearby but the Bodangora area has not been subject to modern and systematic exploration.

To the north of the Bodangora mine area, Rio Tinto outlined several other targets which include skarn mineralisation and an extensive zone of alteration at **Comobella** where RC drilling has indicated broad intercepts of gold-copper, with narrower high grade values. Intervals included 18 metres at 0.95g/t gold and 0.15% copper from 64 metres in NKRC 003, with 2 metres grading 5.7g/t gold and 0.44% copper.

The tenement excludes a small area covering the low grade copper-gold Kaiser porphyry mineralisation.

Ground exploration will commence following data compilation.

Cudal

The two exploration licences (EL 4155 & 5851) cover a total of 132 square kilometres, centred 25 kilometres west of the city of Orange, adjacent to Alkane's Molong prospect and the Cadia Valley Operations of Newcrest. The tenements are located on an outlier of MVB andesitic volcanics, separated from the main belt to the east by the Columbine Mountain Fault, another major crustal structure. Remnants of a Tertiary basalt sheet are scattered throughout the tenements.

Since 1991 Rio Tinto and partners have completed several exploration phases targeting Cadia-Ridgeway type monzonite hosted porphyry copper-gold systems. This work included ground geophysics, surface geochemistry and 45 RC and 2 core drill holes. The best results were returned from the **Dairy Hill** prospect where RC drilling of a quartz stockwork breccia in a dacite porphyry, with dimensions of 550 metres by 150 metres, generated broad low grade intercepts such as 48 metres grading 0.35% copper and 0.31 g/t gold. Much of the target area and its extensions remain undrilled.

Several other targets have been partially tested, including **Bowen Park** where a large surface geochemical anomaly (3.7km by 100-500m) returned high grade rock chip values within a broad alteration zone. RC drilling generated intercepts such as 33 metres at 0.21g/t gold and 0.31% copper; 6 metres grading 0.99g/t gold and 0.06% copper; and 2 metres at 2.73g/t gold and 0.66% copper. Other skarn targets and magnetic anomalies have not been tested.

Alkane views the potential of the Cudal prospect as very similar to its Moorilda project located approximately 50 kilometres to the south-east. The target at Moorilda is structurally controlled gold mineralisation associated with a major break and favourable lithologies, where reconnaissance RC drilling in 2003 generated several encouraging gold intercepts.

Ground exploration will commence following data compilation.

WELLINGTON and MOORILDA were inactive.

KADUNGLE and WYALONG were relinquished.

WESTERN AUSTRALIA

LEINSTER REGION JOINT VENTURE (nickel-gold)

Alkane Exploration Ltd 49%, Jubilee Mines NL 51%

*The four prospects - **Leinster Downs, Miranda, McDonough Lookout and Mt Keith** - are subject to a farm-in agreement with Jubilee Mines NL where Jubilee can earn a 75% interest in the properties by spending \$4.5M before March 2005. In March 2002 Jubilee reported expenditures to earn a 51% interest and have elected to continue to earn a further 24%.*

