ASX and MEDIA RELEASE

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ALKANE RESOURCES LTD
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108,000 Ounce Gold Resource at Peak Hill

- **The Peak Hill Gold Mine (PHGM) is located 15km south of Alkane's operating Tomingley gold mine (TGO) in the Central West of NSW and was operated by Alkane from 1996 to 2005.**

- **At the Proprietary ore body an Inferred Mineral Resource using a 2.00g/t gold cut-off was defined in the sulphide zone:**

  1.02 million tonnes grading 3.29g/t gold and 0.15% copper (108,000oz)

- **This re-evaluation of the potential for Peak Hill to be developed underground forms part of the extensive regional exploration program is in progress to provide additional ore feed for TGO.**

- **The PHGM was operated using open pit mining and 153,000 ounces of gold were recovered by heap leach and dump leach of the oxidised ore.**

- **Core drilling is scheduled to commence in October to provide confirmation of the geology and structures, and fresh material for advanced metallurgical testing.**

- **Scope exists to expand the Resource at depth and in satellite deposits within an extensive alteration zone.**

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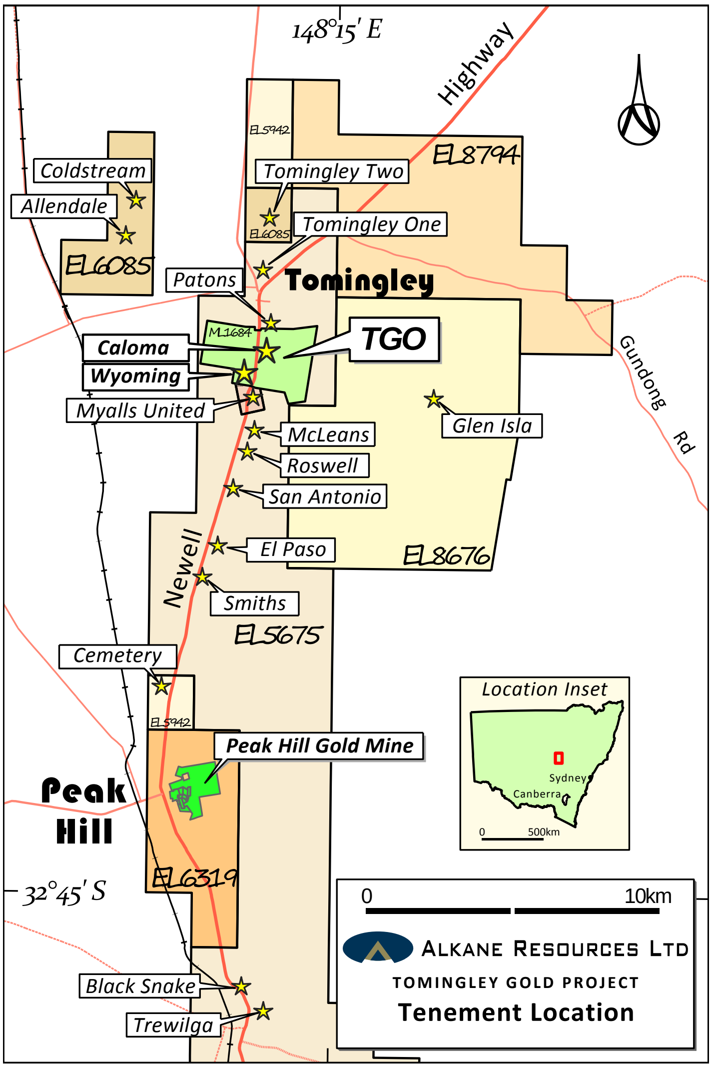
Peak Hill Gold Mine

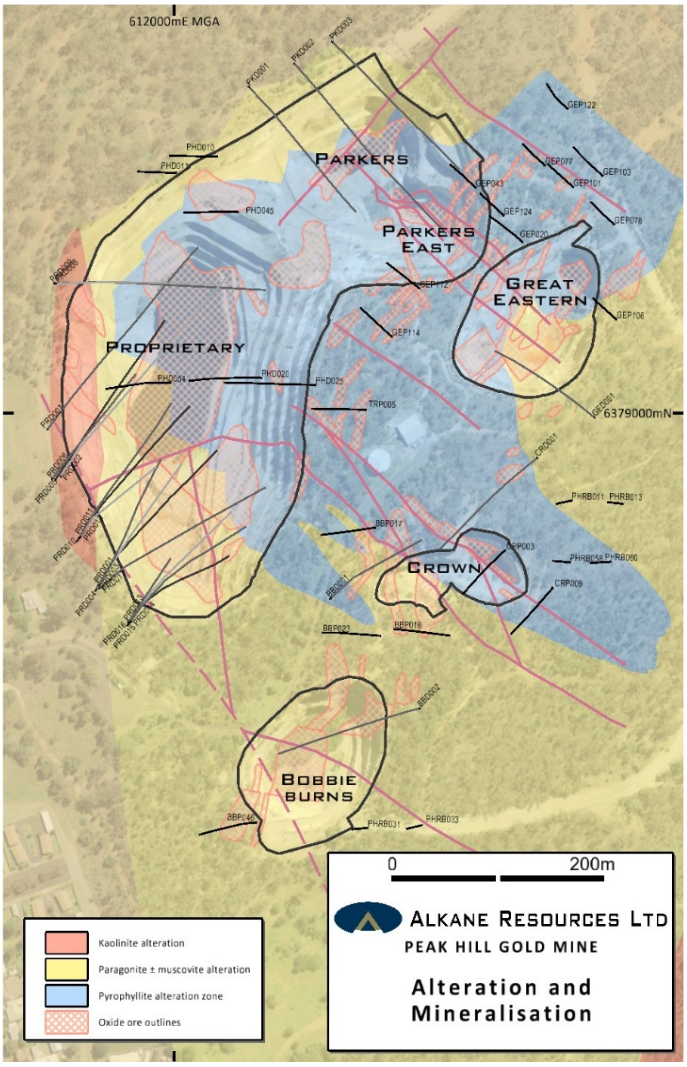
Alkane Resources Ltd 100%

The Peak Hill Gold Mine (PHGM) is located about 60km southwest of Dubbo in the Central West of NSW, and 15km south of Alkane's operating Tomingley gold mine (TGO). PHGM was a fully operational open pit gold mine operated by Alkane that is currently under care are and maintenance with most site rehabilitation completed away from the existing open cuts. There are four pits, the main Proprietary-Parkers Pit and three satellite pits, Bobby Burns, Crown and Great Eastern.

The PHGM has a rich history with alluvial gold mining commenced in 1889 and lode mining by various methods through to 1916. Approximately 61,900 ounces is reported to have been recovered from processing of 475,000 tonnes of ore. The historic mining was a combination of underground and glory hole operations.

More recent open cut mining by Alkane commenced in 1996 and was completed in 2002. The gold within the oxidised material was recovered by heap leach and dump leach methods. 154,000 ounces of gold was recovered from 4.7 million tonnes of ore through to 2005. Mining at Proprietary open pit extended to approximately 100m vertical depth, whilst the other pits were generally less than 50m deep. During the operation a number of core holes were drilled to test the underlying sulphide mineralisation and provide sample for metallurgical testing. The drilling focused on the Proprietary, the largest of the known deposits.

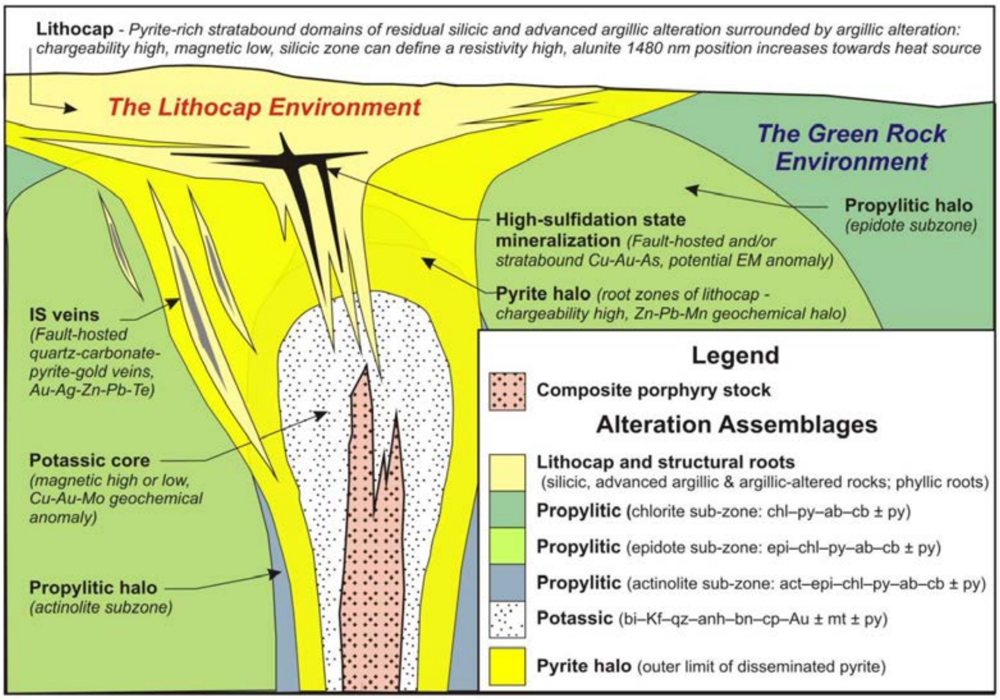




Geology

The Peak Hill deposit is interpreted as a high sulphidation epithermal system probably related to a deeper porphyry magmatic source. This style of deposit is well documented globally, although usually preserved in younger geological terrains other than the older Ordovician volcano-magmatic provinces in NSW.

The deposit is hosted by strongly deformed and hydrothermally altered Ordovician aged volcanoclastic rocks which are predominantly andesitic volcanoclastic breccias, lesser sandstone/siltstone units, minor lava and black mudstones, similar to the sequence at Tomingley.



