

## DANAKALI LIMITED

### OUR VALUATION SHOWS STRONG ECONOMICS

We have undertaken a valuation of Danakali Limited by modelling life-of-mine cash flows based on publically available information. We arrive at an NPV of US\$359m for Danakali's share of Colluli. We calculate the IRR to be 25.6%. We forecast steady state cash flows of US\$79m (attributable to Danakali) following the Phase II expansion of Colluli.

### TARGET PRICE OF A\$1.0 PER SHARE

Using a 0.5x NPV multiple and a \$550/t SOP price forecast, we arrive at a valuation for Danakali of US\$187m, or A\$1.0 per share. This implies c.31% upside to the current share price.

### FURTHER VALUATION UPSIDE

Danakali recently announced the completion of front-end engineering design optimisation work, which debottlenecked the processing plant configuration and resulted in an additional 47 kt per annum of SOP output capacity at no additional capital cost. Our valuation indicates that this increases our calculated Danakali NPV by 16% to \$415m and the IRR by 2.1% to 27.7%.

### PROGRESS AT COLLULI

Danakali continues to make significant progress towards financing and construction at Colluli, with a recent A\$12.2m fund raise ensuring the Company is well funded to further advance the project. A number of key consultant and staff appointments have also been made during the last few months.

### POTASH MARKET BOTTOMED OUT

It appears that demand for potash has strengthened year-to-date, driven by Brazil and China in particular. The market outlook going into H2 2017 is positive, as we expect Chinese inventories to be replenished during the remainder of the year.

### STAND OUT POTASH JUNIOR

Danakali's 50% owned Colluli project is currently the only fully permitted post BFS Sulphate of Potash (SOP) project globally. We reiterate our view that Danakali is the stand out junior in the potash space.

GICS sector	Materials
Ticker	ASX:DNK
Price (as of 26 June 2017) (A\$)	0.76
Market capitalisation (A\$m)	186.4



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## WORLD CLASS POTASH PROJECT MOVING FORWARD

In our note published on February 23<sup>rd</sup> 2017 “Danakali Limited: SOP Potash Game Changer”, we outlined our thesis that Danakali’s 50% owned Colluli project in Eritrea is a premium SOP Potash project. In the past 5 months, Danakali has made further progress in moving the project closer to construction, we outline these developments later in this note.

## OUR VALUATION UNDERLINES SOLID PROJECT ECONOMICS

We have also produced a financial model on Danakali Limited based on publically available information. Our Danakali valuation is based on a cash flow model for Danakali’s 50% holding in the Colluli project. The valuation is based on modelling life-of-mine cash flows, and taking a view on the company's guidance for production, costs and capital expenditures and the SOP sales price.

Our financial model reflects the agreed funding structure between Danakali and the Eritrean National Mining Company (“ENAMCO”). The shareholder agreement with ENAMCO states that the Colluli Mining Share Company (“CMSC”) is to fund construction of Colluli using a mixture of third party secured debt (we assume 60% of total funding) and equity raised from shareholders. The shareholder contribution is Danakali’s obligation, where 50% is contributed as equity in CMSC and 50% through an interest free loan receivable from CMSC. After CMSC’s third-party debt is serviced, 50% of the funds available for distribution are preferentially repaid to Danakali to settle the interest free loan.

Key assumptions and outputs are summarised in Tables 1 and 2 below:

Table 1: Key Colluli Input Parameters

Phase I Production Start (yr)	2020
Phase I Production (SOP ktpa)	425
Phase II Production Start (yr)	2025
Phase I Production (SOP ktpa)	850
Discount Rate	10%
Forecast SOP price - FOB Massawa (\$/t)	550
Phase I Development Capital (US\$m)	298
Phase II Development Capital (US\$m)	175
Phase I Operating Costs (US\$/t SOP)	235
Phase II Operating Costs (US\$/t SOP)	207
Tax Rate	38.0%
Royalty Rate	3.5%
Debt as a % of total funding	60.0%
Debt Interest Rate	7.5%

Source: H&P Valuation

Table 2: Key Colluli Output Parameters (Post tax)

