

Alkane Resources

007 strikes it rich

Exploration and
quarterly update

Metals & mining

23 April 2020

Price **A\$0.685**

Market cap **A\$397m**

A\$1.5776/US\$

Net cash (A\$m) at 31 December 2019 78.4

Shares in issue 580.0m

Free float 78%

Code ALK

Primary exchange ASX

Secondary exchange OTC QX

Share price performance



% 1m 3m 12m

Abs 23.4 0.7 191.8

Rel (local) 13.6 38.4 251.2

52-week high/low A\$1.04 A\$0.20

Business description

Alkane Resources is an Australian production and development company. It previously produced 70,000oz of gold per year from the open-pit operations at its Tomingley gold mine, but is now transitioning to underground operations and expects to produce around 32,000oz of gold pa.

Next events

Boda drilling results May 2020

Dubbo demerger shareholder meeting Q2 CY20

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[Edison profile page](#)

**Alkane Resources is a
research client of Edison
Investment Research Limited**

In recent weeks Alkane has announced drilling results from its Boda prospect in the Northern Molong Porphyry Project, a maiden (inferred) resource at its Roswell and San Antonio prospects south of Tomingley and its interim results. In addition, Export Finance Australia (Australia's export credit agency) has confirmed its interest in participating in the financing of Alkane's Dubbo rare earth project in Central West New South Wales. Each has the ability to add to our valuation of Alkane, although by far the largest in terms of magnitude are the drilling results from Boda.

Year end	Revenue (A\$m)	PBT* (A\$m)	EPS* (A\$)	DPS (A\$)	P/E (x)	Yield (%)
06/18	128.8	31.5	0.05	0.00	14.1	N/A
06/19	92.5	26.2	0.05	0.00	14.5	N/A
06/20e	67.3	21.3	0.03	0.00	24.9	N/A
06/21e	76.9	27.5	0.04	0.00	19.3	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles and exceptional items.

Boda drilling results

Holes KSDD005–8 at Boda increased both the width and (variously) the grade of the porphyry mineralisation identified by hole KSDD003 (calculated at 658.8m at 0.41g/t Au and 0.18% Cu), including the high-grade gold-copper chalcopyrite core. From the exploration conducted at Boda to date, we can see the mineralisation extends to about 1km in depth and the width of mineralisation is several hundred metres. Combined with an estimate of 712m for the strike length of the mineralisation and with the assumption that the orientation of the deposit is close to vertical, we can estimate that the size of the Boda deposit could be in the order of 738Mt at a grade of 0.35g/t (0.51g/t gold equivalent) containing up to 8.3Moz gold and potentially worth up to A\$0.55/share to Alkane shareholders (±75%).

Roswell and San Antonio maiden resources

Roswell and San Antonio's maiden inferred resources approximately treble Alkane's resource base at Tomingley and could potentially add up to 15 years to the life of operations there. However, assuming 60% conversion, their combined resources may be expected to convert into a reserve of 9.0Mt and to add approximately nine years to production. As an in-situ resource, we value Roswell and San Antonio at 5.9 Australian cents per share. For each year that they add to Tomingley's life, our valuation of Alkane increases by c 3c (initially).

Valuation: 97c confirmed plus up to 73c contingent

Our updated valuation of Alkane now attributes 25c/share in value to its Tomingley asset plus cash and 52c for its Dubbo asset. To this should then be added 14c for its investments in Calidus, Genesis and Ziron Tech (see our note, Alkane Resources: [Genesis of a golden opportunity](#), published on 24 September 2019) and at least 6c for its maiden Roswell and San Antonio resources. To this total of 97c can then be added up to a further 73c in value from contingent assets, the final valuation for which will depend on future exploration success (see Exhibit 12).

Recent developments

Since our last note on the company ([Genesis of a golden opportunity](#), 24 September 2019), Alkane has announced a number of developments:

- Additional drilling results at its Boda prospect within the Northern Molong Porphyry Project.
- Resource definition drilling updates at Roswell and San Antonio.
- Initial inferred resources at Roswell and San Antonio.
- Quarterly activities report to 31 December 2019.
- Raised A\$40.7m via a placement and non-renounceable rights offer.
- Export Finance Australia confirming its interest in financing the Dubbo project.

Each is considered in turn, below.

Boda drilling results

On 13 February, Alkane reported the assay results of drill hole KSDD005 at its Boda prospect and, on 23 March and 22 April, the results of holes KSDD006, KSDD007 and KSDD008. The drilling was part of a 5,974m diamond core exploration programme to test the depth and strike extensions to the porphyry gold-copper mineralisation at Boda, which has now been completed with only the results of hole KSDD009 (100m south of KSDD007) outstanding (anticipated in May).

Diamond core hole KSDD005 was located 200m vertically below KSDD003 and intersected an extensive (>700m true thickness) pyrite shell with chalcopyrite dominant core (c 300m thick), which is characteristic of the upper sections of an alkali porphyry mineralisation system.

Lithogeochemistry conducted on the drill samples also supports this interpretation, displaying a pattern of outer propylitic and sodic alteration at the top of the hole evolving to a copper rich calc-potassic core and terminating in a propylitic chlorite and pyrite zone. Holes KSDD006 and KSDD007 were located 100m to the north and 100m to the south of the mineralisation defined by KSDD003 and KSDD005, respectively. Hole KSDD008 was located a further 100m to the south of hole KSDD007.