Typical Porphyry-Epithermal model Holliday and Cooke et al 2007

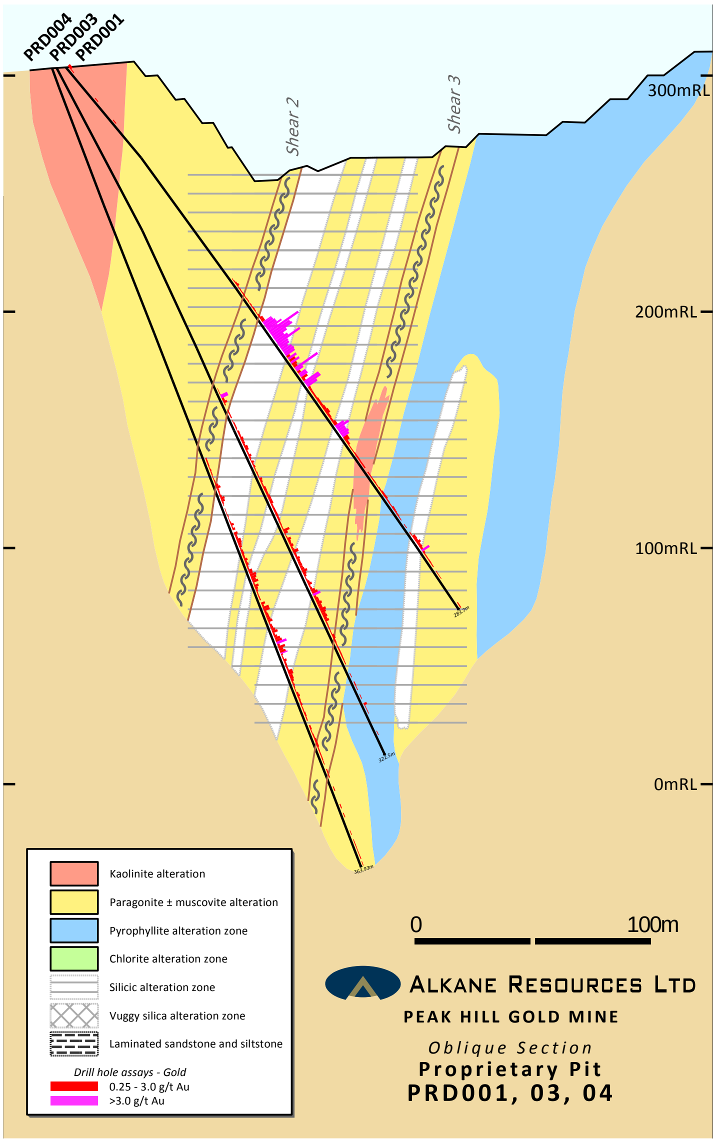
The alteration zone, or lithocap, is evident over a 3km long by 500m width north-south trending zone that appears to be focused on coarser grained permeable breccia and volcaniclastic rocks, with later superimposed structural zones.

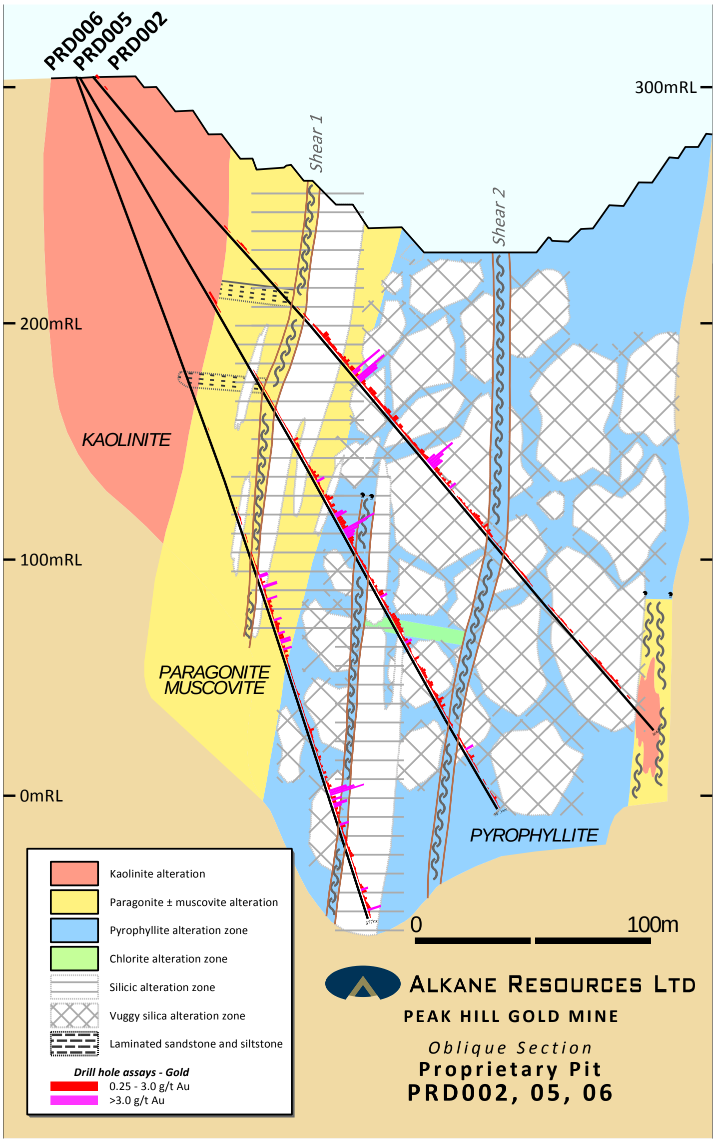
Within the broad lithocap envelope, an elliptical core zone 500m by 400m, of advanced argillic alteration is evidenced by extensive pyrophyllite and paragonite with residual silica-pyrite mineralised zones. High pyrite concentrations, with the copper sulphide assemblage dominated by enargite, tennantite and luzonite, are often focused within late, higher grade structures within the residual silica-pyrite zones.

Oxidation has extended to >90m. The redox boundary between oxidised and unoxidised rock is irregular due to poddy nature of the primary sulphide interface extending into the overlying oxidised material.

Two cross sections below show the nature of gold mineralisation at Peak Hill beneath the Proprietary Pit. The locations of these cross sections are also shown on the surface plan on page 2 of this announcement above.

The mineralised zones align very closely to the orientation of the mineralisation mapped and observed in the open pit through the densely spaced blast hole grade control drilling. This interpretation is supported by open pit mining in fresh rock, structural interpretation of diamond core and lithological/alteration/veining interpretation.





Underground Resource

Whilst a potential larger resource is evident within the Proprietary deposit (see grade-tonnage graph below), surface infrastructure related to the adjacent town of Peak Hill impacts on capacity to consider open pit mining operations. The current study has focussed on ore that could be mined by underground operations. The resource beneath the Proprietary Pit (220mRL to –45mRL) has been estimated at a 2.0g/t gold lower cut-off is approximately 250m in length and 30m width, and has been depleted by the known historical underground workings:

Proprietary Mineral Resource

Project	Resource Category	Cut-Off	Tonnes (Mt)	Gold Grade g/t	Gold Metal (Koz)	Copper Metal (%)
Proprietary Underground	Inferred	2g/t Au	1.02	3.29	108	0.15
Total			**1.02**	**3.29**	**108**	**0.15**

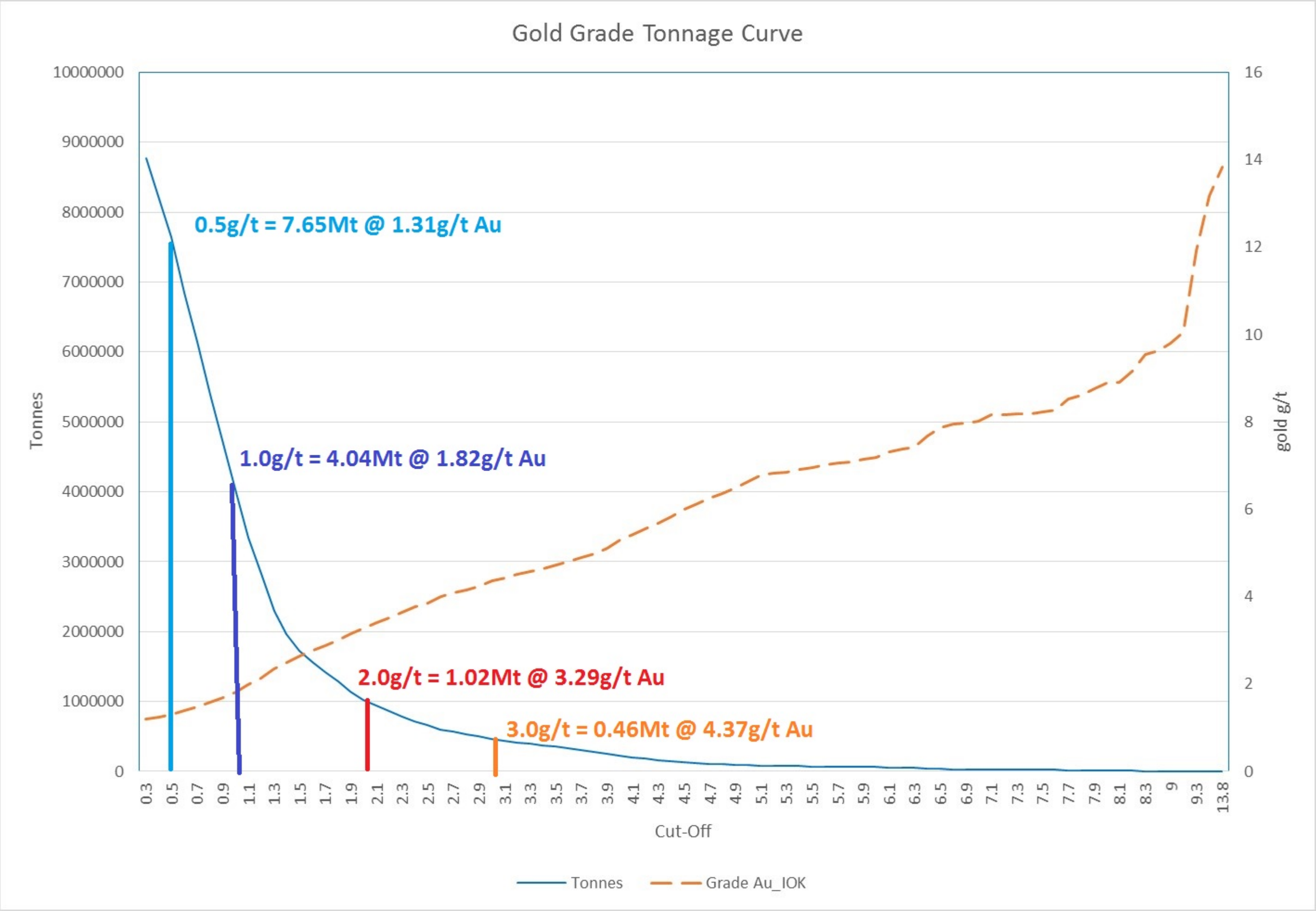
Full details are provided in the appended JORC Table 1 and text summary below

Further infill and extensional drilling with a view to both defining the continuity of the high grade cross structures and provide fresh samples for metallurgical test work to ascertain the optimal extraction method of the gold is planned.

