

7 October 2024



Tomingley Regional Exploration Update

- Recent exploration within the Tomingley Gold Project (TGP) has focussed on defining targets that will add to the resource inventory and further extend mine life for the Tomingley Gold Operation (Tomingley). The exploration included diamond, RC and aircore drilling of several targets; detailed aeromagnetics; airborne gravity; lithogeochemistry for host rock characterisation.
- Drilling at the El Paso prospect and south of the San Antonio deposit (406,000oz Au resource) has improved understanding of the local geology, leading to the delineation of new targets for testing. New prospective andesite targets were identified east and south of San Antonio within the mining lease and significant mineralisation associated with a prospective dacite unit was intersected at El Paso. Results include:

EPD013	12 metres grading 1.50g/t Au from 297 metres;
incl	4 metres grading 2.55g/t Au from 301 metres.

EPP051	3 metres grading 1.49g/t Au from 130 metres;
and	12 metres grading 1.07g/t Au from 216 metres;
incl	1 metre grading 4.36g/t Au from 216 metres;
also	1 metre grading 3.98g/t Au from 221 metres.

- Four RC drill holes tested along-strike and down-dip to the known mineralisation at the Plains prospect hosted within an extensive basaltic andesite. The results indicate the gold structures are continuous and further work will be scheduled:

RWRC481	9 metres grading 0.76g/t Au from 165 metres;
and	4 metres grading 0.89g/t Au from 184 metres.

RWRC482	6 metres grading 1.31g/t Au from 312 metres.
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- Regional aircore drilling has identified new zones of gold mineralisation in the eastern portion of the host Mingelo Volcanics. Assay results have been received from 85 holes drilled along traverses spaced 500m to 1,000m apart. The most significant zone is from three adjacent holes about 1km southeast of the El Paso prospect:

EPAC158	3 metres grading 0.43g/t Au from 96 metres;
and	2 metres grading 0.68g/t Au from 108 metres.

EPAC159	3 metres grading 0.70g/t Au from 78 metres.
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EPAC182

3 metres grading 0.31g/t Au from 75 metres.

- **An airborne gravity gradiometry survey was completed over the northern half of the TGP. Interpretation of the data has improved delineation of the Mingelo Volcanics belt with new structures identified and the discovery of a possible new volcanic belt buried to the east of Peak Hill.**
- **An honours research project on the epithermal gold ($\pm$ copper) deposits at Peak Hill was completed at the end of 2023. The project sought to identify a link between the known epithermal gold deposits and a potential porphyry copper-gold deposit at depth. The project found that the Peak Hill epithermal system is deeply eroded and that an underlying porphyry source could be in proximity to the Peak Hill gold deposits.**
- **Reprocessed 2D seismic data has identified a high priority drill target characterised as a flexure in a significant structure inferred to be a major gold conduit 2km southwest of TGO and only 800m below surface.**
- **Drilling and exploration data compiled from these activities has enabled a number of targets to be prioritised, with follow up scheduled for this quarter.**

Alkane Resources Limited (ASX: ALK) ('Alkane' or 'the Company') is pleased to announce the latest exploration results for drilling in the region around the Company's Tomingley Gold Operations (Tomingley) in Central New South Wales.

Alkane Managing Director, Nic Earner, said: *"We continue to explore at Tomingley both within our approved mining areas and regionally. With current plans already extending to 2032 we are seeking to add further mine life, scale, and grade to Tomingley. It is pleasing to see the various exploration targets around Tomingley yielding results and we look forward to continuing to add to our resource base."*



Tomingley Gold Project (TGP)

Alkane Resources Ltd 100%

The Tomingley Gold Project (TGP) covers an area of approximately 440 km² stretching 60 km north-south along the Newell Highway from Tomingley in the north, through Peak Hill and almost to Parkes in the south. The TGP contains Alkane's currently operating Tomingley Gold Operations (Tomingley), an open pit and underground operation with a 1 Mtpa processing facility that is on track to be expanded to a maximum production rate of 1.75 Mtpa by the end of FY26.

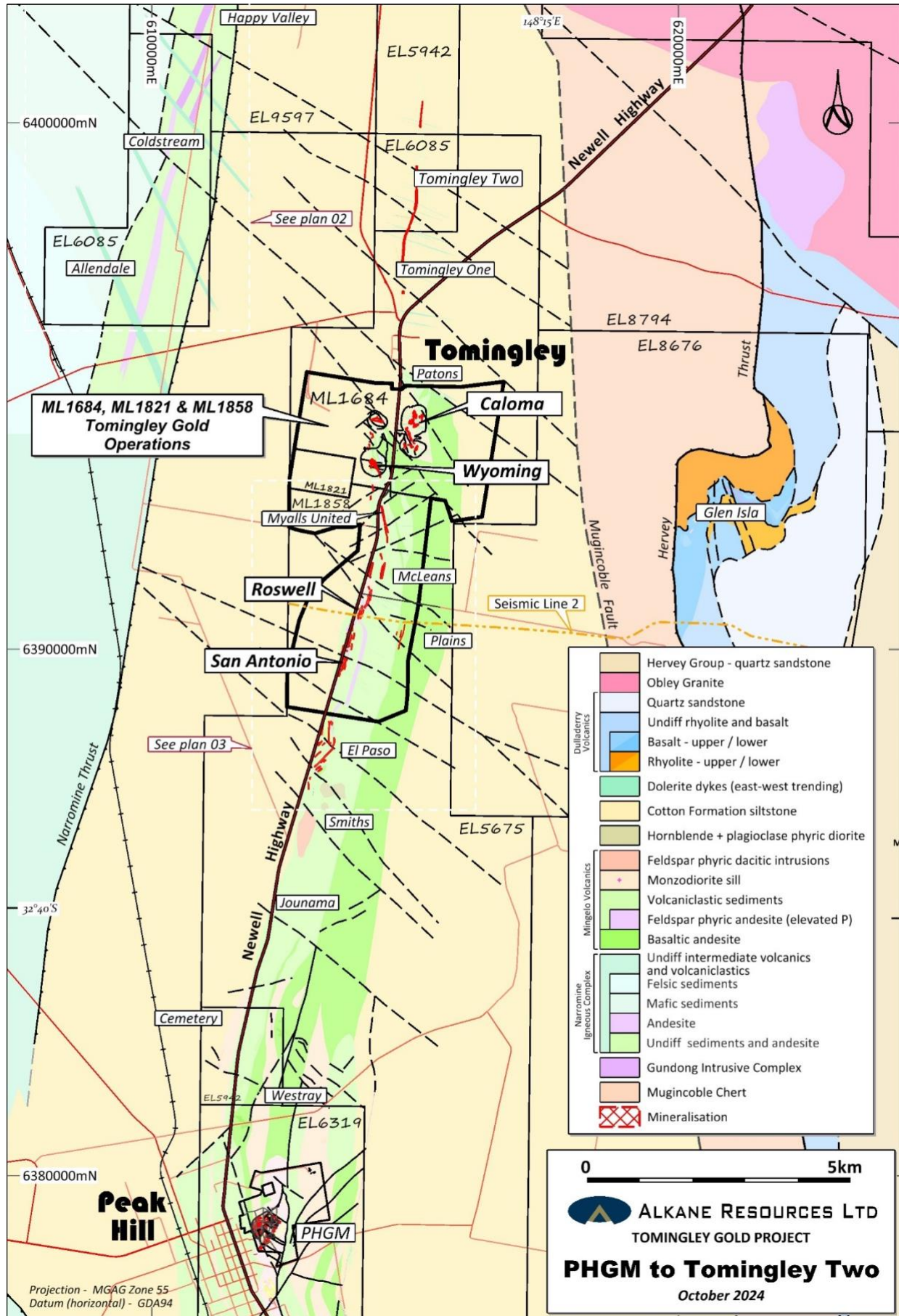
Over the past several years Alkane has conducted an extensive regional exploration program that led to the definition of Mineral Resources at the Roswell and San Antonio deposits (ASX Announcement 2 May 2022 and ASX Announcement 16 February 2021), separate to the established resources and reserves at Tomingley. Alkane has completed a 2.7 km long drive from the Wyoming One open cut to Roswell. Roswell and San Antonio now form part of Tomingley, with processing of ore mined from underground at Roswell beginning in April 2024. The focus for the exploration team has turned to other targets within the TGP, both near-mine and further out from Tomingley.