A summary of all four holes is as follows:

Exhibit 1: Boda diamond drill hole assay results					
	From (m)	To (m)	Aggregate intercept (m)	Average gold grade (g/t)	Average Cu grade (%)
KSDD005	262.0	1,415.0	720.7	0.45	0.19
KSDD006	105.0	948.0	638.6	0.25	0.13
KSDD007	59.0	1,319.1	1,197.1	0.54	0.25
KSDD008	7.3	973.0	965.7	0.22	0.11
Source: Alkane Resources, Edison Investment Research					

In general, the holes recorded several significant gold-copper intercepts, within an extensive, low-grade mineralised shell similar to Cadia East. For the purposes of Exhibit 1, multiple intersections have been amalgamated and grades averaged according to the width of the individual intersections.

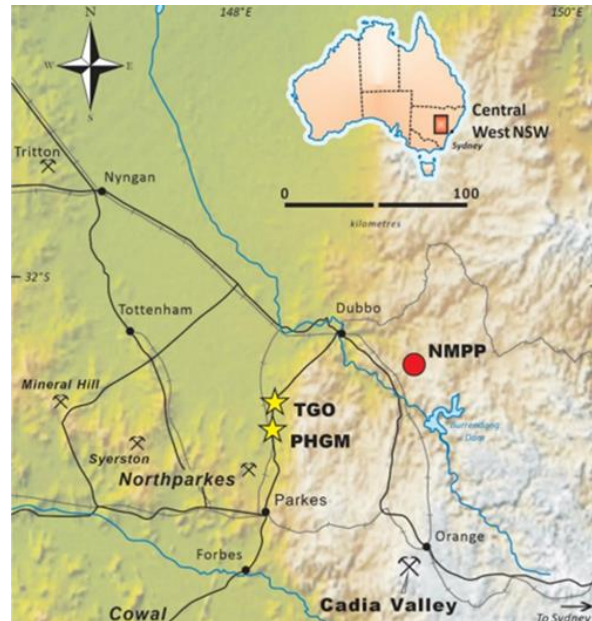
In each case, the stratigraphic sequence and the style of alteration and mineralisation was also reported to bear similarities to sections of the Cadia East deposit. The width of the mineralisation in hole KSDD007 is interpreted as being the result of the channelling of fluids along margins from Group 1 monzonites possibly from a deeper causative porphyry source. As well as the potential for

an inner potassic bornite rich core to the system, the deposit remains open both on strike and at depth.

Northern Molong Porphyry Project background

The Northern Molong Porphyry Project is 100% owned by Alkane, covers c 115km² of the northern Molong Volcanic Belt (MVB) and is around 80km to the north-east of its Tomingley Gold Mine, in the Central West of New South Wales (Exhibit 2).

Exhibit 2: Location of the Northern Molong Porphyry Project (NMPP)

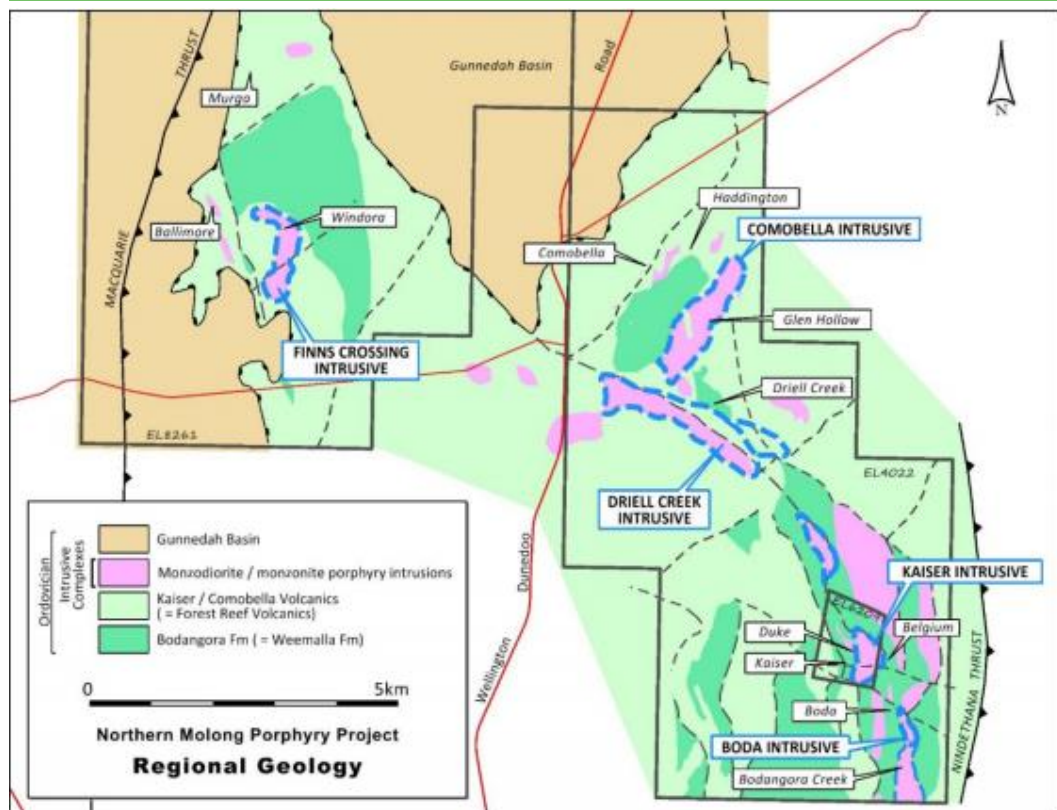


Source: Alkane Resources

To date, Alkane's drill results at Boda have demonstrated both a similar stratigraphic sequence as well as style of alteration and mineralisation to Newcrest's Cadia Valley Mines 110km to the south, although it is also more structurally complex. Nevertheless, together the Cadia Valley Mines host a JORC-compliant mineral resource estimate of 38Moz Au at a grade of 0.37g/t Au, 8.3Mt of copper at a grade of 0.26% Cu and 67Moz of silver at a grade of 0.68g/t Ag and Newcrest produced 913koz of gold last year at an all-in sustaining costs (AISC) of US\$132/oz Au (net of by-product credits), generating US\$965m in free cash flow before tax.