NPV Colluli (US\$m)	808
NPV Colluli DNK share (US\$m)	359
IRR DNK Share	25.6%

Source: H&P Valuation

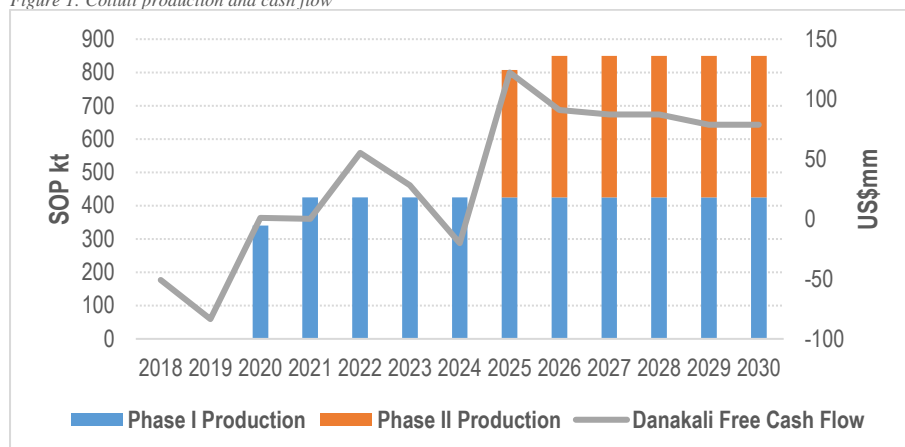
As table 2 shows, our valuation generates an attractive NPV of Danakali’s share of Colluli of US\$359m at an IRR of 25.6%. In our view, these are attractive

metrics, especially considering the low upfront capital commitment of less than US\$300m (excluding working capital and fees).

## STRONG FREE CASH FLOW GENERATION

According to our valuation, Colluli is set to generate just under US\$160m of free cash flow per year (\$79mn attributable to Danakali) once operating at steady state after the Phase II expansion.

Figure 1: Colluli production and cash flow



Source: H&P Valuation

## TARGET PRICE OF A\$1.0 PER SHARE

Explorers/developers frequently trade at a discount to NPV to compensate for the risks associated with pre-production projects. On this basis, we use a matrix of multiples which we apply to our DCF valuations.

Table 3: Valuation Matrix

Stage	Standard
Higher risk – early stage and /or unpermitted	0.5
Moderate risk – pre-production /BFS and permitted	0.8
Standard risk – operating mine	1.0

Source: H&P

We apply a 0.5x multiple to the Colluli project. Whilst we would typically apply a 0.8x multiple to a post BFS permitted project, like Colluli, we use a more conservative multiple due to perceived higher financing risk for a project located in Eritrea. The table below summarises our sum of the parts valuation for Danakali. All the figures are shown on an attributable basis.

Table 4: Danakali Limited Valuation

	% Ownership	US\$m	P/NPV	US\$m	A\$m	A\$/sh
Colluli (inc. work capital)	50%	358.5	0.5	179.2	235.9	1.0
Net Cash		8.0	1.0	8.0	10.5	0.0
<b>Total NPV (10%)</b>		<b>366.5</b>		<b>187.2</b>	<b>246.4</b>	<b>1.0</b>

Source: H&P Valuation

Our sum of the parts valuation of Danakali's assets is US\$366.5m. Applying our NPV multiples to the Company's operations we generate a valuation of A\$1.0/sh, implying 31% upside to the current price.

## FURTHER VALUATION UPSIDE BASED ON RECENT OPTIMISATION WORK

In May 2017, Danakali announced the completion of front-end engineering design optimisation work, which debottlenecked the DFS processing plant configuration and resulted in an additional 47 kt per annum of SOP output capacity at no additional capital cost. As an updated set of economics post this increase in production capacity has not yet been released by the Company, our target price calculation does not take this optimised scenario into account. To illustrate the potential upside associated with this scenario, we show the key project parameters for the debottlenecked scenario in table 5 below. We assume no additional operating costs associated with the debottlenecking in production.

Table 5: Key Colluli Output Parameters at 472 ktpa SOP production

NPV Colluli (US\$m)	918
NPV Colluli DNK share (US\$m)	415
IRR DNK Share	27.7%

Source: H&P Valuation

As the table above illustrates, the optimised scenario increases our Danakali NPV by US\$56m or 16%. The corresponding IRR increases by 2.1%. We will update our valuation and target price post the release of full set of economics associated with the optimised debottlenecked scenario, expected in Q3 2017.

## REITERATING OUR INVESTMENT CASE

In our view, Colluli is a world class and the most advanced development SOP project globally. Its key strengths are summarised below:

- **Shallow open-pittable resource:** This allows for low cost, simple mining. As a result, we expect Colluli's operating costs to be in the lowest quartile of the SOP producers globally.
- **Fully permitted:** Colluli is currently the only fully licensed, construction ready SOP project in the world.
- **The right combination of sylvinite, carnallite and kainite salts:** Allows for simple and high yield conversion to SOP at ambient temperature conditions using a proven conventional processing technology.
- **Key infrastructure in place:** A 230km road to a modern port of Masawa on the Red Sea coast already exists, which reduces up front capital cost requirements.
- **Low capital intensity:** With up front capital investment requirement of under US\$300m, Colluli has the lowest capital intensity amongst SOP projects currently in development.
- **Quick to revenue:** Colluli's capability to rapidly generate final SOP product and hence revenue post commissioning gives it an advantage versus brine SOP projects, which face a significant lag between commissioning and first revenue.
- **Attractive Economics:** Our valuation outlines a project with an IRR of 25.6% and a steady state cash flow of US\$80m attributable to DNK.
- **Eritrea - an improving mining investment destination:** The country has also been ranked as the 6th most attractive mining investment destination in Africa out of 20 in the most recent Fraser Institute Survey of mining executives globally.

