

## Quarterly Activities Report – December 2018

17 January 2019

### HIGHLIGHTS

- Net debt free at 31 December 2018 – a reduction of US\$24.8m during the quarter.
- Mined tonnes increased a further 5% to 5.0Mt, helping to offset lower ore grade.
- Continued strengthening of rutile and zircon prices in the quarter with ilmenite prices remaining stable.
- FY19 production guidance revised, primarily due to ore characteristics being encountered in the remnants of the Central Dune orebody:
  - Rutile - 88,000 to 94,000 tonnes (previously 88,000 to 93,000 tonnes).
  - Ilmenite - 385,000 to 415,000 tonnes (previously 420,000 to 450,000 tonnes).
  - Zircon - 31,000 to 34,000 tonnes (previously 32,000 to 37,000 tonnes).
- No lost time or medical treatment injuries.
- 136km<sup>2</sup> Vanga prospecting licence granted, extending south west from the company's existing Kwale Operations.
- Toliara Project continues to progress towards Pre-Feasibility Study completion in Q1 2019.

African mineral sands producer, **Base Resources Limited** (ASX & AIM: BSE) (**Base Resources** or the **Company**) is pleased to provide a quarterly operational, development and corporate update.

The main focus at the Kwale Mineral Sands Operations (**Kwale Operations**) in Kenya, was maximising mineral recoveries under a high tonnage, low grade regime, together with preparations for relocating mining operations to the South Dune orebody in June 2019. The Company also continued to advance its exploration programs in pursuit of mine life extensions.

The Company progressed its Toliara mineral sands project (**Toliara Project**) in the south-west of Madagascar with development of the selected mining, processing and infrastructure options as well as distribution of the first product marketing samples to customers. The project remains on track to complete the Pre-Feasibility Study in the March 2019 quarter, ahead of delivering a Definitive Feasibility Study in the December 2019 quarter.

### KWALE OPERATIONS

PRODUCTION & SALES	Dec 2017 Quarter	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter
Production (tonnes)					
Ilmenite	119,209	111,630	114,773	118,265	108,465
Rutile	22,798	21,634	24,451	25,125	24,505
Zircon	9,569	9,166	9,286	9,683	8,252
Zircon low grade <sup>1</sup>	-	-	-	-	-
Sales (tonnes)					
Ilmenite	119,554	140,665	107,170	107,632	106,788
Rutile	25,377	25,526	25,635	23,580	24,008
Zircon	8,144	9,884	9,007	8,507	8,063
Zircon low grade <sup>1</sup>	3,287	-	-	-	-

<sup>1</sup> Zircon low grade tonnes contained in concentrate, equivalent to approximately 70-80% of the value of primary zircon.

Mining continued in the Central Dune, again achieving higher than planned mining rates. Mined ore grades were lower than previous quarters, as expected, with all mining now located on the western and southern fringes of the orebody ahead of expected completion of Central Dune mining in the June 2019 quarter.

<b>MINING &amp; WCP PERFORMANCE</b>	Dec 2017 Quarter	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter
Ore mined (tonnes)	2,882,529	1,883,159	3,543,430	4,791,969	<b>5,036,211</b>
HM %	7.61	6.88	6.36	4.78	<b>3.60</b>
HMC produced (tonnes)	196,725	125,298	192,559	199,079	<b>148,937</b>

Wet concentrator plant (**WCP**) production of heavy mineral concentrate (**HMC**) moderated in the quarter to 149kt (last quarter: 199kt) as a result of the lower mined ore grades. Consequently, HMC stockpiles decreased to 46kt (last quarter: 86kt) by quarter end. WCP mineral recoveries were also lower during the quarter due to the low ore grades and an increased percentage of oversize in the plant feed. Further optimisation of the spirals circuit during the second half of December remedied this issue and restored recoveries to close to target levels.

With the Tailings Storage Facility (**TSF**) outer wall complete, all sand tails were deposited into the mined-out area of the Central Dune, representing the first stage of rehabilitation in this section. Rehabilitation of the outer wall of the TSF continued. Good rains throughout the quarter kept the Mukurumudzi Dam full.

<b>MSP PERFORMANCE</b>	Dec 2017 Quarter	Mar 2018 Quarter	June 2018 Quarter	Sept 2018 Quarter	Dec 2018 Quarter
MSP Feed (tonnes of HMC)	190,798	180,128	192,376	194,311	<b>191,633</b>
MSP feed rate (tph)	91	92	90	91	<b>90</b>
MSP recovery %					
Ilmenite	100	101	100	101	<b>102</b>
Rutile	100	99	101	99	<b>99</b>
Zircon	77	78	79	79	<b>73</b>

Mineral separation plant (**MSP**) availability was good at 97% (last quarter: 97%) with a total of 192kt of HMC processed (last quarter: 194kt). The previously announced five-day maintenance shutdown of the MSP, scheduled for November 2018, has been postponed to the September 2019 quarter, due to contractor availability.

Rutile production and recoveries were consistent with recent quarters at 24.5kt (last quarter: 25.1kt) and 99% (last quarter: 99%) respectively.

Ilmenite recoveries were higher at 102% (last quarter: 101%), but overall production dropped to 108.5kt (last quarter: 118.3kt) due to lower contained ilmenite in the feed, a trend that we expect to continue for the remainder of the Central Dune orebody.

Zircon recoveries reduced to 73% (last quarter: 79%), impacted by lower contained zircon in the feed, resulting in decreased production of 8.3kt (last quarter: 9.7kt).

Bulk loading operations at the Company's Likoni Port facility continued to run smoothly, dispatching more than 126kt of ilmenite and rutile during the quarter (last quarter: 128kt). Containerised shipments of rutile and zircon through the Mombasa Port proceeded according to plan.