The project now comprises four exploration licences – Bodangora, Boda South, Kaiser and Finns Crossing – within which Alkane has defined five magnetic anomalies interpreted to be intrusive complexes – Kaiser, Boda, Comobella, Driell Creek and Finns Crossing – all within a 15km north-west to south-east trending corridor (Exhibit 2) and all close to road, rail, gas and water infrastructure. Importantly, the Boda anomaly correlates with an historic induced polarisation (IP) survey completed by CRA Exploration (now Rio Tinto) over the Boda Intrusive Complex (BIC), which showed a strong high chargeable anomaly along the northern edge of the survey area coincident with the magnetic anomaly. As a result, Alkane has recently completed a 70 line kilometre IP survey over the 6km strike extensions of the BIC to generate further drilling targets in the area.

Exhibit 3: A map of the five magnetic anomalies



Source: Alkane Resources

Four of these targets have now been drill tested – Kaiser, Boda, Comobella and Glen Hollow. Exploration has identified the margins of major monzonite intrusive complexes that provide the primary control for porphyry and epithermal mineralisation with significant intersections being reported along the western margin of both the Kaiser Intrusive Complex (KIC) and the Boda Intrusive Complex (BIC). Specifically, gold mineralisation has been discovered at Kaiser, Boda and Glen Hollow (which is part of Comobella).

Analysis and interpretation of Boda drill results

In general, holes KSDD005–7 increased both the grade and width of the porphyry mineralisation identified by hole KSDD003 (658.8m in aggregate at average grades of 0.41g/t Au and 0.18% Cu), including the high-grade gold-copper chalcopyrite core. Hole KSDD008 increased the width of the mineralisation, albeit at a slightly lower (but still consistent) grade.

From the drill hole results a number of observations can be made:

- From holes KSDD003 and KSDD008, the vertical depth before mineralisation is encountered is minimal – that is, the deposit (almost) crops out on surface.
- From all holes, mineralisation extends to c 1km in depth.
- From all holes, the width of mineralisation is several hundred metres.

Edison estimates that the strike length of the mineralisation is in the order of 712m (note that the holes drilled so far have confirmed a minimum strike of 300m and hole KSDD009 should add at least another 100m to this length). Assuming the orientation of the deposit is approximately vertical allows us to then make a very approximate estimate of its potential size, as follows:

Exhibit 4: Edison estimate of the potential size of Boda mineralisation

Characteristic (units)	Estimate
Strike (m)	712
Average estimated true width (m)	353
Average estimated true depth (m)	977
Estimated volume (Mm ³)	246
Estimated density (t/m ³)	3.0
Estimated tonnage (kt)	738
Estimated average gold grade (g/t)	0.35
Estimated average copper grade (%)	0.17
Estimated contained gold (koz)	8,342
Estimated contained copper (kt)	1,285
Source: Edison Investment Research	

Note that, at prevailing metals prices, the 0.17% copper grade is the equivalent of a 0.15g/t gold grade, such that the deposit could be described as 738Mt at a grade of 0.51g/t gold equivalent containing 12,140koz gold equivalent.

Clearly such an estimate is very far from being anything close to JORC code-compliant and experience would suggest that such estimates have an accuracy of approximately $\pm 75\%$. If it does prove to be in the right order of magnitude, however, it would suggest a multi-million ounce gold deposit at Boda with a potential valuation (based on the US\$24.08/oz average valuation of in-situ ounces calculated in our report, *Gold stars and black holes*, published in January 2019) of A\$0.55/share.

Once Alkane is in possession of the full data set from its drilling programme (ie including hole KSDD009), it will consolidate the results together with those from its recent IP survey in order to determine the size and scale of its next programme.

Roswell and San Antonio drilling and maiden resource

The Tomingley Gold Project covers an area of approximately 440km², stretching 60km north-south along the Newell Highway from the Tomingley mine in the north, through Peak Hill and almost to Parkes in the south.

Over the past two years, Alkane has conducted an extensive regional exploration programme with the aim of defining additional resources that have the potential to be mined either via open pit or underground methods and fed through the Tomingley gold plant. In general, the programme has yielded broad, shallow, high-grade intercepts that demonstrate the potential for material project life extension (subject to resource confirmation, landholder agreements and regulatory approvals).

Roswell maiden resource

On 28 January, Alkane reported a maiden inferred mineral resource at Roswell. The resource was the consequence of a 60,000m drilling programme (c 10,000m diamond and 50,000m reverse circulation) designed to define an initial inferred resource at both the Roswell and San Antonio prospects with a nominal 40m x 40m drill hole spacing to a minimum 200m vertical depth. A summary of the resource is as follows:

Exhibit 5: Maiden Roswell mineral resource estimate

Category	Tonnage (Mt)	Grade (g/t)	Contained gold (koz)
Inferred	7.02	1.97	445

Source: Alkane Resources. Note: 0.5g/t cut-off grade.

The resource has been calculated on the basis of a nominal 40m drill hole spacing (albeit some drill spacing has already been infilled to 20m), a 600m strike length and an average depth of -50m RL (c 300m below the ground surface).