## COLLULI PROJECT UPDATE

As previously stated, since we last published on Danakali in February 2017, significant progress has been made in advancing the project towards construction. We highlight key points of progress below:

- **Appointment of a Project Construction Manager:** Tony Harrington brings significant expertise in delivery of mining EPC projects in Africa, including most recently the successful delivery of the Base Resources' Kwale Mineral Sands Project in Kenya and Chimmiwango expansion at Barrick Gold's Lumwana Project in Zambia.
- **Increase of production capacity through debottlenecking** of the processing plant front-end.
- **Appointment of AMC Consultants to optimise pit designs and to support the mining contract tendering process.**
- **Appointment of Inglett and Stubbs International (ISI) as the preferred power supplier:** Initial bid provides power generation cost estimates within 1.5% of the DFS with marginally lower development capital requirements.
- **Appointment of Turner & Townsend consultants to manage EPC bid scope:** This will allow optimised project set-up at the execution stage and facilitate the development of the procurement, construction, commissioning and contracting strategies.
- **Raising of A\$12.2m to advance Colluli:** This raise will allow Danakali to complete the optimisation work and prepare for full construction funding, expected in late 2017/early 2018. In our view, the May 2017 fund raise shows that international capital markets are open for a company operating in Eritrea and underlines investors' confidence in the viability of the Colluli project.

## POTASH MARKET SHOWING SIGNS OF LIFE

After a period of downward pressure on prices, the demand outlook for potash has brightened over 2017 with potash prices increasing 5-10% year-to-date. Brazilian demand made a strong start to 2017 driven by an increase of soy acreage and record Brazilian Real prices for crops such as sugar. A recent article in the International Fertilizer magazine stated the need for inventories to be replenished in China in 2017, which bodes well for an increase in MOP and SOP demand going into 2018. The world's second biggest potash producer Potash Corp also recently stated that a turnaround in the potash market is well underway.

## INVESTMENT RISKS

Danakali faces risks common to most mining companies moving its project into full production, such as resource, construction, production, commodity prices and operating and capital cost risks. An escalation of border tensions between Eritrea and Ethiopia is a risk, considering the location of Colluli close to the border between the two countries. We note however, that the border region of the Danakil has no history of conflict. Raising funds for a mining project in Eritrea remains a challenge, particularly with respect to debt funding, however in our view the high-quality nature of the Colluli project, relatively low upfront capital requirements and attractive financial metrics help in mitigating this risk. In additions, the presence of Capital Research and JP Morgan Asset Management on the Danakali register alleviates some of the risks associated with further equity funding required at Colluli.

## FINANCIAL SUMMARY

**Danakali Limited** **DNK:ASX**

<b>US\$/A\$ exchange rate</b>	<b>1.32</b>	<b>Share price A\$/sh</b>	<b>0.76</b>	<b>Market Cap A\$m</b>	<b>186.4</b>
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## Price assumptions

		2018E	2019E	2020E	2021E	2022E	2023E
SOP	US\$/t	550.0	550.0	550.0	550.0	550.0	550.0

## Production volumes

		2018E	2019E	2020E	2021E	2022E	2023E
SOP - Phase I	Kt	-	-	340.0	425.0	425.0	425.0
SOP - Phase II	Kt	-	-	-	-	-	-
<b>Total SOP produced</b>	<b>Kt</b>	<b>-</b>	<b>-</b>	<b>340.0</b>	<b>425.0</b>	<b>425.0</b>	<b>425.0</b>

## Colluli Mining Share Company (CMSC) Income Statement

Year end December		2018E	2019E	2020E	2021E	2022E	2023E
Revenue	US\$m	-	-	187.0	233.8	233.8	233.8
Mining Royalty	US\$m	-	-	(6.5)	(8.2)	(8.2)	(8.2)
Operating Costs	US\$m	-	-	(79.9)	(99.9)	(99.9)	(99.9)
<b>EBITDA</b>	<b>US\$m</b>	<b>-</b>	<b>-</b>	<b>100.5</b>	<b>125.7</b>	<b>125.7</b>	<b>125.7</b>
Interest Expece	US\$m	-	-	(12.2)	(5.5)	(0.9)	-
Tax @38%	US\$m	-	-	(5.2)	(17.3)	(19.1)	(19.4)
<b>Net Income</b>	<b>US\$m</b>	<b>-</b>	<b>-</b>	<b>8.6</b>	<b>28.3</b>	<b>31.1</b>	<b>31.7</b>