Regional exploration for the TGP over the previous 12 months of airborne geophysical surveys comprising gravity and magnetics, aircore drilling focusing on the eastern margin of the Mingelo Volcanics belt and at the Allendale Au-Cu porphyry prospects, and deeper RC/DD drilling focusing on Plains and El Paso prospects that are both located within 7 km of the Tomingley processing facility.

As part of the recent exploration drilling, assay results were received from 121 air-core (AC) drill holes for a total of 11,621 metres; 5 reverse circulation (RC) drill holes for a total of 1,550 metres; and 7 diamond core (DD) drill holes for a total of 2,372 metres of core (excluding mud rotary precollars).

The exploration undertaken:

- Targeted extensions to mineralisation associated with poorly understood volcanic host units at the El Paso prospect with 1 RC hole and 4 DD holes;
- Tested for extensions to the strike and depth of mineralisation at the Plains prospect located 1 km southeast of the Roswell deposit with 4 RC holes;
- Tested the eastern margin of the Mingelo Volcanics belt (Tomingley host rocks) for gold mineralisation with 85 AC drill holes;
- Completed 3 DD holes near the San Antonio-Roswell deposits to improve understanding of the near-mine stratigraphy and detect new prospective targets;
- Tested the covered Narromine Igneous Complex west of the Narromine Thrust for copper-gold mineralisation with 36 AC holes at Allendale;
- Surveyed the northern section of the TGP with airborne gravity gradiometry (Falcon) and high-resolution drone magnetics to delineate major structures, intrusive units and drill targets;
- Sponsored the completion of an honours research project on the potential link between the Peak Hill epithermal deposits and an underlying Cu-Au porphyry source; and
- 2D seismic data collected in 2021 was reprocessed and informed with new exploration data.





El Paso Prospect

The El Paso prospect is ~1 km to the south of the San Antonio deposit (406,000 oz Au). Mineralisation associated with thin andesitic volcanic units was discovered at this prospect in 2017. Several campaigns of drilling (when not conducting the San Antonio-Roswell resource drillout) intersected multiple zones of mineralisation. However, the complexity of the geology, the widespread alteration and difficult drilling conditions has so far impeded the effective delineation of substantial gold resources.

One RC hole and four mud rotary collared DD holes recently drilled have led to an updated interpretation of the geology and associated mineralisation. The RC hole (EPP051) intersected gold mineralisation associated with southeast-dipping andesite and basaltic andesite units in southern El Paso. Gold mineralisation was also intersected associated with a dacite volcanic unit in EPD013 that is interpreted to be the same unit that was intersected in previous drilling of EPP049 – 9m @ 2.30 g/t Au from 108m (ASX announcement 10 July 2023) and of EPD004 – 13m @ 1.79 g/t Au from 336m, incl. 1.55m @ 9.95 g/t Au from 337.05m (ASX Quarterly Activities announcement 27 April 2018). The correlation of these mineralised dacite intercepts indicates the stratigraphy in most of the El Paso area strikes northeast and dips southeast. Furthermore, the extent of the dacite along strike to the south and down-and-up dip is unconstrained by previous drilling. There is ~300m of undrilled internal strike extent that also remains untested.

Diamond core holes with mud rotary precollars were drilled in the central part of the prospect to overcome the difficult sandy alluvial overburden. Despite this, one of the diamond holes (EPD012) was not completed to target depth. Significant gold mineralisation intersected by the RC drill hole and one of the diamond core holes include intercepts of:

EPP051	3 metres grading 1.49g/t Au from 130 metres;
and	12 metres grading 1.07g/t Au from 216 metres;
incl	1 metre grading 4.36g/t Au from 216 metres;
also	1 metre grading 3.98g/t Au from 221 metres.
EPD013	12 metres grading 1.50g/t Au from 297 metres;
incl	4 metres grading 2.55g/t Au from 301 metres.

The newly interpreted dacite unit has a strike length of over 400 metres and remains open up and down dip, and along strike to the southwest. The internal strike length of the dacite between the mineralised intercepts is also currently untested, and these drilling targets are planned to be followed up.

Plains Prospect

Four RC drill holes totalling 1,258 metres tested along-strike and down-dip extensions to the known mineralisation (for example RWRC465 – 10m @ 1.59 g/t Au from 61m, including 3m @ 4.18 g/t Au from 64m – ASX announcement 17 November 2022) at the Plains prospect. The current interpretation of the gold mineralisation is of stacked northeast-striking, southeast-dipping lodes within a thick basaltic andesite unit at the Plains prospect. Minor gold mineralisation was intersected in all four holes and a new lode was intersected towards the base of RWRC482. Significant gold mineralisation from the drilling includes:

RWRC481	9 metres grading 0.76g/t Au from 165 metres;
and	4 metres grading 0.89g/t Au from 184 metres.
RWRC482	6 metres grading 1.31g/t Au from 312 metres.
RWRC483	9 metres grading 0.49g/t Au from 180 metres.



The Plains Prospect is located approximately 1 km southeast of the Roswell deposit in a structurally favourable corridor, sharing the same northwest trending structural zone that hosts the Roswell gold deposit. Further work is necessary to identify major structures within the Plains volcanics to host economic mineralisation and follow up work will be scheduled.

Tomingley Gold Extension Project (TGEP) near-mine exploration

Three diamond core holes were drilled from surface to test near-mine targets within the mining lease. Underground grade control drilling in the Roswell deposit (904,000 oz Au – ASX announcement 2 May 2022) had indicated the host andesite continued to the south-southeast and two holes (RWD062 and 063) were completed to test for a potential southern extension to the andesite. An andesite (estimated true thickness of 90 metres) was intersected in both holes about 200 metres to the east of the andesite hosting the San Antonio deposit. This andesite coincides with a 1.2 km-long linear magnetic high and is open to the south. Further exploration will focus on defining its strike extent and for gold mineralisation where it is intersected by prospective structures.

A third diamond core hole (RWD064) was drilled ~200 metres to the south along strike of the San Antonio deposit, intersected an andesite (estimated true thickness of 20 metres) that indicates the San Antonio andesite host is more extensive along strike than previously thought.

Further DD drilling is scheduled to test the down dip extension of the San Antonio resource (406,000oz Au – ASX Announcement 16 February 2021) below the planned open cut operation and establish the potential for future underground mining operations.