The Roswell deposit is approximately 3km south of Alkane's Tomingley Gold Operation's (TGO) mine and processing facility and the drilling is part of an extensive regional programme aimed at providing additional ore feed, either at surface or underground, in the future to TGO. To this end, New South Wales state government approval has been sought for an underground exploration drive from Tomingley to the Roswell deposit, with equipment having been purchased, personnel recruited and land acquired to facilitate rapid development of the project.

In the meantime, further drilling is underway at Roswell to reduce the drill hole spacing to 20m to convert inferred resources into the indicated and (perhaps) measured categories. The resource delineated to date is a high-grade, large tonnage zone proximal to the Rosewood fault in the southern section of the tenement. There is potential to test the depth extensions of the ore zone, while other exploration targets include the poorly constrained northern zone, where mineralisation is open to the west and at depth where grade and tonnage potential is on an improving trend. Some targets will also be tested from underground as the exploration drive from Tomingley is developed.

Roswell geology background

Tomingley's gold deposits are interpreted as orogenic gold systems positioned within a major structural zone similar to the Archean greenstone belts of the Yilgarn Craton in Western Australia and the Paleozoic slate belts in Victoria.

In this case, the Tomingley, Roswell and San Antonio deposits are all positioned in an apparent gold-arsenic structural zone termed the Tomingley Gold Corridor that is approximately 500m wide and positioned immediately east of the Cotton Formation contact. The Tomingley Gold Corridor is approximately 30km in length, starting approximately 5km north of Tomingley and extending to the south of Peak Hill. The individual prospects and deposits are interpreted to have formed after an intense period of compression during an orogeny, which resulted in suitable volcanic host rocks acting as structural buttresses in which hydrothermal fluids were able to pond and precipitate gold.

The mineralisation at Roswell is similar to that at Tomingley, being hosted by two brittle, phyllic altered volcanic units (monzodiorite and andesite) and is characterised by quartz-carbonate-pyrite-arsenopyrite veins. These sheeted quartz veins are orientated as moderate to steeply dipping, striking approximately 10° east of north and are typically constrained within the volcanic units. The higher grading mineralisation occurs in the southern section of the tenement, proximal to and truncated to the south by a regional northwest trending structure named the Rosewood Fault.

San Antonio

The San Antonio deposit is a continuation of the Roswell mineralised zone to the south of the Rosewood fault.

The first phase of drilling has now been completed. As at Roswell, the initial phase of drilling was conducted on a 40m x 40m grid to a minimum 200m vertical depth. Difficult drilling conditions in the southern portion of the prospect area caused the early abandonment of six holes. However, this was rectified by means of a specialist collaring and casing tool, which allowed the holes to be re-drilled and the programme to be completed. As a result, a second phase of infill resource drilling comprising a further 50,000m has been sanctioned and is underway.

Significant intercepts from the San Antonio prospect include:

- 15m at 4.33g/t gold including 3m at 12.4g/t;
- 15m at 7.43g/t gold; and
- 18m at 12.7g/t gold including 5m at 35.5g/t.

On 20 April, Alkane announced a maiden resource at San Antonio, as follows:

Exhibit 6: Maiden San Antonio mineral resource estimate

Category	Tonnage (Mt)	Grade (g/t)	Contained gold (koz)
Inferred	7.92	1.78	453

Source: Alkane Resources. Note: 0.5g/t cut-off grade.

San Antonio's maiden resource will be subject to further infill and extensional drilling with a view to defining both the continuity of the mineralisation to the south and west and the high-grade zones at depth.

Some of the drill hole spacing used in the estimation is already infilled to 20m. Owing to the complexity of the geology however, the resource will be converted to indicated status only when confidence through drilling further areas of the resource to 20m spacing is completed. In contrast to Roswell, the resource at San Antonio was calculated to a depth of 12mRL (cf Roswell -50mRL), largely as a result of the RC drilling difficulties encountered at San Antonio causing early abandonment of holes. These abandoned holes are currently being diamond tailed to deepen the overall resource envelope to be included in the next round of resource calculations.

San Antonio geology background

A full description of the geology at San Antonio can be found in Alkane's [announcement of 20 April](#). In brief, litho-geochemistry has identified a phosphorous enriched (apatite bearing) andesite 60-70m thick with a 10m wide brecciated basal contact that appears to host the majority of mineralisation at San Antonio. A second andesite, located 50m to the west, is phosphorous poor but also hosts mineralisation. Otherwise, as at Roswell, the mineralisation at San Antonio is primarily hosted by two brittle andesite units that host structural zones generated by a competency contrast between the brittle volcanics and the ductile volcanoclastic meta-sediments.

The mineralisation at San Antonio is characterised as typical quartz-carbonate-pyrite-arsenopyrite veins hosted in phyllic altered volcanics and volcanoclastics. The mineralised zones range from 2-50m wide as shear hosted veins, sometimes becoming more stockwork in nature. As at Tomingley, the mineralisation is displaced by a swarm of post-mineralisation dolerite dykes of a similar orientation (ie dipping steeply to the north-northeast).

The mineralised bedrock lies beneath a Cainozoic alluvium overburden of 20-60m thickness and preliminary metallurgical work on San Antonio ore suggests that it has similar metallurgical qualities to the other Tomingley deposits.

Roswell and San Antonio resource analysis

Together, the Roswell and San Antonio resources comprise a 14,940kt resource at an average grade of 1.87g/t, containing 898koz gold. While the tonnage of the maiden resource at the San Antonio deposit lies between the upper and lower bands of Alkane's exploration target, the maiden resource declared at Roswell exceeds the upper bound of Alkane's target by 13.2% in terms of tonnage and by 17.4% in terms of contained gold at a 3.7% higher grade (at the same cut-off grade of 0.5g/t).