Mineral Resource Estimate

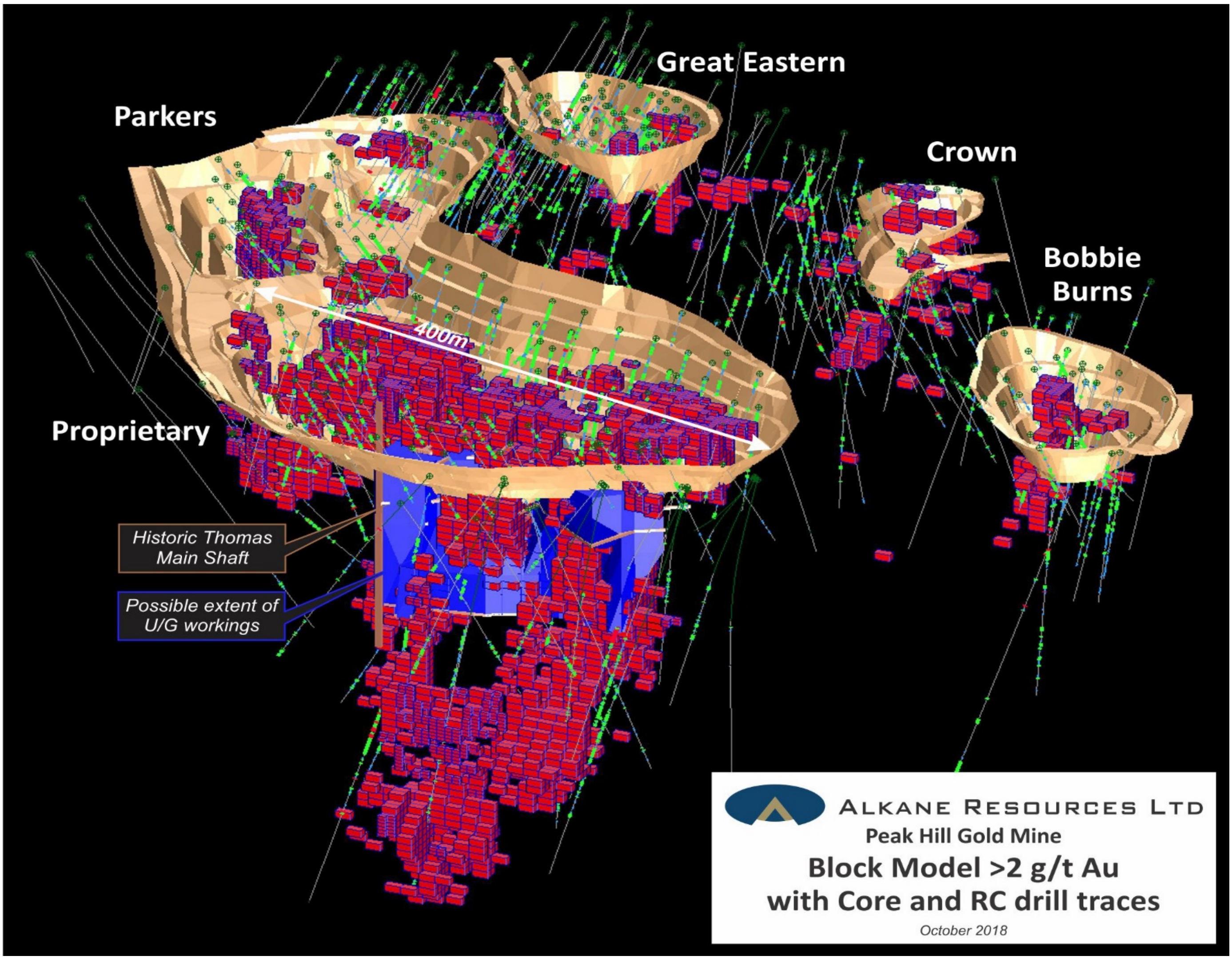
An initial assessment of the resource potential was completed in 1998 and 2001 using the sectional and inverse distance squared procedures. Whilst these numbers were quoted at that time they do not comply with JORC 2012 required parameters and are not restated.

The underground resource for the Proprietary deposit within the PHGM is stated at a 2.0g/t gold lower cut-off. The gold grade-tonnage curve of the Proprietary underground resource area is shown below. The key resource estimates metrics are detailed in the Supporting Information text.



The areas of higher ounces per vertical metre correlate strongly to the areas of highest density of drilling. Areas of lower ounces per vertical metre may be able to be improved as infill drilling in undrilled areas along strike and down plunge allows opportunity for the underground resource to be extended.

A 3D model of the known Peak Hill mineralisation is displayed below.



Potential Exploration Upside at Peak Hill

The underground resource is estimated only for the main mineralised domain of the Proprietary ore body and only extends to a maximum depth of ~200m below the base of the current Proprietary pit. Within the main mineralised '101' domain there appears to be a continuation of the observed high grade crosscutting structures at depth. The drilling density and orientation within the area below the current pit is currently not sufficient to accurately define the orientation, continuity and volumes of high grade mineralisation within that domain. These areas are high priority targets for infill drilling and testing of the other deposits within the PHGM to add to and further increase the confidence in the Resource and potentially also define as separate sub-domains.

Peak Hill Underground Mineral Resource Supporting Information

The Mineral Resource Statement for the Peak Gold Mineral Resource Estimate (MRE) is reported according to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') 2012 edition.

In the opinion of Alkane, the resource evaluation reported is a reasonable representation of the global underground gold mineral resources within the Proprietary deposit at Peak Hill, based on reverse circulation and diamond drilling sampling data available as of September, 2018. The underground Resource is completely within fresh rock. Key aspects of the evaluation are detailed below:

Drilling Techniques

The Peak Hill Gold Project has been evaluated using all of the available known blast holes (BH) used during mining, auger (AUG), air core (AC), reverse circulation (RC) and diamond drilling (DD) holes.

Not all of this drilling lies within the current resource outline.

So called "modern" exploration at Peak Hill began in the early 1960's. The Peak Hill project was evaluated using the information from the data gathered from the holes below:

AC - 66 holes for 1,237.5m

RC – 361 holes for 26,384.2m

BH Grade Control – 109,326 holes for 565,517.9m

DD - 95 holes totalling 16,665.53m. This includes 39 holes which contained RC precollars

Due to the age of the project, limited collated metadata for the nature of the quality of sampling is unavailable. Certain assumptions have been made based on the quality of the sampling methods.

The entire Proprietary deposit was estimated using only the available RC and Diamond drill holes. Over 80% of all RC and diamond drill holes used in the estimation were sampled on a 2m sample basis.

The underground resource that this report relates to incorporates specific RC and Diamond holes of varying ages of Drilling.

RC - 54 holes

DD - 57 holes

The latest drillhole series which includes the "PRD" prefix are diamond drill holes, drilled by Alkane 1997-1998 and were sampled at a nominal 2m interval.

Detailed resource definition drilling was completed primarily by RC techniques using a 130mm or 140mm diameter face sampling hammer. It is assumed the DD holes (without Prefix "PRD") were drilled using NQ3 core drilling. The PRD series diamond holes with pre-collars were completed to competent material, with holes cased off and completed to depth using HQ3 (61mm diameter) core with some hole reducing to NQ3. Other than PRD holes which were surveyed by down hole camera, the method of orientation is not known.

Sampling and Sub-Sampling Techniques

Due to the age of the historical drilling only the methodology of the PRD series holes can be described.

For the "PRD" series holes the core was marked up by the geologist and predominantly ¼ cut using an Almonté (or equivalent) core cutting saw. Some zones were ½ cored and sampled. Sampling intervals were not based on geology, were predominantly 2m intervals in length. All diamond core was sampled. It is assumed that all core other than the "PRD" series was ½ cored due to the unavailability of any reference core to site check.

Diamond drill hole (DD) core was utilised for geotechnical and bulk density measurements as well as lithology logging and assaying. The remainder of the core transferred to permanent storage. The core was predominantly sampled at 2.0 m intervals, with some sampling on geological intervals from 0.2m to 1. m.

Historical Drilling (Prior to 1993)

Limited detailed information is currently available on historical sampling techniques.

Sample Analysis Method

Drill core was oven dried prior to crushing to <6mm using a jaw crusher, split to 3kg if required then pulverised in an LM5 (or equivalent) to ≥85% passing 75µm. Bulk rejects for all samples were discarded. A pulp packet (±100g) is stored for future reference.

For all 1-2m samples used in the resource estimate gold was determined using a 50g charge fused at approximately 1100°C with alkaline fluxes, including lead oxide. The resultant prill was dissolved in aqua regia and gold determined by flame AAS. For 3m composite samples gold was determined using a 30g charge (more rarely 50g charge).

Commercially prepared Certified Reference Materials (CRM) and blanks were inserted at 1 in 50 samples. CRM's were not identifiable to the laboratory.

Field duplicate samples were inserted at 1 in 50 samples (alternate to CRM's).

Laboratory QAQC sampling includes insertion of CRM samples, internal duplicates and screen tests. This data was reported for each sample submission.

Failed standards result in re-assaying of portions of the affected sample batches.

Screen fire assay checks (75µm mesh) were undertaken on some drill core samples. Screen fire assay data overrides all other methods. These techniques are industry standard for gold and considered appropriate.

Geology and Geological Interpretation

Mineralisation:

The primary alteration comprises of Au, Cu sulphides and pyrite associated with extensive advanced argillic alteration and silicification in a steeply plunging lenticular zone (Main Propriety pit). Pyrite content commonly exceed 15% and barite is a prominent accessory mineral.

The Au-Cu ore occurs in steeply plunging shoots that broadly coincide with a major shear/fault system and a distinctively zoned alteration system characterised by an acid alteration core of pyrophyllite and vuggy silica, grading out through less acid alteration assemblages (white mica bearing alteration-paragonite+muscovite to kaolinite) to propylitic chlorite/ epidote margins.

Gold grades >1g/t at Peak Hill are usually coincident with concentrations of quartz-pyrite-barite veins. These veins are not confined the pyrophyllite core, they also occur in the advanced argillic paragonite-muscovite zone which is proximal to the pyrophyllite core. The zones of high grade <5g/t generally occur in microcrystalline quartz altered domains in the paragonite-muscovite alteration zones. The high grade zones are also associated with tight east-west to west-north-west structures that cross cut the Proprietry ore body. These structures can be difficult to observe but can be spatially identified with the grade distribution within the tightly spaced blast hole drilling.