Regional AC drilling

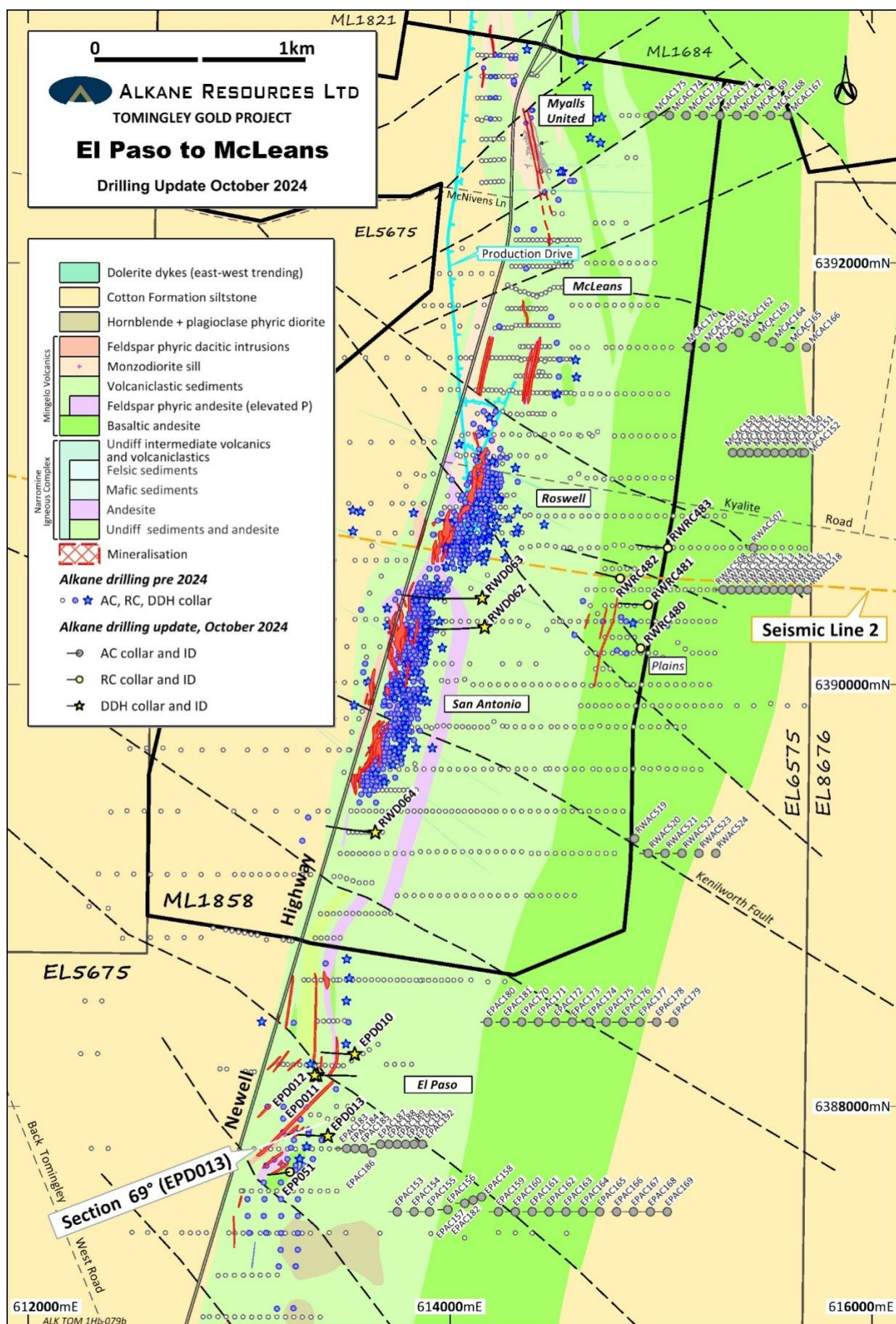
Eighty-five aircore drill holes were completed for 7,061 metres along multiple lines to test the eastern margin of the Mingelo Volcanics belt. Three potential new zones of mineralisation were intersected:

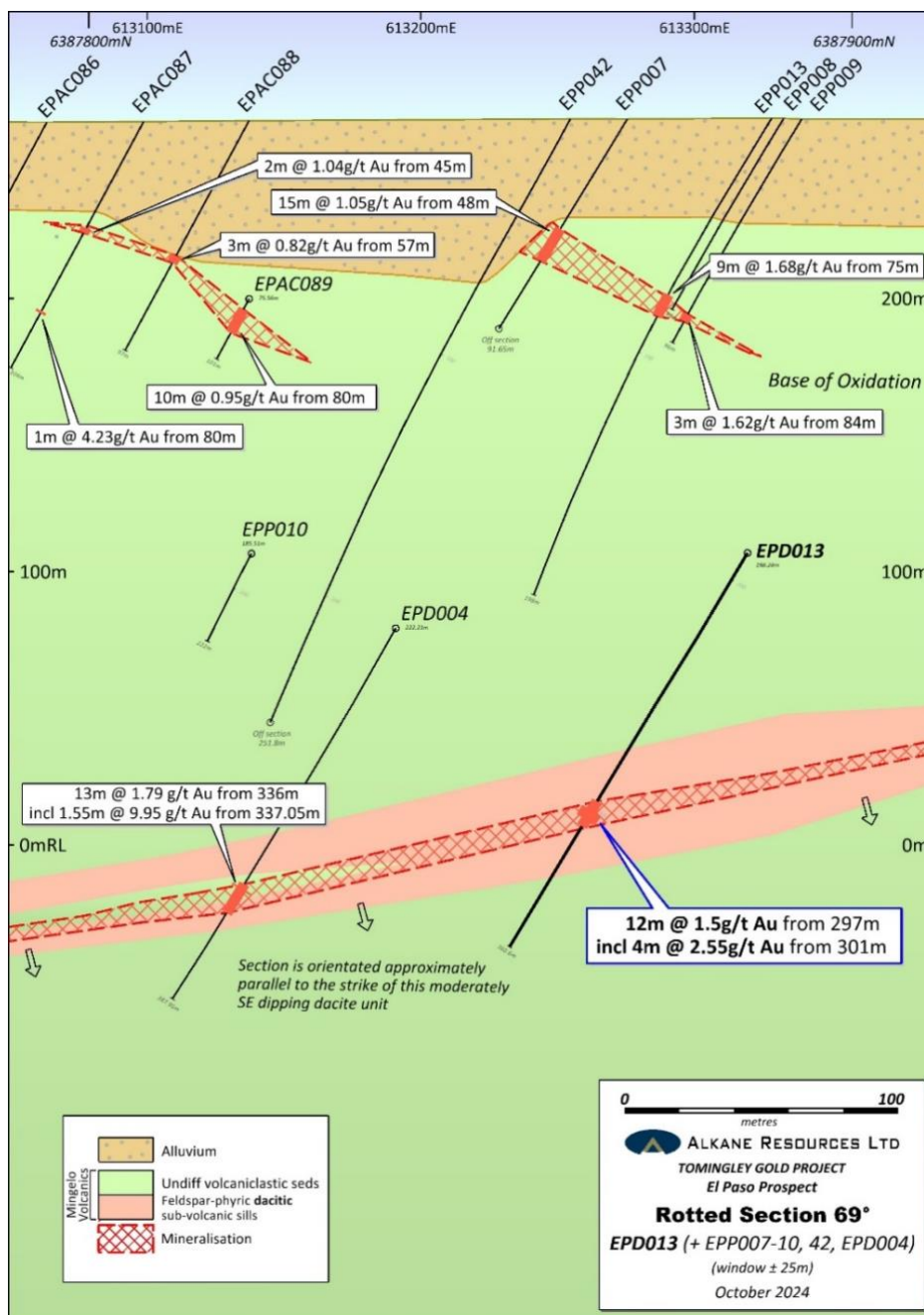
- One hole (MCAC163) about 1 km east of McLeans intersected minor gold mineralisation in weathered basaltic andesite.
- Another hole (EPAC179) about 1.5 km east of El Paso intersected minor gold mineralisation in siltstones beyond the margin of the basaltic andesite that defines the edge of the Mingelo Volcanics.
- Three adjacent holes (EPAC158, 159 and 182) about 1 km ESE of El Paso intersected gold mineralisation within a larger halo of arsenic anomalism within basaltic andesite.

Significant intercepts are as follows:

MCAC163	3 metres grading 0.32g/t Au from 33 metres.
EPAC179	3 metres grading 0.55g/t Au from 60 metres.
EPAC158 and	3 metres grading 0.43g/t Au from 96 metres; 2 metres grading 0.68g/t Au from 108 metres.
EPAC159	3 metres grading 0.7g/t Au from 78 metres.
EPAC182	3 metres grading 0.31g/t Au from 75 metres.

The intersection of coincident gold mineralisation and arsenic anomalism in three adjacent holes is encouraging and is only 1 km from the El Paso prospect and ~3 km from the existing underground development at Roswell. Further drilling will be scheduled to follow these intercepts.