Exhibit 7: Roswell and San Antonio maiden resources vs target

Prospect	Bound	Target			Actual			Uplift of actual vs target		
		Tonnage (kt)	Grade (g/t)	Contained gold (koz)	Tonnage (kt)	Grade (g/t)	Contained gold (koz)	Tonnage (%)	Grade (%)	Contained gold (%)
Roswell	Upper	6,200	1.90	379	7,020	1.97	445	13.2	3.7	17.4
San Antonio	Upper	10,200	2.80	918	7,920	1.78	453	-22.4	-36.4	-50.6
	Lower	7,400	2.30	547	7,920	1.78	453	7.0	-22.6	-17.2

Source: Alkane Resources, Edison Investment Research

Prior to its announcing the maiden Roswell and San Antonio resources, Alkane's resources at Tomingley were 6,439kt of ore containing 407koz gold at a grade of 2.0g/t as at end-FY19, which converted into 1,410kt of reserves containing 89koz gold at a grade of 2.0g/t. As such, the maiden resources at Roswell and San Antonio more than treble Alkane's existing gold resource at Tomingley and, to all intents and purposes, meet the lower limit of its exploration target at TGO including El Paso (see Exhibit 8).

In terms of mine life, at a milling rate of 1Mtpa, Tomingley's existing FY19 resources and reserves were sufficient to support production for 6.4 and 1.4 years, respectively. Roswell and San Antonio's resources therefore could potentially add more than 14 years to the life of Tomingley's operations. Pro-rata with Tomingley's existing operations, Roswell and San Antonio's resources should convert into a reserve of 3.3Mt at 1.86g/t containing 195koz gold and therefore should be sufficient to support an additional 3.3 years of production. However, a reserve estimate performed solely on this basis may be unduly conservative. Whereas the Roswell and San Antonio resources are stated 'pre-mining', the Tomingley resource reflects a mature mine that has already mined out its open pit reserves and has started to mine its underground ones. On a similar, pre-mining basis, the resource at Tomingley was c 921koz, of which c 400koz have now been mined, with 407koz (see above) remaining and 170koz included in the underground mine plan – which suggests that a more appropriate conversion factor would be c 60% (c 570/921), in which case, Roswell and San Antonio's reserves combined could prove to be in the order of 9.0Mt, containing 539koz gold at a grade of 1.87g/t, and sufficient to support production for an additional circa nine years (cf Alkane's target of 10 years, with exploration still ongoing).

In our report, *Gold stars and black holes*, published in January 2019, we calculated an average value of in-situ resources quoted in the Australian market of US\$24.08/oz, on which basis we would value the Roswell and San Antonio deposits (combined) at US\$21.6m, or A\$34.1m, or 5.9c per share. Our current valuation of Alkane is based on the present value of future dividends potentially payable to shareholders based on the execution of the Tomingley and Dubbo mine plans. If we increase the life of the Tomingley operation by one year, our valuation (based on discounted dividends from Tomingley and Dubbo) increases by 3c per share (see 'Valuation' section on page 10) and for each year of additional life thereafter until the fifth year, when the valuation increases by 2c for each year of additional life thereafter until the seventh year, when the valuation increases by 1c for each year of additional life thereafter (exhibiting the effect of discounting). Hence, increasing the life of Tomingley by nine years adds 19c to our valuation of our 5.9c per share in-situ valuation, which approximates to only two additional years' worth of mining (ie below the bottom end of what might reasonably be expected given historical reserve to resource conversion ratios at Tomingley).

Exhibit 8 demonstrates the value that Alkane may immediately add to its operations via success at all of its prospects to the south of Tomingley (ie including El Paso) if it hits its exploration targets:

Exhibit 8: Alkane exploration targets' potential value (US\$m, A\$m, A\$/share)

		Tonnage (kt)	Grade (g/t)	Contained gold (koz)	Valuation (US\$/oz)	Valuation (US\$m)	Valuation (A\$m)	Valuation (A\$/existing share)
Total*	Upper	23,800	2.19	1,678	24.08	40.4	63.7	0.110
	Lower	15,800	1.81	920	24.08	22.1	34.9	0.060

Source: Alkane Resources, Edison Investment Research. Note: *Comprises Roswell, San Antonio and El Paso.

These valuations are based purely on the in-situ value of the resources that Alkane is targeting for delineation. Self-evidently, these valuations are subject to increase to the extent that these resources are subsequently upgraded to reserves and included in the Tomingley mine plan.

Q220 operational results

TGO continued to process predominantly low-grade stockpiles in Q220, pausing processing in late December to accommodate an extended maintenance shutdown before restarting in mid-February. Encouragingly, during the quarter the first underground stope material was processed, with both grade and metallurgical recoveries performing as expected. At the same time, underground development has been progressing on schedule.

Highlights of the quarter were:

- Above forecast gold production of 6,929oz.
- Site operating cash costs of A\$1,024/oz (US\$700/oz at average FX rates) and AISC of A\$1,441/oz (US\$985/oz).

After having upgraded its guidance after a better than expected output in Q120, after Q220 Alkane left its annual gold production forecast for FY20 unchanged at 30–35koz at an AISC of A\$1,250/oz (US\$792/oz at prevailing forex rates), which we calculate is consistent with the following operating parameters over the remainder of the year.