Mineralisation, as intersected and observed in diamond drill holes within the Mineral Resource, contains similar primary controls on mineralisation, orientation and continuity as recently observed and mined in the Proprietary main pit.

The geological model was built on the extensive historical pit mapping and more recent ground truthing of the old mapping in the Peak Hill area. The in-pit mapping and recent mapping was incorporated to produce a project map over all the pits and formed the backbone of the geological/structural model currently being implemented.

The geological model is based on the identification of seven broad geological units made up of extremely altered volcanoclastic assemblages. All the units contain varying volcanoclastic rocks, but each unit has been separated based on texture, grain size, alteration and rock type.

These seven broad units form the basis of the domaining used in the estimation.

The domain wireframes were built by Alkane geologists.

The geological domains have been combined with both the historical and recent structural mapping. The alteration envelope which was generated by previous workers through PIMA spectroscopy of the core and within the open cuts, was overlaid onto the geological/structural model for correlation and confirmation. This informed the estimates and along with grade guided the interpretation of the ore envelope wireframes at a nominal 0.5g/t Au lower cut-off.

Where the intercept gold value was below the nominal cut-off however mineralisation continuity was supported by veining and alteration the intercept was included within the domain due to the commodity and the style of deposit.

Estimation Methodology

Sample data was composited into two meter downhole lengths using a best fit methodology.

Exploratory Data Analysis (EDA) of the capped and declustered composited gold variable within each domain was undertaken by Cube Consulting with variograms being produced using the Isatis software.

Assessment and application of top-capping for the estimate was undertaken on the gold variable within individual domains. Where appropriate, top caps were applied on a grouped domain basis. The main Proprietary Domain (101) that captures reported Underground resource used a top cut of 30g/t. Based on the geological evidence the principal estimation for the Main Proprietary Lode (101) was undertaken using Indicator based Ordinary Kriging (IOK) with the remaining domains estimated using Dynamic Ordinary Kriging (DOK). The Geovia SurpacTM package was used as the estimation software.

Estimation utilised domain boundaries as hard boundaries where only composite samples within that domain were used to estimate blocks coded as within that domain.

Interpolation was undertaken within parent cell estimation blocks of Y: 5 mN, X: 5 mE, Z: 5 mRL with no sub-celling to provide adequate domain volume definition of wireframe geometry. Considerations relating to selection of appropriate block size include: drill hole data spacing, conceptual mining method SMU analysis, variogram continuity ranges and search neighbourhood optimisations.

Complete reconciliation data pertaining to production performance of the Peak Hill Gold Mine, over time, was not available for open pit. Back calculations of the total tonnes of +0.5g/t material removed from Peak Hill are within 10% of the estimated resource within the open pits using the current estimated block Model. The methodology of gold extraction by Alkane was through Heap Leach and as such a full grade/ounce reconciliation had some approximation within the recovery would only be an estimate.

The 3D block model was then coded with density, depletions, weathering and classification prior to evaluation for Mineral Resource reporting.

Classification Criteria

Mineral Resources were classified as Inferred to appropriately represent confidence and risk with respect to data quality, drill hole spacing, geological and grade continuity, mineralisation volumes, recent and historical mining activity as well as metal distribution. Additional considerations were the early stage of project assessment and the implications of limited diamond drilling (at this stage) on the understanding of mineralisation controls and selectivity within an underground mining environment.

Inferred Mineral Resources were defined where a low to moderate level of geological confidence in geometry, continuity, and grade, was demonstrated, and were identified as areas where:

- Drill spacing was averaging a nominal 40m or less, or where drilling was within 40m of the block estimate; and
- Estimation quality is considered to be of low confidence.

The reported Mineral Resource for the underground beneath the main Proprietary Pit, was constrained at depth by the available drill hole spacing outlined for Inferred classification, nominally 200 m below the Proprietary pit.

Cut-Off Grade

The Mineral Resource cut-off grade for reporting of underground global gold resources for the Proprietary deposit was 2.0g/t gold. This was chosen as a cost base that reflects the underground mining and processing costs similar to that at Alkane's planned underground TGO operation.

Mining

It was assumed that mineralisation beneath the Proprietary pit could be potentially mined via medium to small scale mechanised underground mining methods, similar to that currently being planned at TGO.

The Resource extends nominally 200m below the mined Proprietary Pit. Alkane considers material at this depth would fall within the definition of 'reasonable prospect of eventual economic extraction' within an underground mining framework.

No dilution or cost factors were applied to the estimate.

Metallurgy

Globally, high sulphidation deposits are almost always refractory and thus requiring non-standard recovery processes. Late in 1997 a program of metallurgical testwork was initiated on composite diamond drill core samples representative of four mineralogically distinct sulphide ore types. The work comprised a number of scoping studies to determine the recoverability of gold and copper from:

- direct cyanidation, or
- find grinding – direct cyanidation, or
- flotation concentrate, or
- pressure oxidation, or
- roasting, or
- bacterial oxidation (bio-leach).

Results of direct cyanidation tests indicate that the ore is moderately refractory and recovery is grind size dependent. Recoveries for direct cyanidation were less than 60% of the gold.

Flotation however achieved plus 95% recovery of the gold and copper values. In addition the concentrate is amenable to roasting/cyanidation and also to pressure oxidation/cyanidation with the latter providing excellent gold extraction of 91%. Copper extraction was also excellent (>90%) and could potentially be recovered ahead of cyanidation.

Bio-oxidation also indicated very encouraging recoveries with 99% sulphide oxidation achieved together with 95% dissolution of copper values within 7 days. Subsequent cyanidation resulted in the recovery of 95% of the gold.

No metallurgical recovery factors were applied to the Mineral Resources or Resource Tabulations.

Competent Person

The information in this report that relates to the Mineral Resource estimates is based on, and fairly represents, information which has been compiled by Mr Craig Pridmore, Geology Superintendent Tomingley Gold Operations, who is a Member of the Australasian Institute of Mining and Metallurgy and an employee of Alkane Resources Ltd. Mr Pridmore has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that is being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Pridmore consents to the inclusion in this report of the matters based on his information in the form and context in which they appear.

Other information in this report that relates to historic exploration results is based on information compiled by Mr D Ian Chalmers, FAusIMM, FAIG, (director of the Company) who has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Chalmers consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Disclaimer

This report contains certain forward looking statements and forecasts, including possible or assumed reserves and resources, production levels and rates, costs, prices, future performance or potential growth of Alkane Resources Ltd, industry growth or other trend projections. Such statements are not a guarantee of future performance and involve unknown risks and uncertainties, as well as other factors which are beyond the control of Alkane Resources Ltd. Actual results and developments may differ materially from those expressed or implied by these forward looking statements depending on a variety of factors. Nothing in this report should be construed as either an offer to sell or a solicitation of an offer to buy or sell securities.

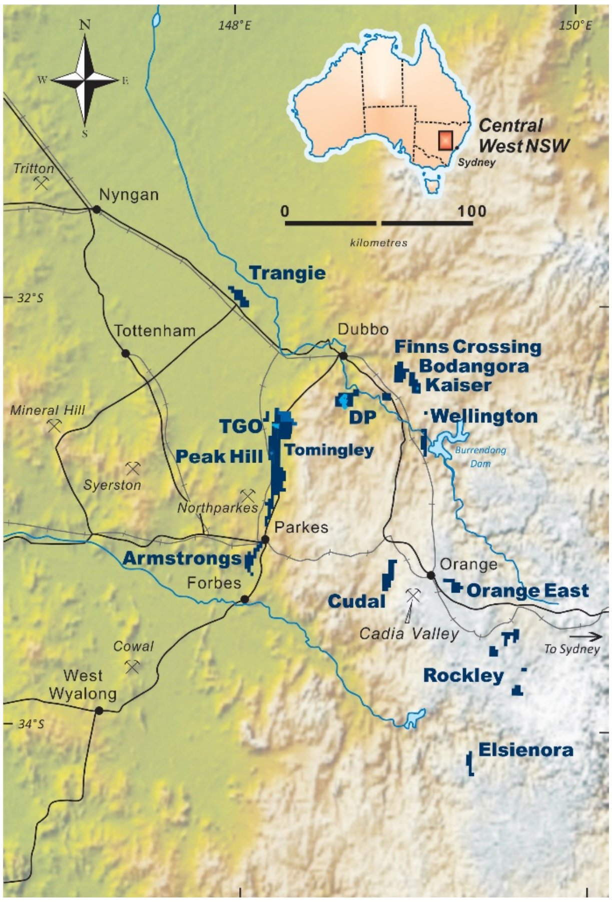
This document has been prepared in accordance with the requirements of Australian securities laws, which may differ from the requirements of United States and other country securities laws. Unless otherwise indicated, all ore reserve and mineral resource estimates included or incorporated by reference in this document have been, and will be, prepared in accordance with the JORC classification system of the Australasian Institute of Mining, and Metallurgy and Australian Institute of Geoscientists.

ABOUT ALKANE - www.alkane.com.au - ASX: ALK and OTCQX: ANLKY

Alkane is a multi-commodity company mainly focused in the Central West region of NSW, Australia. Currently Alkane has two advanced projects - the Tomingley Gold Operations (TGO) and the nearby Dubbo Project (DP). Tomingley commenced production early 2014. Cash flow from TGO has provided the funding to maintain the project development pipeline and has assisted with the pre-construction development of the DP.

The DP is a large in-ground resource of zirconium, hafnium, niobium, yttrium and rare earth elements. As it is an advanced poly-metallic project outside China, it is a potential strategic and independent supply of critical minerals for a range of sustainable technologies and future industries. It has a potential mine life of 75+ years. The DP is development ready, subject to financing, with the mineral deposit and surrounding land acquired and all major State and Federal approvals in place.

Alkane's most advanced gold copper exploration projects are at the 100% Alkane owned Bodangora, Wellington, Rockley and Elsienora prospects. Wellington has a small copper-gold deposit which can be expanded, while at Bodangora a large monzonite intrusive complex has been identified with porphyry style gold copper mineralisation. Gold and base metal mineralisation has been identified at Rockley and Elsienora.



The following tables are provided to ensure compliance with the JORC Code (2012) edition requirements for the reporting of exploration results.