Allendale/Coldstream prospect

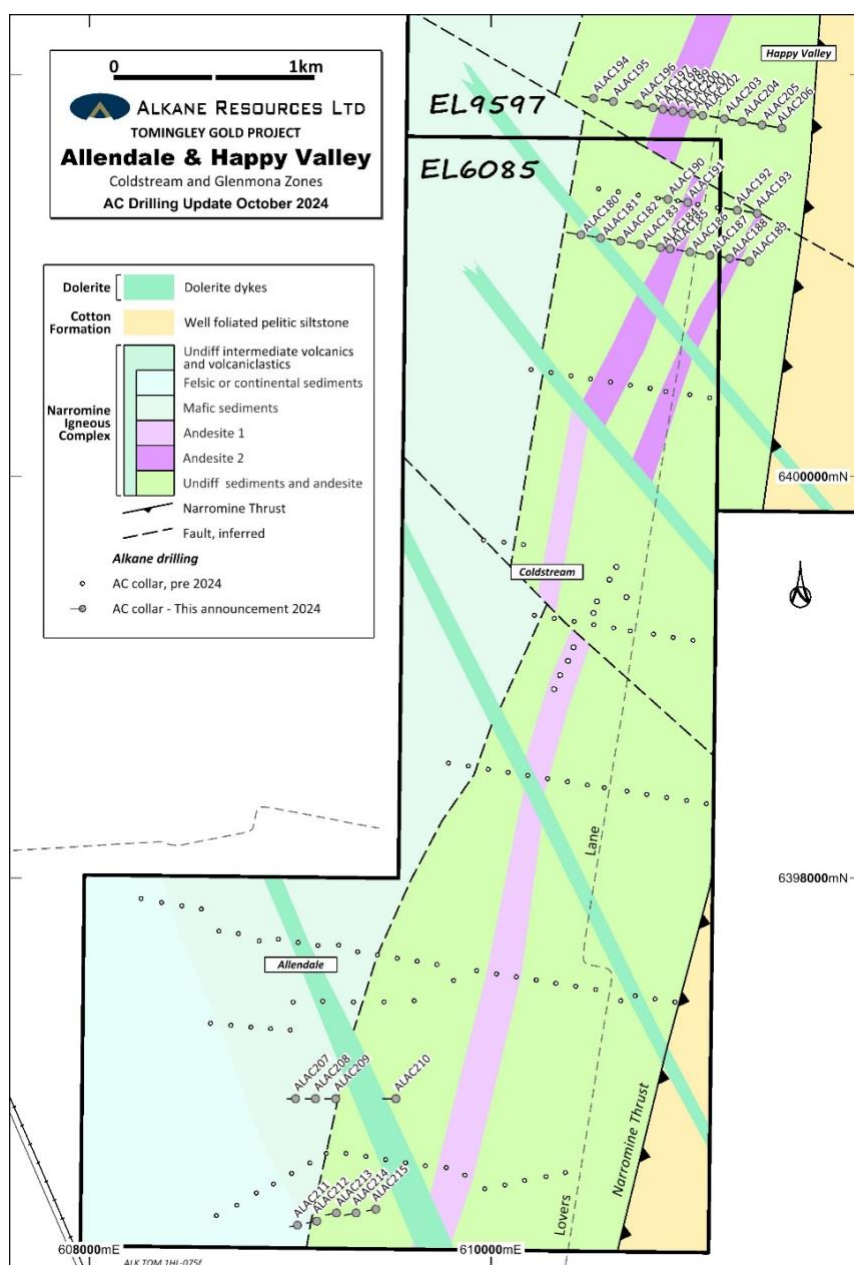
The Allendale/Coldstream prospect area lies approximately 5 km northwest of Tomingley on the western side of a regional east-dipping fault (the Narromine Thrust). This regional thrust separates the largely undeformed andesitic volcanics and intrusives of the Narromine Igneous Complex, that hosts the Corvette-Kingswood Cu-Au deposit (contained metal of 0.29Mt Cu, 0.24Moz Au – Magmatic Resources Ltd ASX announcement dated 11 July 2023) from the highly deformed and faulted volcanics and volcaniclastics to the east that are host to the orogenic gold mineralisation at Tomingley. The entire prospect area is covered by 30 - 80 metres of alluvial sands and clays and all previous exploration was limited to air-core drilling and three diamond drill hole tails.

Thirty-six air-core drill holes for a total of 4,560 metres were drilled along five traverses at ~100 metre collar spacings to follow up on encouraging gold and copper intercepts from the previous year's drilling (ASX Announcement 10 July 2023). The drilling was generally angled west along the traverses and drilled



to refusal at fresh bedrock. Bottom of hole lithogeochemistry assaying was conducted to map the Ordovician basement and the weathered bedrock beneath the cover.

Infilling drilling around the significant gold intercept (ALAC176 – 13m @ 0.99 g/t Au from 127m to EOH; ASX announcement 10 July 2023) from 2023 failed to intersect further mineralisation. Minor copper anomalism ($>0.05\%$ Cu) showed a subtle trend of increasing concentration towards the north, though it may be the result of supergene weathering of mafic volcanics in the bedrock. Results are detailed in Table 3.



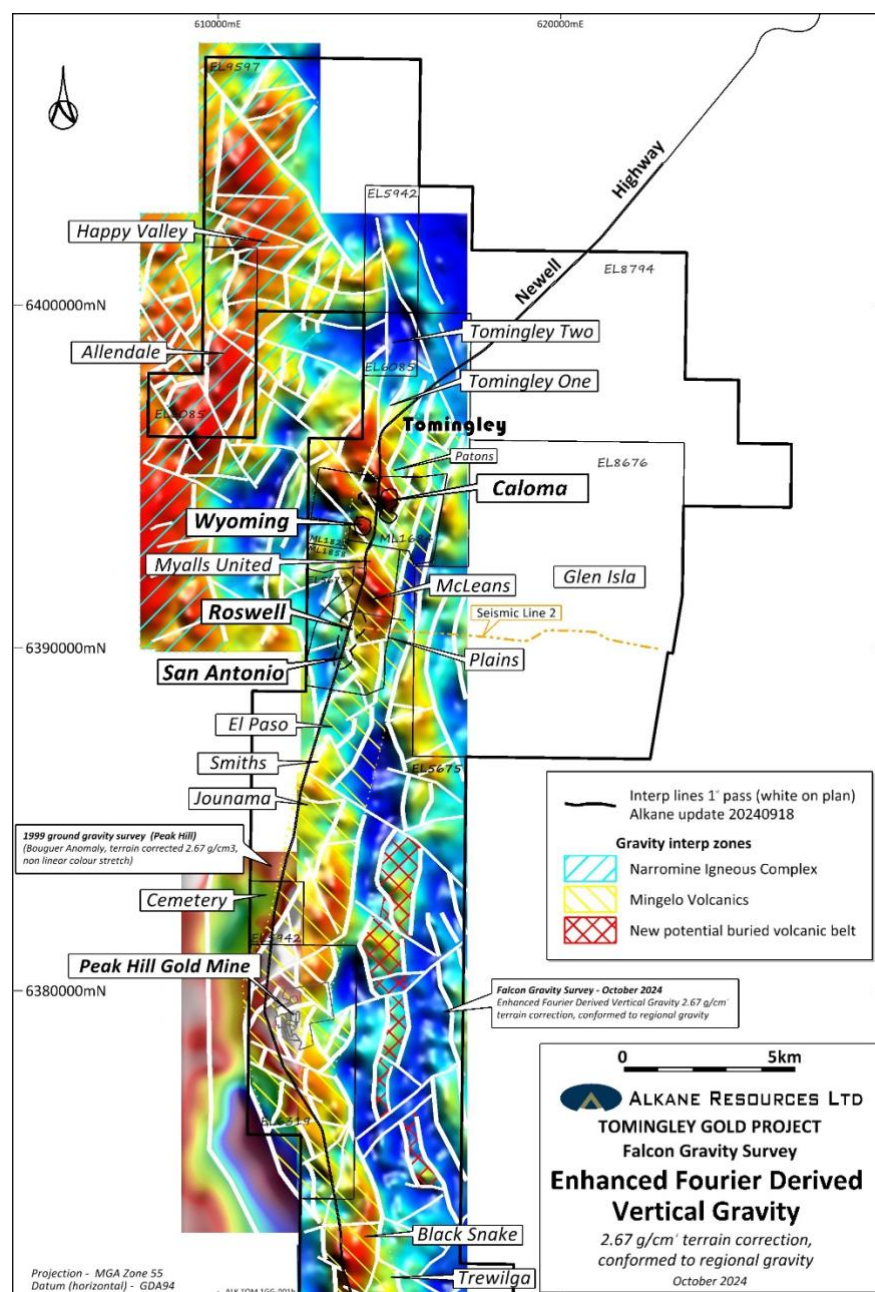


Airborne gravity gradiometry survey

An airborne gravity gradiometry (AGG) survey using the FALCON system was flown over the northern TGP in late 2023. The objective of the survey was to identify deeper structures and trends that could be associated with orogenic gold mineralisation where they intersect the Mingelo Volcanics.

The survey was able to delineate the belt of Mingelo Volcanics as a subtle N-S linear gravity high. Numerous potential northwest and northeast trending structures are also apparent in the survey imagery as breaks and boundaries of individual domains of higher or lower gravity response. The effective 'imaging depth' of the gravity survey is ~500m so these potential structures may be different from those mapped in airborne magnetic data. The relatively low gravity response in the El Paso area is interpreted to be due to deeper transported cover in that area suppressing the gravity response of the bedrock. A narrow N-S linear gravity high to the east of Peak Hill may be a potential new volcanic belt.