Exhibit 9: Tomingley quarterly operating results, Q120–Q420e

	Q120	Q220	Q320e	Q420e	FY20e
Ore milled (t)	289,282	231,493	150,000	289,282	960,057
Head grade (g/t)	0.96	1.21	1.45	1.45	1.24
Contained gold (g/t)	8,929	9,006	6,990	13,480	38,404
Recovery (%)	87.4	88.3	88.3	88.3	84.6
Gold poured (oz)	7,497	6,929	6,172	11,903	32,500
Gold sold (oz)	6,997	9,143	6,172	11,903	34,214
Gold price (US\$/oz)	1,474	1,483	1,581	1,696	1,558
Forex (A\$/US\$)	1.4593	1.4627	1.5282	1.5826	1.5082
Average realised price (A\$/oz)	2,151	2,084	2,416	2,684	2,334
C1 site cash costs (A\$/oz)	1,000	1,024	980	665	886
AISC (A\$/oz)	1,268	1,441	1,391	993	1,241

Source: Alkane Resources, Edison Investment Research. Note: Forecast average realised gold price in Q320 and Q420 excludes forward sales over 9,990oz at an average price of A\$1,847/oz.

A summary of Alkane's half year results within the context of both the quarterly results (above) and recent half-year periods, together with our updated forecasts for H220 and FY20, is as follows:

Exhibit 10: Alkane HY20 results vs H119 and H219 plus H220e forecast (A\$m, unless otherwise indicated)

Income statement	H119	H219	H120	H220e	FY20e
Revenue	52.352	40.161	34.098	33.240	67.338
Cost of sales	(28.829)	(24.918)	(16.500)	(16.554)	(33.054)
Gross profit	23.523	15.243	17.598	16.686	34.284
Other net income	1.759	0.097	0.844	0.844	1.688
Administration expenses	(4.797)	(3.508)	(5.693)	(5.693)	(11.386)
Exploration and evaluation expenditure expensed	0.000	(0.582)	0.000	0.000	0.000
EBITDA/(LBITDA)	20.485	11.250	12.749	11.837	24.586
Depreciation	(5.990)	(1.175)	(1.397)	(2.332)	(3.729)
EBIT/(LBIT)	14.495	10.075	11.352	9.505	20.857
Interest income/(cost)	(0.258)	1.320	(0.109)	0.522	0.413
PBT/(LBT)	14.237	11.395	11.243	10.027	21.270
Income tax	2.047	0.292	3.753	2.507	6.260
Marginal tax rate (%)	14.4	2.6	33.4	25.0	29.4
Profit/(loss) for the year	12.190	11.103	7.490	7.520	15.010
Basic adjusted EPS (A\$/share)	0.0241	0.0219	0.0146	0.0130	0.0275

Source: Alkane Resources, Edison Investment Research.

Gold poured in H120 was 41.7% less than in H119, at 14,426oz (cf 24,745oz in H119) as a result of operations transitioning from the cessation of open cut operations at Tomingley to underground mine development and the consequent processing of low-grade stockpiles. While H120 results, in general, showed declines compared with H119, they were very much in line with H219, with the exception of a higher marginal tax rate. On the basis of these assumptions, we have increased our revenue forecast for Alkane for FY20 from A\$63.7m to A\$67.3m, although we have also increased our cost forecast from A\$26.7m to A\$33.1m. While the consequence of these changes to our forecast for profit before tax is relatively immaterial (ie A\$1.4m or 6.2%), the consequence of the increase in the first half tax rate has resulted in an 11.8% decline in our forecast for FY20 profit after tax (see Exhibit 13), from A\$17.0m to A\$15.0m.

Dubbo developments

As per its press release on 5 March 2020, Alkane announced that Export Finance Australia (EFA) has confirmed its interest in financing Alkane's Dubbo project.

EFA is Australia's export credit agency, with a mandate to support Australian business and develop new export markets. Within that context, the EFA has confirmed in writing to Alkane that:

- It would be pleased to be a part of the financing consortium in providing the required financial support for the development of the Dubbo project, subject to the finalisation of normal due diligence, acceptable financing structures and the resulting transaction meeting the EFA's eligibility and credit requirements.
- The Dubbo project closely aligns with the recently announced initiative by the Australian government to develop its 'critical minerals' sector.
- The EFA has provided a letter of support to strengthen Australian Strategic Materials' (ASM is a 100% owned subsidiary of Alkane) ongoing discussions with potential strategic investors, other government financiers and offtake parties for the Dubbo project.

Alkane is in the process of studying a potential demerger of its Dubbo project into a separate listed entity – to which end it is in the process of scheduling a shareholder meeting later in Q2 CY20. Either way, ASM will seek to escalate its engagement with strategic investors and offtake parties with EFA support and the potentially lower cost of overall financing that it will bring.

Capital raising

In November/December 2019, Alkane raised A\$40.7m via a placing to institutions (A\$20.0m) and a non-renounceable, non-underwritten one for eight rights issue (A\$20.7m), both priced at A\$0.55 per share. Together, the two actions involved the issue of 73.9m shares and took the total at Alkane from 506.1m to 580.0m.

Alkane had originally sought a fund-raising of A\$54.8m, with A\$34.8m from the rights issue. In the event, the take-up rate of its rights offer of 59.4% raised A\$20.7m. While it then had the capacity to place the shortfall, it stated that it 'has no present need or intention to seek placement of these [shortfall] shares'.

Otherwise, Edison's funding and capex forecasts remain the same as those set out in our Outlook note, [Cashed up and hungry for investments](#), published on 12 February 2019, and subsequently updated throughout the year.

COVID-19

Since February, Alkane has been acting in response to information supplied by state and federal authorities and complying with recommended measures to combat COVID-19. These include heightened cleaning protocols, social distancing, stringent hygiene practices and health screening.