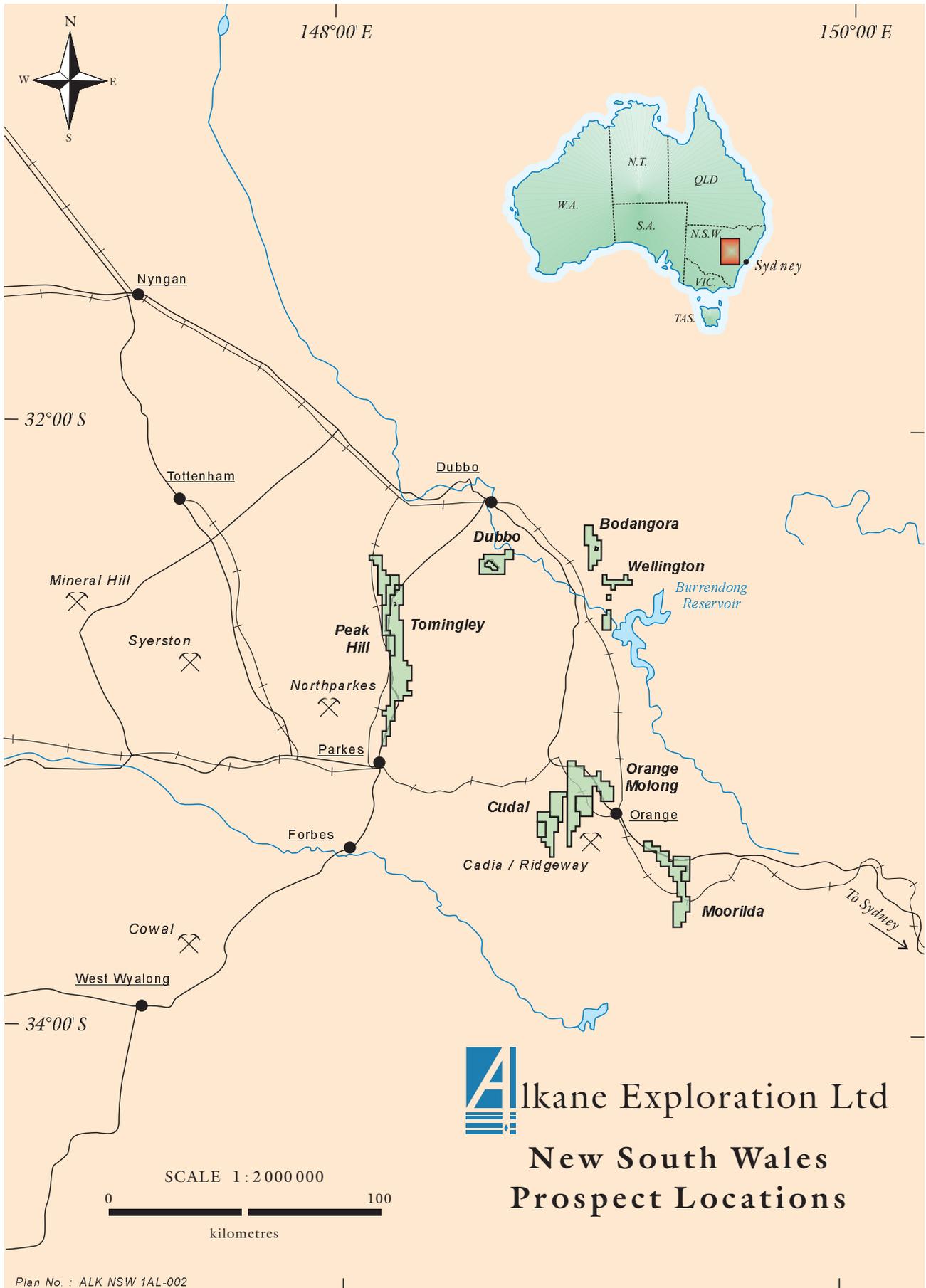
Jubilee have advised that no field work was carried out during the quarter