The structural framework interpreted from this survey will be used to guide ongoing exploration to target potentially gold-bearing structures in the Mingelo Volcanics. Further work is planned to confirm the existence of the potential new volcanic belt to the east of Peak Hill.





The north-south trending '**Tomingley Structure**' to the north of the existing Tomingley operations was originally identified in airborne magnetic data and regional aircore drilling as a coincident gold-arsenic anomaly. This structure appears to be recognisable in the airborne gravity as well, indicating it is a significant fault. Extensive gold mineralisation at the **Tomingley One** and **Tomingley Two** prospects occur along this structure.

Tomingley Two

Significant gold mineralisation (e.g. TORC005 – 11m @ 1.7 g/t Au from 158m including 4m @ 3.87 g/t Au from 159m; ASX announcement 16 September 2021) strikes north-south over 800 metres, with a moderate east dip in the form of stacked, en-echelon quartz veins, with elevated arsenic levels, appears to be controlled by the north-south trending '**Tomingley Structure**'. Mineralisation is associated with strong veining and intense sericite alteration with sulphide development in meta-sedimentary host rocks and remains open along strike and down dip.

The prospect lies under 100 metres of transported overburden and not been considered suitable for open pit mining however the development of the underground operation at Tomingley could provide the infrastructure for underground operations.

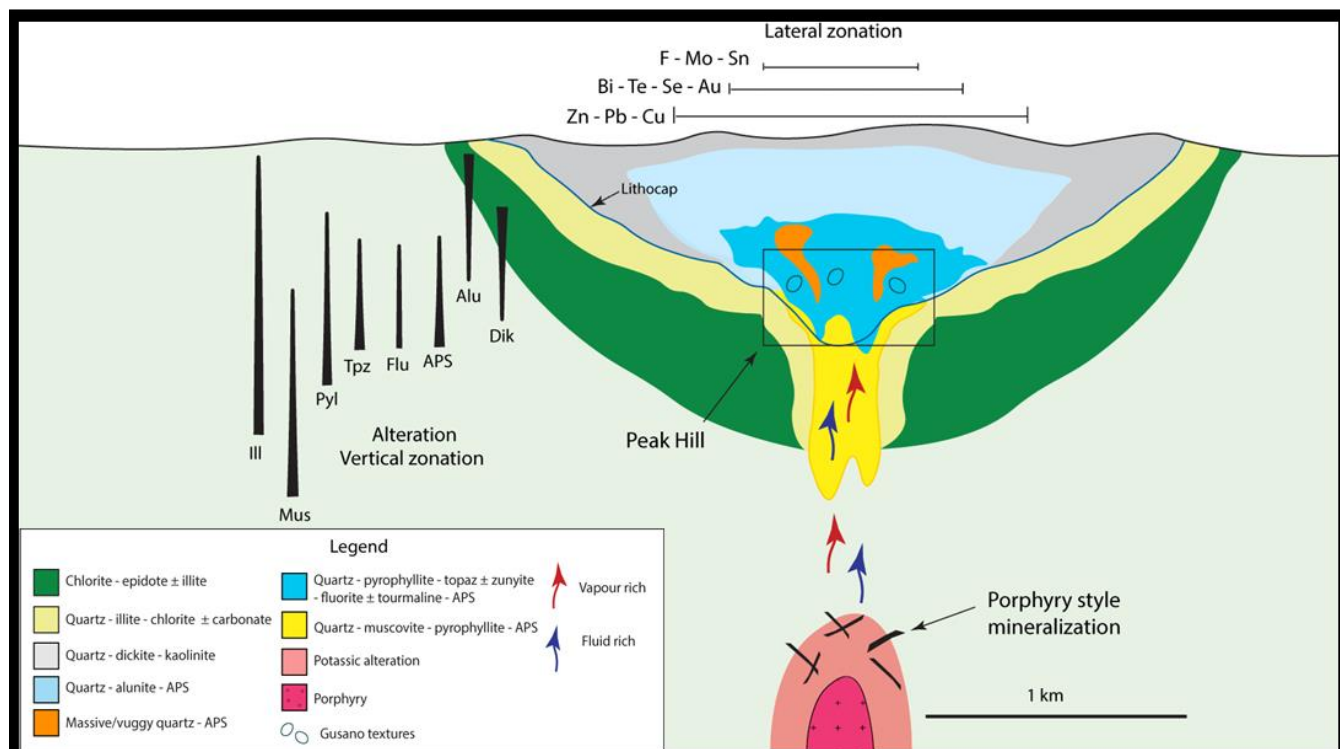
Peak Hill Research Project

The Peak Hill gold-copper deposit is a high sulphidation epithermal deposit with its oxidised cap mined by Alkane from 1998 to 2005. Peak Hill has a JORC (2012) Inferred Resource of 1.02Mt grading 3.29g/t Au and 0.15% Cu (ASX announcement 18 October 2018). Gold and copper metal prices have significantly increased since this resource was estimated and the project has justified further examination.

An honours research project was completed with a student from the University of Tasmania's Centre for Ore Deposit and Earth Sciences (CODES) on the high sulphidation epithermal system at Peak Hill. The objectives of the project were to determine if there was evidence of a porphyry copper-gold deposit that contributed to the formation of the epithermal mineralisation, and where the porphyry source might be located underneath Peak Hill. The project successfully demonstrated the presence of high temperature advanced argillic minerals (e.g. topaz, zunyite, fluorite) and textures that indicate the presence of at least one upflow (or feeder) zone that may connect to a porphyry system below. Trends of increasing concentrations of high temperature, magmatically-derived pathfinder elements (e.g. fluorine, molybdenum, tin) also vector towards the upflow zone(s). Finally, the base of three of the drill holes sampled for the honours project were recognised to contain muscovite as part of the alteration assemblage, which indicates the hydrothermal system is beginning to transition to high temperature phyllic alteration within the range of existing drilling at Peak Hill. Phyllic alteration typically sits above the potassic alteration that is usually associated with porphyry copper-gold deposits, suggesting the Peak Hill deposit occupies the roots of a deeply eroded epithermal system. These multiple lines of evidence indicate there is strong potential for a porphyry system in proximity beneath the Peak Hill deposit. Further exploration will seek to refine the definition of the upflow zone(s) from the surface and existing drilling before moving to drilling to directly test for porphyry mineralisation that may be associated with these upflow zone(s) at depth.



Peak Hill alteration model with hydrothermal fluid outflow from an interpreted porphyry source.



Schematic alteration/exploration model of Peak Hill generated by the honours project. The small box in the middle represents the current exposed level of the Peak Hill deposit within the porphyry-epithermal environment. The expected vertical mineral and lateral element zonation around upflow zones according to typical porphyry-epithermal models is shown on the left and the top, respectively. Abbreviations: Ill-illite, Mus-muscovite, Pyl-pyrophyllite, Tpz-topaz, Flu-fluorite, APS-APS minerals, Alu-alunite, Dik-dickite, F-fluorine, Mo-molybdenum, Sn-tin, Bi-bismuth, Te-tellurium, Se-selenium, Au-gold, Zn-zinc, Pb-lead, Cu-copper.

Reference: Geology, Alteration, Mineralisation and Geochemistry of the Peak Hill deposit, NSW – Genetic and Exploration Implications. Unpublished Honours Thesis M P Young, CODES, University of Tasmania.



2D seismic data reprocessing

Seismic data collected in 2021 along four lines was reprocessed and better informed with recently acquired data comprising detailed magnetics interpretation, drilling, and new geological interpretations. The reprocessing and interpretation supported the previous interpretation of a primary east-dipping thrust fault (Narromine Thrust – a ‘Parkes Thrust’ analogue) and a secondary splay thrust bounding a package of folded volcanics and sediments. These major faults are conduits for mesothermal gold fluids with further pathways provided by tertiary conjugate steep fault structures.

Of interest is a significant flexure identified in the thrust splay only 800 metres below surface mapped in three of the seismic lines, located 2 km southwest of Tomingley and directly below the Roswell deposit.