APPENDIX 1

JORC Code, 2012 Edition – Table 1 report – Peak Hill

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

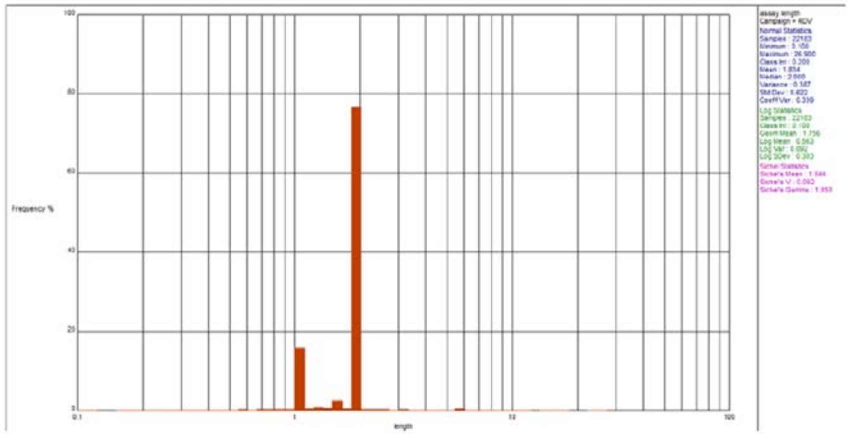
Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	The Peak Hill Gold Project has been evaluated using all of the available known Blast Holes (BH), Auger (AUG), air core (AC), reverse circulation (RC) and diamond drilling (DD) holes. Not all of this drilling lies within the current resource outline. So called "modern" exploration at Peak Hill began in the early 1960's. The Peak Hill project was evaluated using the information from the data gathered from the holes below: AC - 66 holes for 1,237.5m RC – 361 holes for 26,384.2 m BH Grade Control – 109,326 holes for 565,517.9 m DD - 95 holes totaling 16,665.53m. this includes 39 holes which contained RC precollars Due to the age of the project limited collated meta data for the nature of the quality of sampling is unavailable. Certain assumptions have been made based on the quality of the sampling methods. The entire Peak Hill deposit was estimated using only the available RC and Diamond drill holes. Over 80% of all RC and diamond drill holes used in the estimation were sampled on a 2m sample basis The Underground resource that this reports relates to only incorporates specific RC and Diamond holes of varying ages of Drilling. RC - 54 holes DD - 57 holes The latest drill hole series which includes the "PRD" prefix are diamond drill holes and were sampled at a nominal 2m interval.
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	It is presumed that all the RC and Diamond drilling was completed to industry standards. The recent "PRD" series diamond holes were laid out in suitably labelled core trays. A core marker (core block) was placed at the end of each drilled run (nominally 3 or 6m) and labelled with the hole number, down hole depth, length of drill run. Core was aligned and measured by tape, comparing back to this down hole depth consistent with industry standards.

Criteria	JORC Code explanation	Commentary
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	RC Drilling – It is assumed the entire RC sample was collected at predominantly 2m intervals and delivered into a large plastic bag via a cyclone where it would have been split through a riffle splitter. The split samples would then have been placed in a pre-numbered calico DD Drilling – sample intervals were defined by geologists during logging The predominant sample interval was 2m some intervals were 1m sampled. It is presumed that the core was cut in half with a saw. The PRD series diamond holes were ¼ core cut and sampled. All samples sent to the laboratory were assumed to be crushed and/or pulverised to produce a ~100g pulp for assay process. All RC & DD samples and core samples were assumed to be fire assayed using a either a 30g or 50g charge.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	Detailed resource definition drilling was completed primarily by RC techniques using a 130mm or 140mm diameter face sampling hammer. It is assumed the DD holes (without Prefix "PRD") were drilled using NQ3 core drilling. The PRD series diamond Holes with Pre-collars were completed to competent material, with holes cased off and completed to depth using HQ3 (61mm diameter) core with some hole reducing to NQ3. Other than PRD holes which were surveyed by down hole camera, the method of orientation is not known.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	DD and RC - sample recovery was visually estimated and was generally very good (>90%) aided by the use of oversized shrouds through oxide material. Samples were even in size. Samples were rarely damp or wet. DD – Good drillhole summary data for the PRD series has been attained. Core loss was identified by drillers and calculated by geologists when logging. Generally ≥95% was recovered and any loss was usually in portions of the oxide zone. Triple tube core (HQ3) was used through the oxide material to ensure the greatest recovery.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	RC drilling was completed using oversized shrouds to maintain sample return in oxide zone and all samples were split using riffle or cone splitters. Use of RC rigs with high air capacity assists in keeping samples dry. Triple tube coring was used at all times to maximise core recovery with larger diameter (HQ3) core used in the oxide and saprolite zones in the PRD series holes.
	• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	There is no known relationship between sample recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	Due to the age of the historical drilling only the methodology of the PRD series holes can be described. RC - each one metre interval was geologically logged for characteristics such as lithology, weathering, alteration (type, character and intensity), veining (type, character and intensity) and mineralisation (type, character and volume percentage). DD – all core was laid out in core trays and geologically logged for characteristics such as lithology, weathering, alteration (type, character and intensity), veining (type, character and intensity) and mineralisation (type, character and volume percentage). A brief geotechnical log was also undertaken collecting parameters such as core recovery, RQD

Criteria	JORC Code explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	All logging was qualitative with visual estimates of the various characteristics. DD – The core photos were unable to be located.
	• *The total length and percentage of the relevant intersections logged.*	All DD core and RC chip samples have been geologically and geotechnically logged by qualified geologists.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	DD – For the "PRD" series holes the core was marked up by the geologist and predominantly ¼ cut using an Almonté (or equivalent) core cutting saw. Some zones were ½ cored and sampled. Sampling intervals were not based on geology, were predominantly 2m intervals in length. All diamond core was sampled. It is assumed that all core other than the "PRD" series was ½ cored due to the unavailability of any reference core to site check. Laboratory Preparation – drill core was oven dried prior to crushing to <6mm using a jaw crusher, split to 3kg if required then pulverised in an LM5 (or equivalent) to ≥85% passing 75µm. Bulk rejects for all samples were discarded. A pulp packet (±100g) is stored for future reference.
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	RC – Limited data is available for recent RC drilled only. It is assumed the 2m composites were taken due the sampling intervals received from the historical databases No data is available to assess if the samples were wet or dry. Laboratory Preparation – the entire RC sample (3kg) was dried and pulverised in an LM5 (or equivalent) to ≥85% passing 75µm. Bulk rejects for all samples were discarded. A pulp packet (±100g) is stored for future reference.
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	The holes with prefix "PRD" were drilled by Alkane (ALK) resources. The sampling techniques are of industry standard and considered adequate. Earlier holes were drilled/ supervised by geologists from reputable geological recognised companies (Geopeko, Goldfields). As such it is deemed that the sample techniques would be of good quality.
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	For the "PRD" series diamond holes the repeat checks were undertaken on specific holes intersections. (Nominally every 20m). It is unclear if the core was re-cut and sampled, or if the pulps were re assayed or if the pulps were umpire checks through a secondary laboratory. QAQC data for all other holes was not available to report. The assumption that Quality control procedures with standards and field duplicates would have been performed.
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	N/A
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Sample sizes are assumed to be within industry standard and considered appropriate.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	For all 1m samples used in the resource estimate gold was determined using a 50g charge fused at approximately 1100°C with alkaline fluxes, including lead oxide. The resultant prill was dissolved in aqua regia and gold determined by flame AAS. For 3m composite samples gold was determined using a 30g charge (more rarely 50g charge). For other geochemical elements, samples were digested in aqua regia with each element concentration determined by ICP Atomic Emission Spectrometry or ICP Mass Spectrometry.

Criteria	JORC Code explanation	Commentary
		These additional elements were generally only used for geological interpretation purposes, are not of economic significance and are not routinely reported.
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	Not applicable to this report or deposit.
	• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	Commercially prepared Certified Reference Materials (CRM) and blanks were inserted at 1 in 50 samples. CRM's were not identifiable to the laboratory. Field duplicate samples were inserted at 1 in 50 samples (alternate to CRM's). Laboratory QAQC sampling includes insertion of CRM samples, internal duplicates and screen tests. This data was reported for each sample submission. Failed standards result in re-assaying of portions of the affected sample batches. To the best of Alkane resources knowledge screen fire assay checks (75µm mesh) were undertaken on some drill core samples. Screen fire assay data overrides all other methods.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	The Historical Drill data was compiled and collated, and reviewed by senior staff. Several holes were removed from the estimation due to low confidence in assay values.
	• *The use of twinned holes.*	N/A
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	All available historical data was located in various digital formats. There was not a single "Peak Hill data base" where all drillhole data was captured. It is assumed that the digital drillhole data found is correct and previously verified. There is no digital lab assay data (Certificates of analysis) available to confirm assay values. With the exception of the "PRD series holes. Due to the historical data being in various formats and the potential to have duplication of drill holes, sample Id's etc. The data was given to an external source for collating and to undertake QAQC on the data. The Peak Hill historical data was captured in various local grids. Documentation has shown that the hole coordinates post 1996 are assumed to be correct (PRD series). The hole collars with the PHNSW prefix are not fully correct due to the small angular error with the grid rotation but these holes do fall in an acceptable error. All drill hole coordinates were to be converted from Local grid to AMG66 then to MGA94. The hole coordinate conversions were cross checked with the original "assumed coordinates of the PRD hole series to ensure a high degree of accuracy. All Peak Hill drillhole data is stored in a "Datashed" Microsoft SQL database. Data was also verified on import into mining related software.
	• *Discuss any adjustment to assay data.*	No assay data was adjusted. Screen fire assays take precedence over all other assay techniques.
	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource*	The collar coordinates for historical holes pre 1996 have been checked and final coordinates adopted from the transformation based on 73 known points of reference:

Criteria	JORC Code explanation	Commentary
Location of data points	*estimation.*	48 drill holes, 10 survey stations, including one photo control point, 10 tenements corner pegs and 5 points along a traverse between the mine site and Westray. The coordinates for each point were provided in AMG, ISG and Local Values. ISG values were adopted from a number of stations in the mine area, including the Peak Hill Trig/SSM whilst local coordinate values were adopted from pit survey stations 900 and 901. AMG coordinate values were calculated from the ISG values. The final AMG coordinates were then transformed to MGA94. RC and DD holes within the resource estimation were surveyed at nominal 20m down hole during drilling to maintain drilling direction using a single shot camera.
	• *Specification of the grid system used.*	All drill holes have been converted from the various Peak Hill Local Grids to AMG66 then transformed to the current MGA94 grid system.
	• *Quality and adequacy of topographic control.*	A site based digital terrain model was developed from accurate (± 0.1m) survey control by licenced surveyors.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	Historical drilling (PHNSW series) within the reported underground resource beneath the Proprietary pit was completed on east-west sections spaced nominally 25m apart with holes spaced at varying intervals along the lines ranging from 20m to 80m. The more recent "PRD" prefix diamond holes were drilled in a North East direction on a nominal 50 x50 drill spacing.
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	The underground resource that is related to this JORC release lies beneath an open pit that was grade controlled by tight spaced BH drilling which defined a core of gold mineralisation associated with alteration of the host rocks. The dimensions of the mineralised envelope within the pit was clearly identifiable through the in-pit grade control drilling and can be projected with relative confidence to the drillhole intersections below the pit. All the underground Resource will be inferred based on the drill hole spacing.
	• *Whether sample compositing has been applied.*	Sample compositing was not applied until resource estimation stage. Over 80% of the RC and Diamond holes during the drilling process were sampled/composited at a 2m intervals. This can be seen in the raw assay length histogram below.