TGO is a predominantly a residential operation and only personnel and contractors essential to the safe operation of the mine are permitted on site. All non-essential travel has ceased.

At present, operations continue as planned and TGO is expected to exceed the minimum guidance production of 30,000oz gold in FY20. There remains approximately 250,000 tonnes of low-grade ore stockpiles on the surface, in addition to the underground ore resource.

However, COVID-19 has the potential to interrupt operations in the event of any of the following:

- despite the extensive measures taken, sufficient employees test positive for COVID-19 and the majority of any crew is unable to attend while they self-isolate;
- despite increasing inventory from suppliers and continuing to liaise closely with them, their capacity to supply critical parts and reagents is compromised; and/or

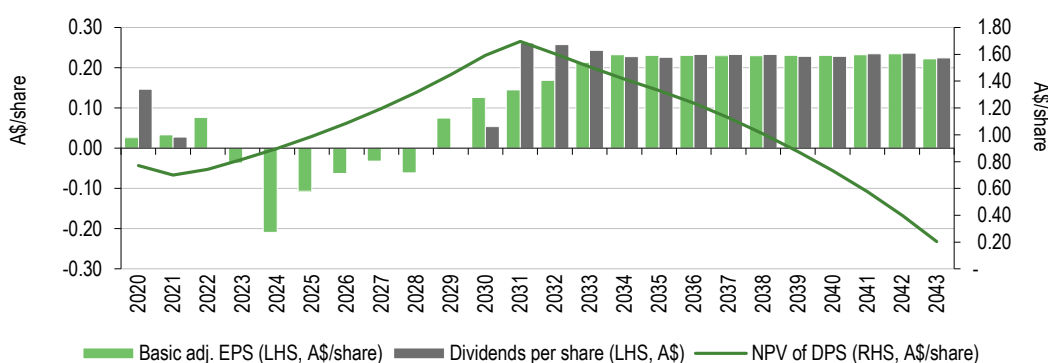
the New South Wales State government introduces regulations that inhibit suppliers or employees from attending beyond a skeleton crew.

Valuation

Our valuation of Alkane is based on the present value of our forecast life of operations dividend stream to investors as a result of the execution of the Tomingley and Dubbo mine plans (discounted back to present value at a rate of 10% per year), excluding exploration expenditure.

In the aftermath of the 14.6% increase in the number of shares in issue entailed by the capital raising (above), our valuation of Alkane is A\$0.77/share, of which A\$0.25 is accounted for by Tomingley and cash and A\$0.52 is accounted for by Dubbo. All other things being equal, this valuation may be expected to rise to A\$1.70/share on the cusp of the company's first material (steady-state) dividend distribution to shareholders in FY31. A graph of our expectations for Alkane's EPS, DPS and valuation from the present to FY43 is as follows:

Exhibit 11: Alkane life of operations' forecast EPS and (maximum potential) DPS (A\$/share)



Source: Edison Investment Research

Note that the DPS columns in Exhibit 11 represent theoretical, maximum potential dividends payable, rather than actual dividends forecast and are used solely for valuation purposes. In reality, we would expect any dividend that could be payable (in FY20 for example) to instead be re-

invested into the business, either in the form of exploration expenditure or investment to develop the Dubbo project.

A summary of our valuation of Alkane within the context of the above developments is therefore as follows:

Exhibit 12: Alkane Resources' valuation summary			
Asset	Existing assets' valuation (Australian cents per share)	Contingent assets' valuation (Australian cents per share)	Potential total (Australian cents per share)
Tomingley plus cash	25		25
Dubbo	52		52
Sub-total	77		77
Investments in Calidus, Genesis, Ziron Tech	14		14
Roswell and San Antonio maiden resources	6	10–19	19
El Paso and ongoing TGO exploration		5	5
Boda exploration		55	55
Total	97	70–79	170
Source: Edison Investment Research. Note: Totals may not add up owing to rounding.			