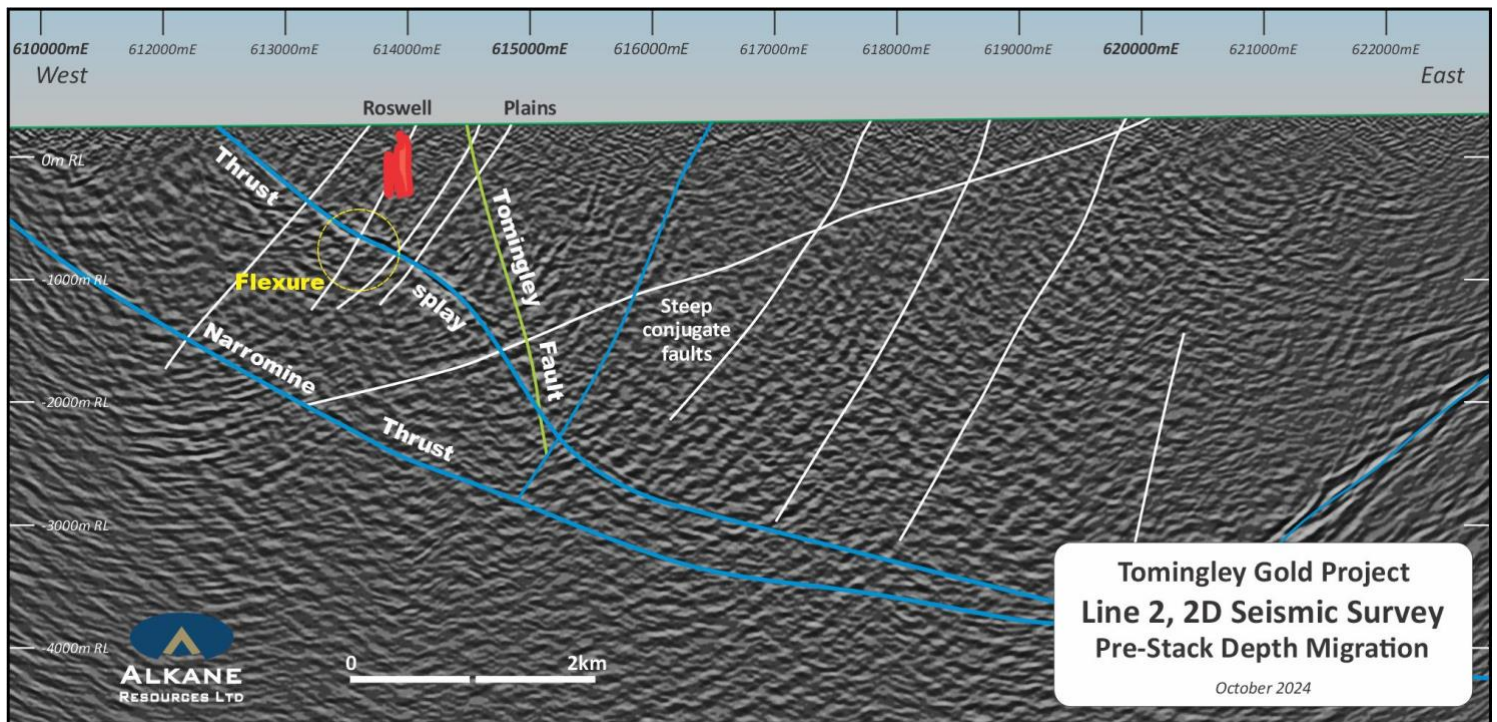




Table 1 - Tomingley Gold Project Significant Gold Results – September 2024 (>0.2g/t Au)											
Hole ID	Easting (MGA)	Northing (MGA)	RL (m)	Dip	Azimuth (Grid)	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Prospect
EPD010	613548	6388247	266	-60	270	311.3	No significant results				El Paso
EPD011	613371	6388147	266	-60	90	333.9	110	112	2	0.33	
and							123	124	1	0.3	
EPD012	613358	6388147	266	-60	90	85.1**	77	78	1	0.71	
EPD013	613421	6387858	266	-60	270	360.6	272	273	1	0.29	
and							297	309	12	1.5	
incl							301	305	4	2.55	
and							316	317	1	0.24	
EPP051	613241	6387689	266	-70	261	292	36	38	2	0.4	
and							45	72	27	0.33	
incl							63	66	3	0.78	
and							130	133	3	1.49	
incl							131	132	1	3.17	
and							216	228	12	1.07	
incl							216	217	1	4.36	
also							221	222	1	3.98	
and							239	243	4	0.28	
RWD062	614164	6390272	268	-63	268	594.55	Andesite but no significant results				SAR Extension
RWD063	614153	6390410	268	-61	269	694.4	180	182	2	0.24	
and							245	246	1	1.86	
RWD064	613645	6389299	266	-60	270	399.55	Andesite but no significant results				Plains
RWRC480	614904	6390173	273	-61	321	304	27	30	3	0.32	
and							36	42	6	0.23	
RWRC481	614939	6390378	272	-61	272	310	77	85	8	0.23	
and							165	174	9	0.76	
and							184	188	4	0.89	
incl							185	186	1	1.92	
RWRC482	614807	6390504	271	-66	283	340	114	116	2	0.2	
and							263	264	1	0.28	
and							266	267	1	0.24	
and							297	303	6	0.33	
and							312	318	6	1.31	
and							330	333	3	0.33	
RWRC483	615033	6390648	272	-59	270	304	176	189	13	0.4	
and							195	196	1	0.22	

* hole finished in mineralisation. ** hole abandoned early. True widths are approximately 70% of intercept width.



Table 2 - Tomingley Gold Project Significant Aircore Gold Results – September 2024 (>0.2g/t Au)

Hole ID	Easting (MGA)	Northing (MGA)	RL (m)	Dip	Azimuth (Grid)	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Prospect
EPAC153	613750	6387500	270	-60	270	84	72	75	3	0.2	Regional
EPAC158	614150	6387570	270	-60	270	110	93	99	6	0.28	
<i>and</i>							108	110	2*	0.68	
EPAC159	614230	6387500	270	-60	270	94	78	81	3	0.7	
EPAC178	614980	6388400	270	-60	270	90	24	27	3	0.23	
EPAC179	615060	6388400	270	-60	270	81	60	63	3	0.55	
EPAC182	614110	6387555	270	-60	270	96	75	78	3	0.31	
EPAC190	613790	6387820	267	-60	270	87	75	78	3	0.3	
MCAC163	615450	6391650	270	-60	270	70	33	36	3	0.32	
RWAC513	615495	6390450	270	-60	270	67	54	57	3	0.45	

* hole finished in mineralisation.

Table 3 - Allendale (TGP) Significant Gold Copper Results – September 2024 (>0.1g/t Au and/or >0.05% Cu)

Hole ID	Easting (MGA)	Northing (MGA)	RL (m)	Dip	Azi (Grid)	Total Depth	Interval From (m)	Interval To (m)	Intercept (m)	Au (g/t)	Cu (%)	Prospect
ALAC180	610447	6401203	270	-60	280	150	93	96	3	0.17	-	Allendale
ALAC186	610990	6401117	270	-60	280	133	99	114	15	0.01	0.05	
ALAC196	610731	6401852	270	-60	280	126	84	90	6	0.01	0.07	
ALAC198	610855	6401828	270	-60	280	107	72	78	6	0.01	0.06	
ALAC200	610954	6401813	270	-60	280	118*	63	87	24	0.01	0.06	
<i>and</i>							117	118	1*	0.01	0.08	
ALAC201	611003	6401805	270	-60	280	134	81	99	18	0.01	0.07	
ALAC202	611053	6401797	270	-60	280	143	117	135	18	0.01	0.05	
ALAC207	609025	6396900	270	-60	270	88*	54	88	34*	0.02	0.05	
ALAC208	609125	6396900	270	-60	270	103	54	81	27	0.01	0.05	
ALAC210	609525	6396900	270	-60	269	136	102	105	3	0.05	0.05	
ALAC211	609035	6396270	270	-60	259	82	72	75	3	0.21	0.02	
ALAC212	609131	6396290	270	-60	259	108	60	78	18	-	0.05	

* hole finished in mineralisation.



Competent Person

Unless otherwise advised above or in the Announcements referenced, the information in this report that relates to exploration results, mineral resources and ore reserves is based on information compiled by Mr David Meates, MAIG, (Exploration Manager NSW) 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 Meates consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Previous Information

The information in this report that relates to exploration results and Mineral Resource estimates is extracted from the Company's ASX announcements noted in the text of the announcement and are available to view on the Company's website. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original announcements and, in the case of reporting of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The form and context in which the Competent Person's findings are presented have not been materially altered.