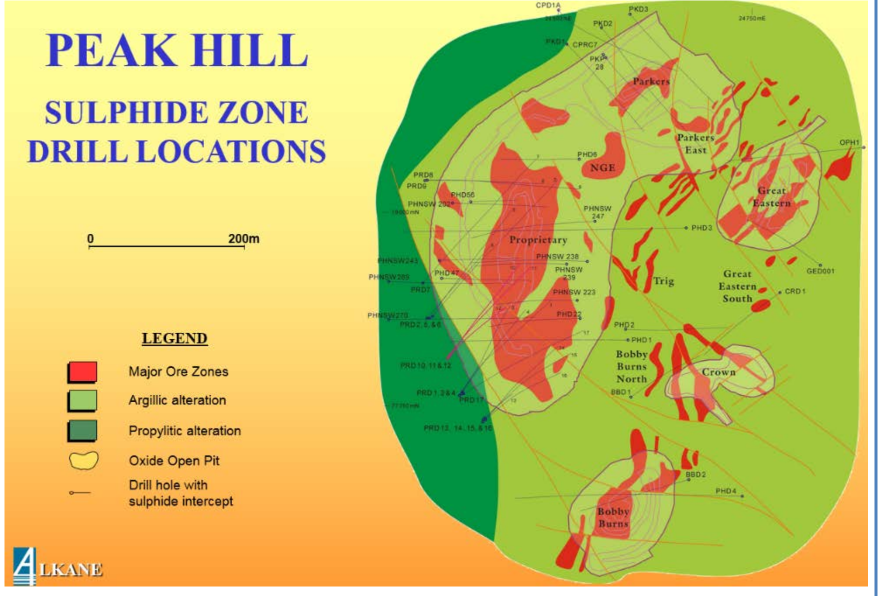
Criteria	JORC Code explanation	Commentary
		 Histogram of raw gold assay length (RC/DD samples) Peak Hill
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	Much care is given to attempt to intersect mineralisation at an optimal angle, but in complex ore bodies this can be difficult. A number of drilling directions were used in the early drilling phases in an attempt to optimise the intersection angle. The chosen drilling direction for all future drilling of NE/SW appears optimal based on the mapping and grade control that defined some of the High grade cross cutting structural orientations. The latest holes “PRD prefix series were all drill in a NE direction.
	• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	It is not thought that East west drilling direction will overly bias assay data at Peak Hill as the drillhole density within the system is quite sparse. Any High grade intercepts corresponding to the potential high grade East-west cross cutting structures has not been overly smoothed due to the IOK estimation techniques used within that domain. Also all of the resource is classified as inferred.
Sample security	• *The measures taken to ensure sample security.*	All drillhole sample data used in the estimation is historical and the measure taken to ensure the security is unknown.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	The Company does not routinely have external consultants verify exploration data until resource estimation procedures are deemed necessary. The Peak Hill exploration data was reviewed 1998 by Alkane resources in an attempt to review and establish grid transformations for collar and downhole surveys. No drilling has been undertaken since the 1999 and no audits prior to the recent data compilation has been undertaken. All possible checks relating to the current database which this resource estimation used has been undertaken.

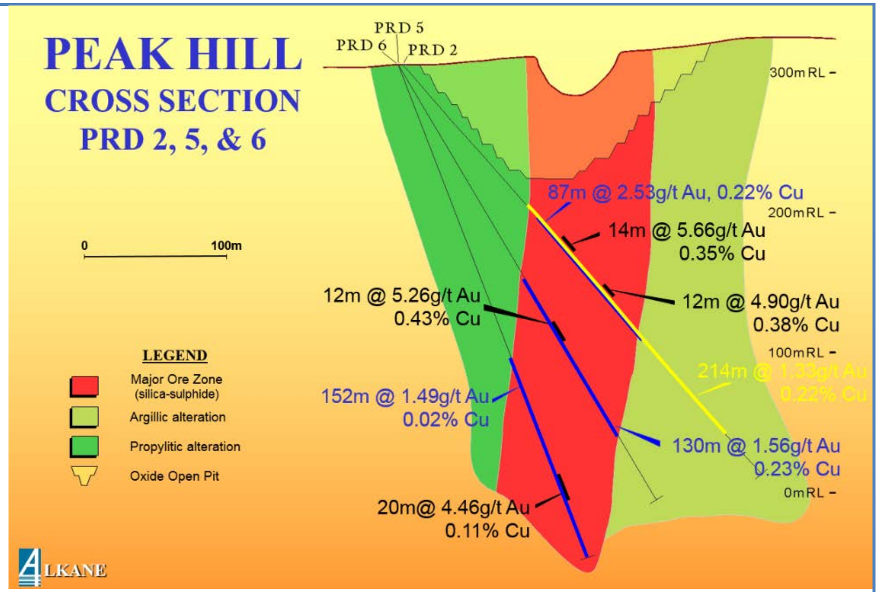
Section 2 Reporting of Exploration Results

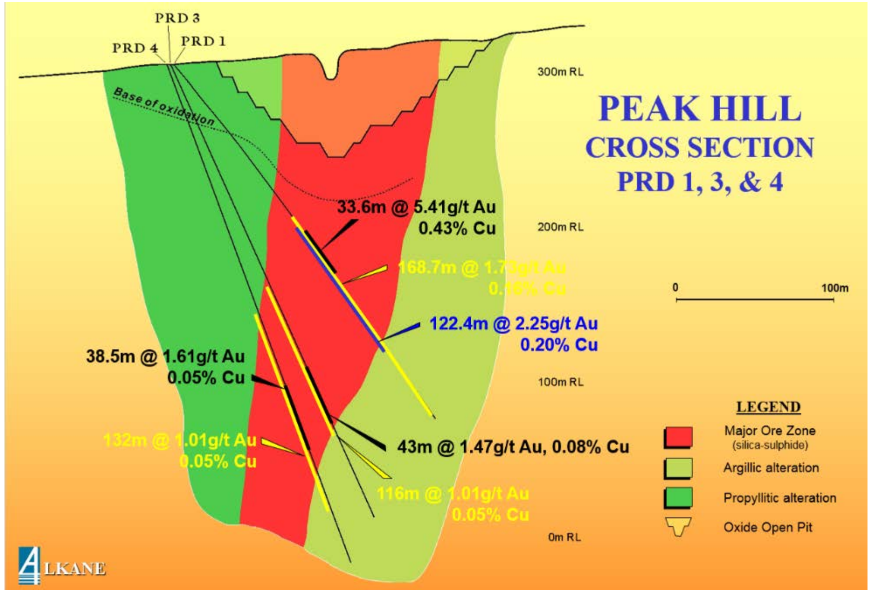
(Criteria listed in the preceding section also apply to this section.)

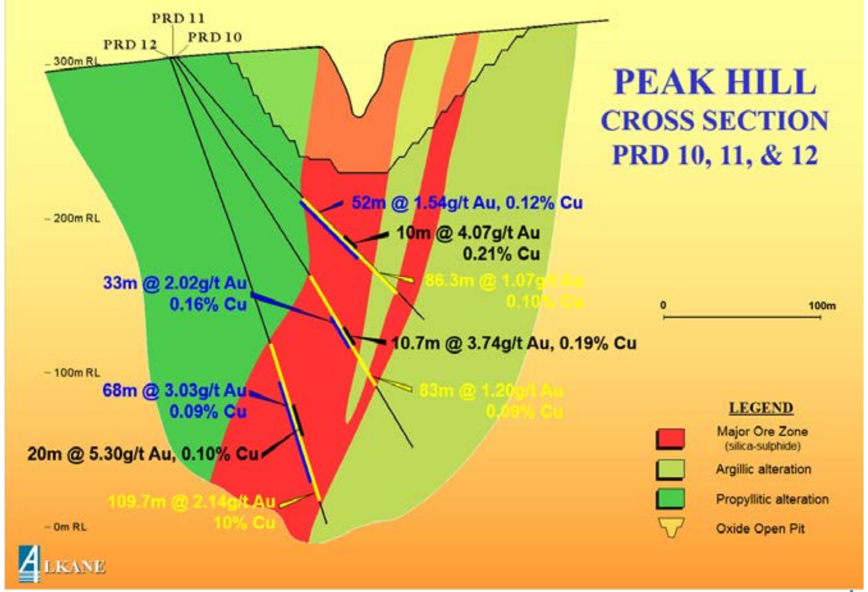
Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	The Peak Hill Deposits lies within MLs 1351, 1364, 1479, 6036, 6042, 6277, 6310, 6389, 6404 & GL 5884
	• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	MLs & GL expires 17 January 2022
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	The Peak Hill Project has had several parties undertaking exploration activities over the area. These include: Mines Exploration 1964, Occidental Mineral 1977, Jododex 1978, Cypress 1995, Goldfields, GeoPeko 1987-1988 Alkane Resources 1993 - 2018
Geology	• *Deposit type, geological setting and style of mineralisation.*	Geological nature of the NSW Peak Hill Gold mine is well documented elsewhere. Geological setting: The general consensus among previous workers is the Peak Hill deposit represents products of a high sulphidation system with a magmatic fluid source. Differences in interpretation exist in the relative timing of alteration, mineralisation and deformation, and depth of the formation. The mineralisation appears to be related to a regional shear zone but a link to a porphyry system has not been rules out. High pyrite concentrations, a Cu sulphide assemblage dominated by enargite and tennatite and extensive advanced argillic alteration characterises the Peak Hill deposit as a high sulphidation porphyry system. The Peak Hill high sulphidation Au-Cu deposit is hosted by strongly deformed and hydrothermally altered volcanoclastic rocks. Predominantly andesitic volcanoclastic breccias, lesser sandstone/siltstone units, minor lava and black mudstones. Oxidation has extended to >90m. The redox boundary between oxidised and unoxidised rock is irregular due to poddy nature of the primary sulphide interface extending into the overlying oxidised material. Mineralisation: The primary alteration comprises of Au, Cu sulphides and pyrite associated with extensive advanced argillic alteration and silicification in a steeply plunging lenticular zone (Main Propriety pit). Pyrite content commonly exceed 15% and barite is a prominent accessory mineral.