Exhibit 13: Financial summary

A\$000s	2017	2018	2019	2020e	2021e	2022e
Year end 30 June	IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
INCOME STATEMENT						
Revenue	117,792.0	128,799.0	92,513.0	67,337.9	76,850.9	73,749.8
Cost of Sales	(57,073.0)	(51,304.0)	(53,747.0)	(33,053.6)	(36,627.6)	(30,418.2)
Gross Profit	60,719.0	77,495.0	38,766.0	34,284.3	40,223.2	43,331.6
EBITDA	49,333.0	67,403.0	30,461.0	22,898.3	31,918.2	35,026.6
Normalised operating profit	7,607.0	30,932.0	25,152.0	20,857.3	26,317.3	26,185.6
Amortisation of acquired intangibles	0.0	0.0	0.0	0.0	0.0	0.0
Exceptionals	0.0	0.0	0.0	0.0	0.0	0.0
Share-based payments	0.0	0.0	0.0	0.0	0.0	0.0
Reported operating profit	7,607.0	30,932.0	25,152.0	20,857.3	26,317.3	26,185.6
Net Interest	(1,035.0)	572.0	1,062.0	412.9	1,171.5	1,273.4
Joint ventures & associates (post tax)	0.0	0.0	0.0	0.0	0.0	0.0
Exceptionals	(40,140.0)	(188.0)	(582.0)	0.0	0.0	35,397.4
Profit before tax (norm)	6,572.0	31,504.0	26,214.0	21,270.2	27,488.8	27,459.0
Profit before tax (reported)	(33,568.0)	31,316.0	25,632.0	21,270.2	27,488.8	62,856.4
Reported tax	4,631.0	(6,845.0)	(2,339.0)	(6,259.8)	(6,872.2)	(15,714.1)
Profit after tax (norm)	11,203.0	24,659.0	23,875.0	15,010.4	20,616.6	11,744.9
Profit after tax (reported)	(28,937.0)	24,471.0	23,293.0	15,010.4	20,616.6	47,142.3
Minority interests	0.0	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0	0.0
Net income (normalised)	11,203.0	24,659.0	23,875.0	15,010.4	20,616.6	11,744.9
Net income (reported)	(28,937.0)	24,471.0	23,293.0	15,010.4	20,616.6	47,142.3
Basic average number of shares outstanding (m)	503	506	506	546	580	598
EPS – basic normalised (A\$)	0.02	0.05	0.05	0.03	0.04	0.02
EPS – diluted normalised (A\$)	0.02	0.05	0.05	0.03	0.03	0.02
EPS – basic reported (A\$)	(0.06)	0.05	0.05	0.03	0.04	0.08
Dividend (A\$)	0.00	0.00	0.00	0.00	0.00	0.00
Revenue growth (%)	N/A	9.3	(-28.2)	(-27.2)	14.1	(-4.0)
Gross margin (%)	51.5	60.2	41.9	50.9	52.3	58.8
EBITDA margin (%)	41.9	52.3	32.9	34.0	41.5	47.5
Normalised operating margin (%)	6.5	24.0	27.2	31.0	34.2	35.5
BALANCE SHEET						
Fixed assets	148,474.0	138,275.0	172,196.0	210,717.1	223,188.1	403,266.4
Intangible assets	83,107.0	93,136.0	103,894.0	118,803.0	128,803.0	118,024.2
Tangible assets	60,627.0	36,266.0	51,038.0	66,008.1	68,479.1	259,336.2
Investments & other	4,740.0	8,873.0	17,264.0	25,906.0	25,906.0	25,906.0
Current assets	54,276.0	93,306.0	76,501.0	86,322.2	94,761.5	58,363.5
Stocks	9,644.0	19,153.0	4,816.0	2,582.8	2,947.7	2,828.8
Debtors	2,445.0	2,030.0	1,998.0	5,534.6	6,316.5	6,061.6
Cash & cash equivalents	41,969.0	72,003.0	69,582.0	78,099.8	84,892.3	48,868.1
Other	218.0	120.0	105.0	105.0	605.0	605.0
Current liabilities	(19,335.0)	(27,430.0)	(21,762.0)	(16,471.7)	(16,765.5)	(55,892.3)
Creditors	(11,166.0)	(9,299.0)	(8,007.0)	(2,716.7)	(3,010.5)	(2,500.1)
Tax and social security	0.0	(6,929.0)	(9,317.0)	(9,317.0)	(9,317.0)	(9,317.0)
Short-term borrowings	0.0	0.0	0.0	0.0	0.0	0.0
Other	(8,169.0)	(11,202.0)	(4,438.0)	(4,438.0)	(4,438.0)	(44,075.2)
Long-term liabilities	(18,488.0)	(13,647.0)	(13,059.0)	(13,059.0)	(13,059.0)	(47,759.0)
Long-term borrowings	0.0	0.0	0.0	0.0	0.0	(34,700.0)
Other long-term liabilities	(18,488.0)	(13,647.0)	(13,059.0)	(13,059.0)	(13,059.0)	(13,059.0)
Net assets	164,927.0	190,504.0	213,876.0	267,508.5	288,125.1	357,978.5
Minority interests	0.0	0.0	0.0	0.0	0.0	0.0
Shareholders' equity	164,927.0	190,504.0	213,876.0	267,508.5	288,125.1	357,978.5
CASH FLOW						
Operating cash flow before WC and tax	10,011.0	69,027.0	31,897.0	24,586.3	33,606.2	72,112.0
Working capital	5,518.0	(9,498.0)	(5,172.0)	(6,593.7)	(853.0)	(136.5)
Exceptional & other	40,254.0	1,277.0	1,454.0	0.0	0.0	(35,397.4)
Tax	0.0	(6,845.0)	6,975.0	(6,259.8)	(6,872.2)	(15,714.1)
Net operating cash flow	55,783.0	53,961.0	35,154.0	11,732.8	25,881.0	20,863.9
Capex	(33,551.0)	(9,224.0)	(19,621.0)	(18,699.0)	(9,760.0)	(201,386.0)
Acquisitions/disposals	53.0	0.0	4.0	0.0	0.0	56,176.2
Net interest	(1,035.0)	572.0	1,062.0	412.9	1,171.5	1,273.4
Equity financing	3,471.0	(5.0)	0.0	38,632.1	0.0	22,711.1
Exploration and Evaluation	(10,154.0)	(10,969.0)	(11,578.0)	(14,909.0)	(10,000.0)	(10,000.0)
Other	2,963.0	(4,317.0)	(7,442.0)	(8,652.0)	(500.0)	39,637.2
Net cash flow	17,530.0	30,018.0	(2,421.0)	8,517.8	6,792.5	(70,724.2)
Opening net debt/(cash)	(24,455.0)	(41,969.0)	(72,003.0)	(69,582.0)	(78,099.8)	(84,892.3)
FX	0.0	0.0	0.0	0.0	0.0	0.0
Other non-cash movements	(16.0)	16.0	0.0	0.0	0.0	0.0
Closing net debt/(cash)	(41,969.0)	(72,003.0)	(69,582.0)	(78,099.8)	(84,892.3)	(14,168.1)

Source: Company sources, Edison Investment Research

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