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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.

This document has been authorised for release to the market by Nic Earner, Managing Director.

ABOUT ALKANE - www.alkane.com.au - ASX: ALK

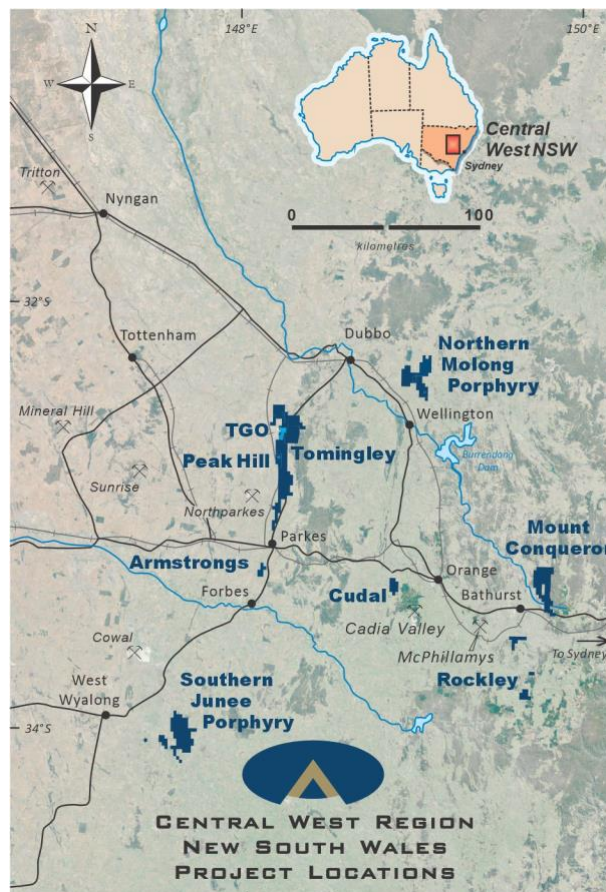
Alkane Resources intends to grow to become one of Australia's multi-mine gold and copper producers.

The Company's current gold production is from the Tomingley Gold Operations in Central West New South Wales, which has been operating since 2014 and has operating plans extending beyond 2030.

Alkane has an enviable exploration track record and controls several highly prospective gold and copper tenements. Its most advanced exploration projects are in the tenement area between Tomingley and Peak Hill, which has the potential to provide additional ore for Tomingley's operations.

Alkane's exploration success includes the landmark porphyry gold-copper mineralisation discovery at Boda in 2019. With exploration drilling ongoing and an economic development pathway shown in a scoping study, Alkane is confident of further consolidating Central West New South Wales' reputation as a significant gold and copper production region.

Alkane's gold interests extend throughout Australia, with strategic investments in other gold exploration and aspiring mining companies.





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

JORC Code, 2012 Edition – Table 1 TOMINGLEY GOLD PROJECT – Regional Exploration October 2024

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.	- Diamond core drilling (DD) was undertaken by Ophir Drilling Pty Ltd - DD sample intervals were defined by geologist during logging to honour geological boundaries, cut in half by diamond saw, with half core sent to ALS Laboratories - RC drilling was undertaken by Strike Drilling Pty Ltd - Air-core (AC) drilling was undertaken by Drillit Pty Ltd - RC and AC samples are collected at one metre intervals via a cyclone on the rig. The cyclone is cleaned regularly to minimise any contamination
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Sampling and QAQC procedures are carried out using Alkane protocols as per industry best practice.
	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.	- Core was laid out in suitably labelled core trays. A core marker (core block) was placed at the end of each drilled run (nominally 3m) 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. Half core is sampled with a Corewise automatic core saw. - RC and AC Drilling – the total sample (~20-30kg) is delivered via cyclone into a large plastic bag which is retained for future use if required. A sub-sample of approximately 1kg is spear sampled from each plastic bag and composited to make a 3 metres sample interval. If strong mineralisation is observed by the site geologist this is sampled as a final 1m interval instead. The 1m intervals forming composite samples assaying ≥ 0.20 g/t Au are resplit using a cone splitter on the RC rig or a riffle splitter for AC sample into a separate calico at the time of drilling and re-submitted to the laboratory for re-assay. - Gold was determined by fire assay fusion of a 50g charge with an AAS analytical finish. - A multi-element suite was determined using either aqua regia or a multi-acid digest with a ICP Atomic Emission Spectrometry or ICP Mass Spectrometry analytical finish.



Criteria	JORC Code explanation	Commentary
<i>Drilling techniques</i>	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).	- Reverse circulation (RC) drilling using 110mm rods 144mm face sampling hammer. - Triple tube diamond drilling with PQ3/HQ3 wireline bit producing 83mm diameter (PQ3) and 61.1mm diameter (HQ3) sized orientated core (using a Reflex orientation tool). - Air-core (AC) drilling using 89mm rods and bit to refusal.
<i>Drill sample recovery</i>	Method of recording and assessing core and chip sample recoveries and results assessed.	- DD - core loss was identified by drillers and calculated by geologists when logging. Generally ≥99% was recovered. - RC and AC sample quality is assessed by the sampler by visual approximation of sample recovery and if the sample is dry, damp or wet.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	- Sample quality is qualitatively logged. - A high capacity RC rig was used to enable dry samples collected. Drill cyclone is cleaned between rod changes and after each hole to minimise cross-hole contamination. - A high capacity AC rig was used to maximise penetration through the clays to refusal on fresh bedrock. Drill cyclone was cleaned after each hole to minimise cross-hole contamination. - Triple tube coring is used at all times to maximise core recovery for diamond drilling.
	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.
<i>Logging</i>	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.	- Each one metre interval is 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 detailed geotechnical log on the diamond core is also undertaken collecting parameters such as core recovery, RQD, fracture count, and fracture type and orientation.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography	- Mostly logging was qualitative with visual estimates of the various characteristics. In addition, magnetic susceptibility data (quantitative) was collected as an aid for logging. - All drill holes were geologically logged into Geobank Mobile, followed by validation before importing into Alkane's central Geobank database. - All drill holes were logged by qualified and experienced geologists.
	The total length and percentage of the relevant intersections logged	All drill holes were logged in full.



Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	Core sawn with half core samples submitted for analysis
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	- Each one metre interval is spear sampled with 3m composite samples collected in a calico sample bag and forwarded to the laboratory. Where strong mineralisation is observed by the site geologist, instead of compositing, this is individually sampled from the cone splitter on the RC rig as a 1 metre interval into a calico bag and forwarded to the laboratory. - The 1m intervals forming composite samples assaying ≥ 0.20 g/t Au are re-split using a cone splitter on the RC rig during the time of drilling or re-split using a riffle splitter for AC composites and submitted to the laboratory for assay. - Laboratory Preparation – the entire sample (~3kg) is dried and pulverised in an LM5 (or equivalent) to $\geq 85\%$ passing $75\mu\text{m}$. Bulk rejects for all samples are discarded. A pulp sample ($\pm 100\text{g}$) is stored for future reference.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were delivered by Alkane personnel to ALS Minerals Laboratory, Orange NSW. Crushed with $70\% < 2\text{mm}$ (ALS code CRU-31), split by riffle splitter (ALS code SPL-21), and pulverised 1000g to $85\% < 75\mu\text{m}$ (ALS code PUL-32). Crushers and pulverisers are washed with QAQC tests undertaken (ALS codes CRU-QC, PUL-QC).
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples	Internal QAQC system in place to determine accuracy and precision of assays.
	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	- Non-biased core cutting using an orientation line marked on the core. - Duplicate RC and AC samples are collected for both composite intervals and re-split intervals.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample are of appropriate size.
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.	- All samples were analysed by ALS Minerals - Gold is determined using a 50g charge fused at approximately 1100°C with alkaline fluxes, including lead oxide. The resultant prill is dissolved in aqua regia with gold determined by flame AAS. - Other geochemical elements, DD core and bottom of hole AC samples are digested by near-total mixed acid digest with each element determined by ICP Atomic Emission Spectrometry or ICP Mass Spectrometry. RC and AC samples are digested by aqua regia with a ICP Atomic Emission Spectrometry for As, Cu, Fe, Ni, P, Pb only.