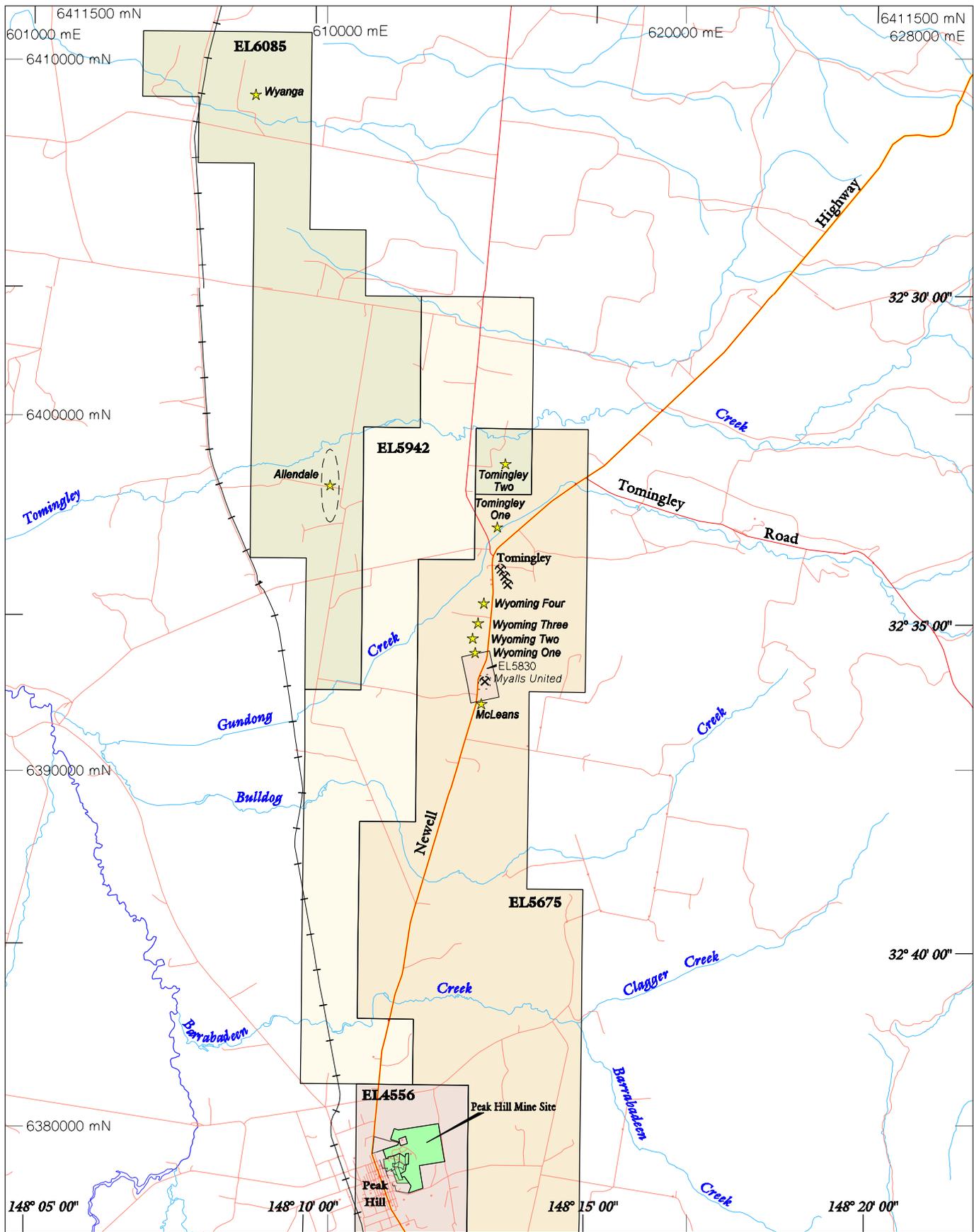
NULLAGINE DIAMOND PROJECT (Western Australia) and **WAITANGI (New Zealand)** were inactive

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Unless otherwise stated this report is based on information compiled by Mr D I Chalmers, FAusIMM, FAIG, a director of the Company, who is a competent person as defined in the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves, September 1999, and accurately reflects the information compiled by the competent person.





Scale 1 : 150 000
 0 5
 kilometres

Projection - AMG Zone 55
 Datum (horizontal) - AGD66

ALKANE EXPLORATION LTD

TOMINGLEY GOLD PROJECT
 NEW SOUTH WALES

Location Plan

COMPILED : MMC PLAN No. : ALK TOM 1AL-004
 DRAFTED : M-O-G Date : December 2003 FIGURE No. :