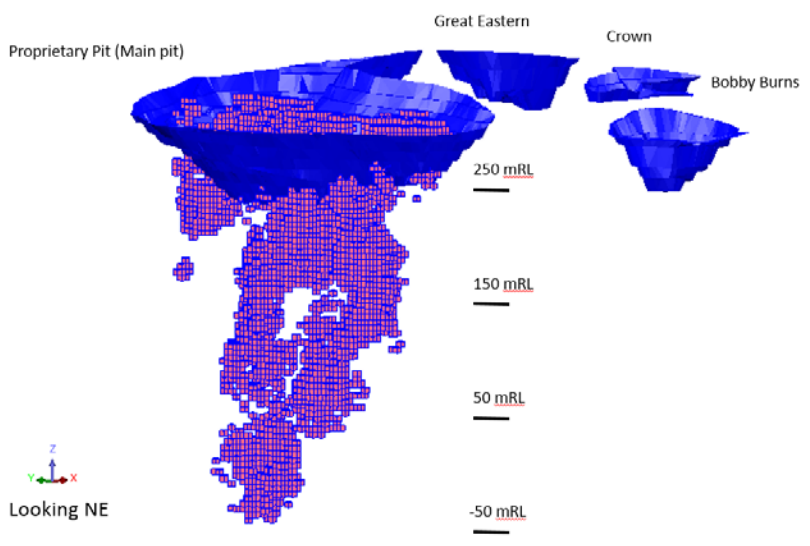
Criteria	JORC Code explanation	Commentary
		The Au-Cu ore occurs in steeply plunging shoots that broadly coincide with a major shear/fault system and a distinctively zoned alteration system characterised by an acid alteration core of pyrophyllite and vuggy silica, grading out through less acid alteration assemblages (white mica bearing alteration-paragonite+muscovite to kaolinite) to propylitic chlorite/ epidote margins. Gold grades >1g/t at Peak Hill are coincident with concentrations of Quartz-pyrite-barite veins. These veins are not confined the acidic pyrophyllite core, they also occur in the advanced Argillic paragonite-muscovite zone which is proximal to the pyrophyllite core. The zones of high grade <5g/t generally occur in microcrystalline quartz altered domains in the paragonite-muscovite alteration zones. The High grade zones are also associated with tight east west structures that cross cut the Proprietry pit. These structures are hard to see but can be spatially identified with the grade distribution within the tightly spaced blast hole drilling.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.*	Too numerous and not practical to summarise all drill hole data used. All drilling results have been reported previously
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Exclusion of drill hole data will not detract from the understanding of this report. All drill data is historical and has been previously reported. The holes are numerous in a previously operating mine area.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*	Previously reported results have been – For uncut gold grades; Intercepts were defined (bounded) by 0.5g/t gold outer limit and may contain some internal waste; Only intervals grading ≥1 g/t gold were reported; Grades were calculated by length weighted average.
	• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	Exploration results have been previously reported as length weighted average grades with internal high grade intercepts reported separately.

Criteria	JORC Code explanation	Commentary
	• *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No metal equivalents are reported.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* o *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* o *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Previously reported exploration results include the drilled width and an estimate of true width. At Peak Hill Deposit the true width is approximately 80% of the drilled width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Cross section and a plan showing geological alteration of the various Peak Hill volcanoclastic assemblages with drill collars were included with previously reported exploration results. Typical plans and cross sections included below. 


PEAK HILL
CROSS SECTION
PRD 2, 5, & 6
PRD 5
PRD 6
PRD 2
300mRL
200mRL
100mRL
0mRL
0
100m
87m @ 2.53g/t Au, 0.22% Cu
14m @ 5.66g/t Au
0.35% Cu
12m @ 5.26g/t Au
0.43% Cu
12m @ 4.90g/t Au
0.38% Cu
214m @ 1.33g/t Au
0.22% Cu
152m @ 1.49g/t Au
0.02% Cu
130m @ 1.56g/t Au
0.23% Cu
20m@ 4.46g/t Au
0.11% Cu
LEGEND
Major Ore Zone
(silica-sulphide)
Argillic alteration
Propylitic alteration
Oxide Open Pit
ALKANE


PRD 3
PRD 4
PRD 1
Base of oxidation
PEAK HILL
CROSS SECTION
PRD 1, 3, & 4
300m RL
200m RL
100m RL
0m RL
0
100m
33.6m @ 5.41g/t Au
0.43% Cu
168.7m @ 1.73g/t Au
0.16% Cu
122.4m @ 2.25g/t Au
0.20% Cu
38.5m @ 1.61g/t Au
0.05% Cu
132m @ 1.01g/t Au
0.05% Cu
43m @ 1.47g/t Au, 0.08% Cu
116m @ 1.01g/t Au
0.05% Cu
LEGEND
Major Ore Zone
(silica-sulphide)
Argillic alteration
Propylitic alteration
Oxide Open Pit
ALKANE

Criteria	JORC Code explanation	Commentary
		
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Data relating to all exploration drill holes has been reported in previous documentation of exploration results.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	No additional or new drilling results are being reported at this time.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*	Mining of the Peak Hill deposit using open pit mining techniques focusing on the oxidised material for Heap leach Gold extraction was completed in 2002. Additional drilling may be completed to compliment an assessment of current estimated mining resources below the open pit by underground methods.

Criteria	JORC Code explanation	Commentary
	• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	**Peak Hill Gold Mine +2.0g/t lower cut**  The attached image above shows estimated blocks of +2.5g/t inferred mineralization that has the potential to be mined through underground mining methods

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	All Drillhole data was migrated directly from Access Databases in the Tomingley Gold Operations SQL Datashed database. It is assumed that the historical data prior to the migration had been checked at the time of drilling and all protocols to ensure the data was valid occurred.
	• *Data validation procedures used.*	The Datashed database that currently is being used to run all future estimates was checked for duplicate holes and There are validation checks to avoid duplications of data and overlapping intervals. Survey grid transformation calculation checks were undertaken when converting local grid coordinates to MGA. The data were further validated for consistency when loaded into Surpac and desurveyed. All holes associated with mineralisation below the pits were checked to ensure any hole with data concerns were removed from the estimation process.

Criteria	JORC Code explanation	Commentary
		Four holes (PHD001,PHD002, PHD003, PHD004) were removed from the estimation due to observed during the drillhole audit process issues with downhole assay grades
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *(If no site visits have been undertaken indicate why this is the case.)*	The Peak Hill Resource Model was developed by Mr Craig Pridmore who has been working with Alkane Resources since March 2015. The quoted resources have been compiled by Mr Craig Pridmore, Geological Superintendent, Tomingley Gold Operations Pty Ltd.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	The geological model was built on the extensive historical pit mapping and more recent ground truthing of the old mapping on the Peak Hill area. The in pit mapping and recent surface mapping was incorporated to produce a project map over all the pits and formed the backbone of the Geological/Structural model currently being implemented. The geological model is based on the identification of seven broad geological units made up of extremely altered volcanoclastic assemblages. All the units contain varying volcanoclastic rocks, but each unit has been separated based on texture, grain size, alteration and rock type. These seven broad units form the basis of the domaining used in the estimation. The domain wireframes were built by Alkane geologists. The geological domains have been combined with both the historical and recent structural mapping. The alteration envelope which was generated by previous workers through PIMA spectroscopy of the core, was then overlayed onto the geological/structural model for correlation and confirmation.
	• *Nature of the data used and of any assumptions made.*	Structural measurements from the Proprietary and Parkers Pit were fundamental in the creation of the Geological/structural model. Due to the intense alteration and numerous workers over the decades, the geological logging of the drill holes has not been consistent. The identification and logging of the original rock protolith and the alteration is unable to be quantified and as such unable to utilised affectively. All the surface mapped units have been extrapolated down based on the orientation of the surface structural mapping. The mineralisation appears to be predominantly bounded within these domains with these exception of some silica hydrothermal breccias which appear to cross-cut the lithology. The mineralisation has been modelled as separate domains and were generated based on the in-pit mineralised ore envelope, defined by the tightly spaced blast hole drilling. This envelope was then extrapolated down and wire framed against the mineralisation at depth.
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	The Peak Hill deposit beneath the current open pit has limited drilling to change the classification of the underground resource from inferred to indicated. The mineralisation beneath the Proprietary pit (which this resource statement refers) does appear to be consistent in relative dimensions which were mapped and identified in the open pit. The mapped alteration (via PIMA) downhole in the "PRD" drillhole campaign is consistent, as such any future drilling should not change the overall fundamental shape of the Proprietary

Criteria	JORC Code explanation	Commentary
		ore envelope at depth. Any future additional drilling campaigns will need to attempt to define the high grade lenses within the mineralised envelope that are associated with the east west crosscutting structures and quartz –barite veining.
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	Geological, structural and alteration mapping was used to develop a geological model. Alteration and mineralisation estimates along with grade guided the interpretation of the ore envelope wireframes at a nominal 0.5g/t Au lower cut-off.
	• *The factors affecting continuity both of grade and geology.*	The primary mineralisation comprises Au, Cu sulphides and pyrite associated within extensive advanced argillic alteration and silicification in a steeply dipping lenticular zone (Proprietary ore envelope). The continuity and length of the High gold grade lenses within this broad mineralised envelope is not able to be defined below the pit due to the limited broad spaced drilling.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The main mineralisation within the Proprietary pit extends some 300m in a north-south direction, is approximately 50m wide and extends from surface to a depth of 360m. The depth of mineralisation is only constrained by the depth of the current drilling.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	The resource model has used all the exploration drill data (RC/ DD). The resource model has incorporated sub-domaining of the main geological units and mineralised lodes. This sub-domaining has been incorporated into the resource model based on elements identified through in-pit mapping and increased drill density through the historical blast hole grade control drilling. There are 6 Geological domains (10000, 500, 400, 300, 200, 100 these domains are separated based on texture, grain size, alteration and rock type. There are 2 mineralised sub domains (301,101) which define the main high grade ore lens of the Proprietary Pit and Parkers Pit and one enclosing background domain (10000) to capture minor mineralisation outside the main domains. Two surfaces were also used to separate material types - topography and base of oxidation surfaces. The material type classification was used to allocate density values. The drillhole data was flagged by the domain wireframes in priority order, to prevent double use of the data in any intersecting zones. The samples were composited to 2m, the most common sample length and flagged by the topography and base of oxidation surfaces. Top-cuts were selected for each domain based on histograms, probability plots and cutting statistic plots. The top-cuts ranged from 3g/t gold to 30.0 g/t gold for the mineralised zones. After top-cutting, the maximum coefficient of variation for the mineralised domains ranged from 0.81 - 4.04. The domains have been defined by Alkane, primarily on the basis of lithology and alteration, but in the case of Domains 101 and 301 as higher grade “cores” within the broader Domains 100 and 300. The mean grades clearly show the difference between the broader litho-stratigraphic domains and the two high grade sub-domains (Domains 101 and 301). The lower CoV’s for these two domains and their lower grade ‘halo’ domains stand in contrast to the remainder of the domains, which have been left significantly more mixed in terms of the gold grade range – this is clearly due to the separation of zones of like-grade.