Criteria	JORC Code explanation	Commentary
	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.	No geophysical tools were used to determine any element concentrations
	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) are inserted at 1 in 40 samples. CRM's are not identifiable to the laboratory. - Field duplicate samples are inserted at 1 in 40 samples (alternate to CRM's). - Laboratory QAQC sampling includes insertion of CRM samples, internal duplicates and screen tests. This data is reported for each sample submission. - Failed standards result in re-assaying of portions of the affected sample batches.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	Drill data is compiled and reviewed by senior staff. External consultants do not routinely verify exploration data until resource estimation procedures are deemed necessary.
	The use of twinned holes.	No twinned holes have been drilled.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	- All drill hole logging and sampling data is entered directly into Geobank Mobile in the field for validation, transfer and storage into Geobank database with verification protocols in place. - All primary assay data is received from the laboratory as electronic data files which are imported into sampling database with verification procedures in place. QAQC analysis is undertaken for each laboratory report. - Data is also verified on import into mining related software.
	Discuss any adjustment to assay data.	No assay data was adjusted. In the case of assay checks the original assay is utilised as there was no statistical variability.
Location of data points	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 estimation.	Drillholes are laid out using hand-held GPS (accuracy $\pm 2\text{m}$) then all RC and DD collars are DGPS surveyed accurately ($\pm 0.1\text{m}$) by trained surveyors on completion.
	Specification of the grid system used.	GDA94, MGA (Zone 55)
	Quality and adequacy of topographic control.	DD and RC drillhole collars DGPS surveyed accurately ($\pm 0.1\text{m}$) by trained surveyors on completion. A site based digital terrain model was developed from accurate ($\pm 0.1\text{m}$) survey control by licenced surveyors.



Criteria	JORC Code explanation	Commentary
Data spacing and distribution	Data spacing for reporting of Exploration Results..	At this exploration stage, data spacing is variable with the focus on identifying new zones of mineralisation.
	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	All the results are early stage, reconnaissance drilling, and as such are spaced to test strike and dip extents of any significant mineralisation.
	Whether sample compositing has been applied	- RC – samples with no visible mineralisation or alteration are composited to 3m with 1m resamples assayed if the composite returned a gold value of >0.2g/t gold. One metre samples override 3m composites in the database. - DD – core is sampled to geology with sample sizes ranging from 0.3m to 1.3m.
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.	Drilling suggests a broadly sub vertical geometry at most prospects and moderately SE at Plains and El Paso.
	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	Estimated true intervals at this early stage of drilling are possibly ~60% of downhole lengths.
Sample security	The measures taken to ensure sample security.	- All samples are bagged into tied calico bags, before being grouped into polyweave bags and transported ~2hr to ALS Minerals Laboratory in Orange by Alkane personnel. All sample submissions are documented via ALS tracking system with results reported via email. - Sample pulps are returned to site and stored for an appropriate length of time (minimum 3 years). - The Company has in place protocols to ensure data security.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews have been conducted at this stage



Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	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.	All six licences (EL5675, EL5942, EL6085, EL8676, EL8794 and EL9597) in the Tomingley Gold Project are owned 100% by Alkane.
	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.	All exploration licences are in good standing. EL5675 expires on 17 January 2029. EL5942 expires on 3 May 2030. EL6085 expires on 20 May 2030. EL8676 expires on 27 November 2029. EL8794 expires on 20 September 2024 (under renewal). EL9597 expires on 22 August 2029.
<i>Exploration done by other parties</i>	Acknowledgment and appraisal of exploration by other parties.	- Only minor work has been completed by previous companies within EL5675 covered by this announcement with many holes that did not penetrate the cover sequence. - Work completed within EL6085 and EL9597 at the Allendale-Coldstream prospect areas can be summarised as: Climax (in JV with Newcrest, Transit, MPI Gold) (1989-2003) – Tenement-wide heli-magnetics, MMI soils (no anomalism as deep cover was prohibitive); 70x air-core drill holes for 7,458m over magnetic targets intersecting broad zones of Au-Cu anomalism. Follow up 3x diamond core tails off air-core pre-collars for 764m with a petrology study.
<i>Geology</i>	Deposit type, geological setting and style of mineralisation.	- Mineralisation at Tomingley is associated with quartz veining and alteration focused within sub-volcanic andesite sills and adjacent volcanoclastic sediments. The deposits appear to have formed as the result of a competency contrast between the sub-volcanic sills and the surrounding volcanoclastic sediments, with the sills showing brittle fracture and the sediments ductile deformation and have many similarities to well documented orogenic - lode-style gold deposits. - Geological nature of the Tomingley Deposits is well documented elsewhere. - Geological nature of Peak Hill is well documented elsewhere. - The Allendale/Coldstream prospect area lies approximately 5km northwest of Tomingley on the western side of a regional east-dipping Narramine Thrust. This regional fault separates the largely undeformed andesitic volcanics and intrusives of the Narramine Igneous Complex, that is host to the Corvette-Kingswood Cu-Au deposit (contained metal of 0.29Mt Cu, 0.24Moz Au – Magmatic Resources Ltd ASX announcement dated 11 July 2023) that is the subject of the Magmatic-Fortescue joint venture, from the highly deformed and faulted volcanics and volcanoclastics to the east that are host to the orogenic gold mineralisation at Tomingley. The entire prospect area is covered by 30 -



Criteria	JORC Code explanation	Commentary
		80m of alluvial quartz-rich sands and clays and all previous exploration was limited to air-core drilling and three diamond drill hole tails.
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: - easting and northing of the drill hole collar - elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar - dip and azimuth of the hole - down hole length and interception depth - hole length.	See body of announcement.
	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.	- All RC and DD drill holes have been reported in this announcement. - Only AC drill holes with significant assays of $\geq 0.2\text{g/t Au}$ have been reported for Tomingley and assays of $>0.1\text{g/t Au}$ and/or $>0.05\% \text{ Cu}$ for Allendale. Impractical to list all aircore holes completed.
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.	Exploration results reported for uncut gold grades, grades 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.	- Reported intercepts ($>0.2\text{g/t Au}$) are calculated using a broad lower cut of 0.2g/t Au although grades lower than this may be present internally (internal dilution). - No top cut has been used. - Short intervals of high grades that have a material impact on overall intersection are reported as separate (included) intervals.
	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. - If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported - 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').	The mineralisation is structurally complex and the majority of drilling is reconnaissance in nature. Down hole lengths are reported – true widths estimated to be 70% of the down hole lengths at El Paso and at Plains prospects at this early stage exploration stage.
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.	Plans showing geology with drill collars are included in the body of the announcement. An appropriate sectional view for the significant results at El Paso prospect is included.



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.	Comprehensive reporting has been undertaken with all DD and RC holes listed in the included table.
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.	- An airborne gravity gradiometry (AGG) survey using the FALCON system was flown over the northern TGP. The survey was flown using 300m spaced north-south traverses at an average flying height of 92m. The effective 'imaging depth' of the gravity survey is ~500m so these potential structures may be different from those mapped in airborne magnetic data. - An honours research project completed by a student from the University of Tasmania's Centre for Ore Deposit and Earth Sciences (CODES) on the high sulphidation epithermal gold deposits at Peak Hill. The project demonstrated the presence of high temperature advanced argillic minerals (topaz, zunyite, fluorite) and gusano textures that indicate the presence of at least one upflow zone that may connect to a porphyry system below. Trends of increasing concentrations of high temperature, magmatically-derived pathfinder elements (fluorine, molybdenum, tin) also vector towards the upflow zone(s). Finally, the base of three of the drill holes sampled for the honours project were recognised to contain muscovite as part of the alteration assemblage, which indicates the hydrothermal system is beginning to transition to high temperature phyllic alteration that typically sits above the potassic alteration that is usually associated with porphyry copper-gold deposits, suggesting the Peak Hill deposits occupy the roots of a deeply eroded epithermal system. - Reprocessing and reinterpretation of the 2D seismic survey was completed by Southern Geoscience Consultants (SGC). The original survey parameters are presented in ASX announcement dated 17 November 2022.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	See body of announcement. It is recommended that further drilling is undertaken at these prospects to continue to define strike and dip of any significant mineralisation.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	See figures included in the announcement.