## Colluli Mining Share Company (CMSC) Cash Flow Statement

Year end December		2018E	2019E	2020E	2021E	2022E	2023E
<b>Cash Flow from Operations</b>	<b>US\$m</b>	<b>-</b>	<b>-</b>	<b>86.9</b>	<b>106.6</b>	<b>109.5</b>	<b>110.0</b>
Sustaining Capex	US\$m	-	-	(6.4)	(8.0)	(8.0)	(8.0)
Expansion Capex	US\$m	(127.5)	(208.7)	-	-	-	(61.3)
<b>Cash flow from Investing</b>	<b>US\$m</b>	<b>(127.5)</b>	<b>(208.7)</b>	<b>(6.4)</b>	<b>(8.0)</b>	<b>(8.0)</b>	<b>(69.3)</b>
Debt Financing/Repayment	US\$m	76.5	125.2	(78.5)	(98.6)	(24.7)	-
Shareholder Loan/Repayment	US\$m	51.0	83.5	-	-	(33.4)	(15.4)
<b>Opening cash position</b>	<b>US\$m</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>10.0</b>	<b>10.0</b>	<b>53.4</b>
Net change in cash	US\$m	-	-	2.0	-	43.4	25.4
<b>Closing cash position</b>	<b>US\$m</b>	<b>8.0</b>	<b>8.0</b>	<b>10.0</b>	<b>10.0</b>	<b>53.4</b>	<b>78.7</b>

## Colluli Capital and Operating Costs

		2018E	2019E	2020E	2021E	2022E	2023E
Capital expenditure	US\$m	127.5	208.7	6.4	8.0	8.0	69.3
Mine gate cash cost	US\$/t SOP	-	-	168.1	168.1	168.1	168.1
<b>Total cash cost</b>	<b>US\$/t SOP</b>	<b>-</b>	<b>-</b>	<b>235.1</b>	<b>235.1</b>	<b>235.1</b>	<b>235.1</b>

## Danakali Key Metrics

Year end December		2018E	2019E	2020E	2021E	2022E	2020E
Cash Flow from Project	US\$m	-	-	1.0	-	21.7	12.7
Cash flow from Shareholder Loan	US\$m	(51.0)	(83.5)	-	-	33.4	15.4
<b>Free Cash Flow from Project</b>	<b>US\$m</b>	<b>(51.0)</b>	<b>(83.5)</b>	<b>1.0</b>	<b>-</b>	<b>55.1</b>	<b>28.0</b>

<b>Colluli NAV</b>	US\$m	<b>810.0</b>
<b>Danakali NAV</b>	US\$m	<b>358.5</b>
<b>Danakali IRR</b>	%	<b>25.6%</b>

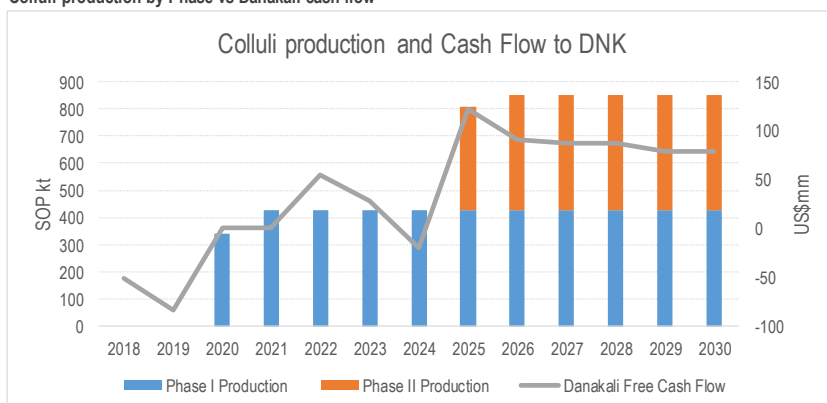
## ESTIMATED NET ASSET VALUE (NAV)/SHARE

	% Ownership	US\$m	P/NPV	US\$m	A\$m	A\$/sh
Colluli (inc. work capital)	50%	358.5	0.5	179.2	235.9	0.96
Net Cash		\$8.0	1.0	8.0	10.5	0.04
<b>Total NPV (10%)</b>		<b>\$366.5</b>		<b>\$187.2</b>	<b>\$246.4</b>	<b>1.00</b>

## Current P/NAV

0.39x

## Colluli production by Phase vs Danakali cash flow



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