Criteria	JORC Code explanation	Commentary
		However, the CoV values are still generally high, despite the sub-domaining and this has implications for the estimation method. Highly positively skewed distributions are difficult to model accurately using a one-step linear geostatistical estimation method such as Ordinary Kriging. Such methods tend to over-smooth the grade estimates, distorting the grade-tonnage curve, especially at higher grade cut-offs. Since relatively high cut-off underground mining is being considered at Peak Hill, such considerations are important. There is evidence to suggest that a significant proportion of the gold mineralisation is concordant and therefore its continuity is controlled by the local stratigraphy. However, it is also evident that very high grade gold mineralisation, especially in Domain 101, is associated with steeply dipping cross-cutting structures that are more-or-less orthogonal to the bedding planes. Since Domain 101 is the most obvious and immediately interesting area under consideration for underground mining potential, the significance of the high grade cross-cutting mineralisation is of the highest priority at the current time. Based on the geological evidence the principal estimation for the Main Proprietary Lode (101) was undertaken using Indicator based Ordinary Kriging (IOK) with the remaining domains estimated using Dynamic Ordinary Kriging (DOK). Inverse Distance Squared checks made. Variography was undertaken on all Domains. Reasonably robust variogram models were obtained for all of the estimation domains. With the exception of Domain 101, for which anisotropic models have been generated, the range of continuity for gold grade was found to be isotropic – it is likely that there is, in reality, some level of anisotropy in most of the domains, but this could not be detected. These variogram models have been incorporated in the resource block model. The orientation of the search ellipse for each domain was controlled by dynamic anisotropy, which uses the bounding mineralised surfaces of the lodes and discrete wireframes for the unconstrained mineralisation. This method provided a unique dip and dip-direction for each block. Copper was estimated using a one step linear estimation method of ordinary kriging (basic statistics indicated that there is no correlation between gold values and copper values). Estimation of copper was constrained to the geological a mineralised domains. The principal estimation using Surpac software was ordinary kriging with ID2 checks using the same dynamic anisotropy. A parent block size of 5mE x 5mN x 5mRL no sub-blocking was used in the block model.
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	Open Mining of the oxide material at Peak Hill as a bulk Au commodity by Alkane commenced in 1996 with completion in 2002. Prior to Alkanes production from 1890-1916 the Peak Hill Gold deposit was mined by various mining methods including underground. Back calculations of the total tonnes of +0.5g/t material removed from Peak Hill are within 10% of the estimated resource within the open pits using the current estimated block Model. The methodology of Au extraction by Alkane Resources was through Heap Leach and as such a full grade/ounce reconciliation is not able to be obtained as the recovery would only be an estimate.
	• *The assumptions made regarding recovery of by-products.*	No assumptions made - Estimates were made for gold and copper; only gold is of economic significance at this time.

Criteria	JORC Code explanation	Commentary
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	No deleterious elements identified for estimation
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	The primary block size for the resource model is 5mE x 5mN x 5mRL, with no sub-blocking. The primary search on each domain is variable based on the variograms with a range from 40m to 60m with a Major/Semi ratio of 1 and a Major/Minor ratio between 2 and 4 depending on the domain.
	• *Any assumptions behind modelling of selective mining units.*	Block size of 5mE x 5mN x 5mRL with no block rotation has been used for the following reasons: 1. A rule of thumb is that the block dimensions for OK should not be less than a third to half of the informing data spacing. Give the current RDV drill spacing of ~20m in the historical pit area, and much wider drilling below this level, these block dimensions do not satisfy this rule, but 2. Given the mixed orientation of mineralisation continuity (i.e. both parallel and almost orthogonal to the stratigraphy), a cubic block represents the best compromise for modelling at this early stage, and 3. An attempt at a higher resolution estimate has been attempted, in order to reduce over-diluting the high grade zone within the 101 lode. Future estimates should attempt to separately domain the internal High grade zones that are structurally controlled. This can only be down with tighter spaced drilling as the dimensions and strike/dip continuity of these high grade zones is currently not known below the Proprietary pit. The resource estimate below the Proprietary pit due to the broad spaced drilling is considered to be of low confidence at this current time and should fit within an "inferred" resource classification.
	• *Any assumptions about correlation between variables.*	No assumptions made
	• *Description of how the geological interpretation was used to control the resource estimates.*	Hard boundaries on all domains within the resource model were used.
	• *Discussion of basis for using or not using grade cutting or capping.*	The gold top cuts were selected using a combination of histograms, probability plots and cutting statistic plots (plots of cut-off grade against Coefficient of Variation (CV) and total metal). Copper was estimation using uncut grades as there is no grade correlation between Au and Cu and Au is the main commodity.
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	Gold estimates were made using a combination of Indicated Ordinary Kriging (IOK) and Dynamic Ordinary Kriging with (DOK) Inverse Distance checks. Copper estimates were made using Dynamic Ordinary Kriging. A variety of checks were used to identify variability between models and also the estimated block grades. Each step of the process has validation steps to ensure estimation validity. Some of the checks incorporated comparison of composites to actual raw drill hole data, 2.5m level comparison checks using various grade cuts. Visual checks of the block estimation against composite and raw drill hole data both on plan and section.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the*	The tonnages were estimated on a dry tonnage basis.

Criteria	JORC Code explanation	Commentary
	method of determination of the moisture content.	
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	The Mineral Resource cut-off grade for reporting of underground global gold resources for the Proprietary deposit was 2.0g/t gold. This was chosen as a cost base that reflects the underground mining and processing costs similar to that at Alkane's planned underground TGO operation.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	The Peak Hill resource beneath the main Proprietary pit associate with the main mineralised domain 101 is currently being reviewed as a potential future underground mining operation. No mining factors were invoked into the Peak Hill Resource estimation process.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	A number of historic metallurgical assessments have been completed. These included standard gravity – CIL; flotation concentration; bacterial leach; roast – leach; fine grind and intense cyanide leach. Roast – leach and bacterial leach gave gold recoveries of +90%.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	The site has been active mine since 1996 and appropriate waste storage and treatment facilities are present. A review of the development consent would be required for a new operation.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	Density determinations for the Peak Hill project were based on data from 21 historical Diamond holes and 130 measurements. Data measurement was restricted to materials that were either logged as Oxide or fresh. Oxide material was given a density of 2.34 and the fresh 2.94. All the underground resource had an assigned density of 2.94
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	SG measurements completed on all material types – see above. Documentation on the method of the density measurements are not available, but are assumed to be relatively accurate.
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	No assumptions made – SG determined and individual values applied to each material type based on wire framed surfaces
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	*Resource Model* The resources were classified based on drilling density, geological confidence and grade continuity. The actual break-points for the different resource classes were chosen by inspection of the model in relation to the drilling density and confidence in the geological

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		model. As a general rule all areas with a 10m x 10m drill spacing was classified as measured. Zones with a nominal drill spacing of 20m x 25m has been classified as indicated, material that has been drilled to a 30m x 40m spacing is in the inferred category. The classifications are based on the confidence of ounce conversion. Measured would have a 90% conversion probability, indicated would have a 75% confidence level and inferred a 50% confidence in ounce conversion if mined.
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	The Peak Hill Project was estimated using high proportion of Reverse Circulation (RC) drillhole data (361) holes and 91 diamond holes. The RC drilling was assumed to be conducted using industry-standard methods and was not affected by high water flows, so there is no reason not to accept the RC results. 54 diamond holes and 54 RC holes were used in the estimation of the main Proprietary 101 mineralised domain.
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The classification reflects the Competent Persons view of the deposit and its supporting data
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	No external audits have been carried out on the resource estimation. Cube Consultants have been used to review and update the estimation parameters for the Peak Hill Au-Cu project. The scope of work was: 1. Undertake exploratory data analysis on the drill data provided by Alkane. Alkane has provided Resource Development ("RDV") and Blast Hole ("BH") grade control data. Peak Hill was mined by open cut methods, hence the existence of the BH dataset. However, future mining is highly likely to be limited to Underground operations. 2. Make compositing and top cut recommendations as well as an assessment of the suitability of the Dynamic Ordinary Kriging ("DOK") estimation methodology for Peak Hill. 3. Undertake a spatial structural analysis, for representative high and low grade domains, resulting in the modelling of gold grade variograms for use in the DOK estimation runs. 4. Undertake search neighbourhood analyses to assist with the choice of DOK search parameters. 5. Deliver an opinion on the most suitable estimation block size and dimensions. 6. Update the estimation parameter file for use in the DOK routine. 7. Undertake boundary analysis on selected estimation domains. 8. Produce a technical summary note explaining the process followed by Cube and briefly discussing the new estimation parameters (IOK).
	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	No statistical or geostatistical method (non-linear or simulation) was used to quantify the relative accuracy of the grade control estimate within confidence limits. Accuracy of the estimate is strongly dependent on: accuracy of the interpretation and geological domaining; accuracy of the drill hole data (location and values); orientation of local anisotropy; and

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		estimation parameters which are reflected in the variogram model used and the parameters used that follow the resource model relatively closely.
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	The resources are global, being based on drillhole data at exploration spacing. To ensure the resources have ‘reasonable prospects of eventual economic extraction’ the resources have been restricted to all material above a gold cutoff grade of +2.0g/t constrained within the main 101 Proprietary Pit Ore Lode beneath the current Open pit, below the 220mRL and excluding all material within the historical underground workings.
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	Not applicable