<b>SUMMARY OF UNIT COSTS &amp; REVENUE PER TONNE (US\$)</b>	<b>Dec 2017 Quarter</b>	<b>Mar 2018 Quarter</b>	<b>June 2018 Quarter</b>	<b>Sept 2018 Quarter</b>	<b>Dec 2018 Quarter</b>
Unit operating costs per tonne produced	\$92	\$98	\$102	\$103	<b>\$115</b>
Unit cost of goods sold per tonne sold	\$120	\$114	\$143	\$124	<b>\$146</b>
Unit revenue per tonne of product sold	\$344	\$314	\$376	\$354	<b>\$377</b>
Revenue: Cost of goods sold ratio	2.9	2.8	2.6	2.8	<b>2.6</b>

Total operating costs were marginally higher than the previous quarter due to higher tonnes mined, which, when combined with a decrease in overall production volumes, resulted in a higher unit operating cost of US\$115 per tonne produced (rutile, ilmenite and zircon) (last quarter: US\$103 per tonne). Unit operating costs are higher than the same period last year (December 2017 quarter: US\$92 per tonne) due to higher operating costs associated with a 75% increase in mining and WCP volumes following implementation of the Kwale Phase 2 mine optimisation project. Cost of goods sold of US\$146 per tonne sold (operating costs, adjusted for stockpile movements, and royalties) (Q3: US\$124) was higher than last quarter due to the drawdown of HMC stocks, resulting in an increase in cost of goods sold of US\$0.4m (Q3: decrease in cost of goods sold of US\$1.8 million as finished goods stocks increased).

Revenue per tonne of product sold varies significantly each quarter, with the number of bulk rutile sales during that quarter being the primary factor. In a year, there are typically seven or eight bulk rutile sales of approximately 10-12kt each, which means any given quarter will usually contain either one or two of these sales. As annual rutile sales account for approximately 40% of revenue but only 15% of volume, the number of bulk rutile sales in a quarter has a significant bearing on revenue, but not sales volume. This quarter had two bulk rutile sales taking total rutile sales to 24.0kt, lower than last quarter's 23.6kt total rutile sales. Higher zircon and rutile prices in the quarter and steady ilmenite prices contributed to the average revenue per tonne increasing to US\$377 per tonne (last quarter: US\$354 per tonne).

### **MINING TRANSITION TO THE SOUTH DUNE**

The planned transition of mining to the South Dune orebody has been advanced to June 2019 (previously scheduled for July 2019) due to mining the Central Dune orebody faster than anticipated over the past two quarters and an anticipated continuation of the lower than expected ore densities, and therefore lower ore tonnes, encountered while mining the remnants of the Central Dune orebody. Rescheduling of the mining transition to the South Dune will result in a two-week shutdown of the WCP in June 2019. As a result, commencing February 2019, MSP feed rates will be lowered by 20% for a three-month period, a month longer than originally planned, to ensure sufficient HMC stocks are available during the transition to the South Dune to allow continuous feed to the MSP. Production of ilmenite, rutile and zircon will be correspondingly lower during this time.

Engineering work, procurement, clearing and earthworks for the transition continued in the quarter with equipment deliveries commencing in December 2018. The total cost of works for the mine move are forecast to be US\$12.3m and will be incurred over financial year 2019 (**FY19**). The project primarily involves the supply and installation of 7,400m of slurry and water piping, an 8,500m 11kV power line, a pipe bridge across the Mukurumudzi Dam spillway, a 1.25MW slurry booster pump and a 1MW process water booster pump. Total expenditure on the mining transition to the South Dune to date has been US\$5.1m (last quarter: US\$0.3m).

<b>FY19 PRODUCTION GUIDANCE REVISED</b>	<b>Previous FY19 Guidance Range</b>	<b>Revised FY19 Guidance Range</b>
Rutile (tonnes)	88,000 to 93,000	88,000 to 94,000
Ilmenite (tonnes)	420,000 to 450,000	385,000 to 415,000
Zircon (tonnes)	32,000 to 37,000	31,000 to 34,000

The revised FY19 production guidance is driven by a combination of:

- An anticipated continuation of the lower ore densities (than previously forecast) seen while mining the remaining fringes of the Central Dune orebody. This means fewer available ore tonnes, thereby bringing forward the exhaustion of the Central Dune and the bringing forward of the move to the South Dune to June 2019 from July 2019 and the associated two week shut.
- Mineral assemblage variations resulting in lower ilmenite content relative to rutile and zircon than previously forecast in the fringe ore zones.

FY19 production guidance is based on the following updated assumptions:

- Mining of 17.9Mt (previously 18.3Mt) at an average heavy mineral grade of 3.88% (previously 3.98%), with the remaining volume all from Ore Reserves<sup>2</sup>.
- MSP feed rate at an average of 86tph (previously 89tph), consistent with recent performance.
- Mineral separation plant product recoveries of 101% for ilmenite (previously 100%), 99% for rutile (unchanged) and 76% for zircon (previously 77%), consistent with recent performance.

## MARKETING

Global pigment producers have reported a moderation in demand through the traditionally slower December quarter, with some pigment end users and traders understood to have reduced their inventories. The Chinese domestic pigment market softened due to ongoing economic uncertainties, as did some of China's export markets following the US/China trade tensions.

However, as pigment producers in most major producing regions have continued to target maximum output, demand for feedstock remains high. Ongoing supply constraints in the high-grade feedstock sector (including rutile) have maintained upward pressure on rutile prices. This will continue into the March 2019 quarter with solid price increases being contracted for upcoming rutile shipments.

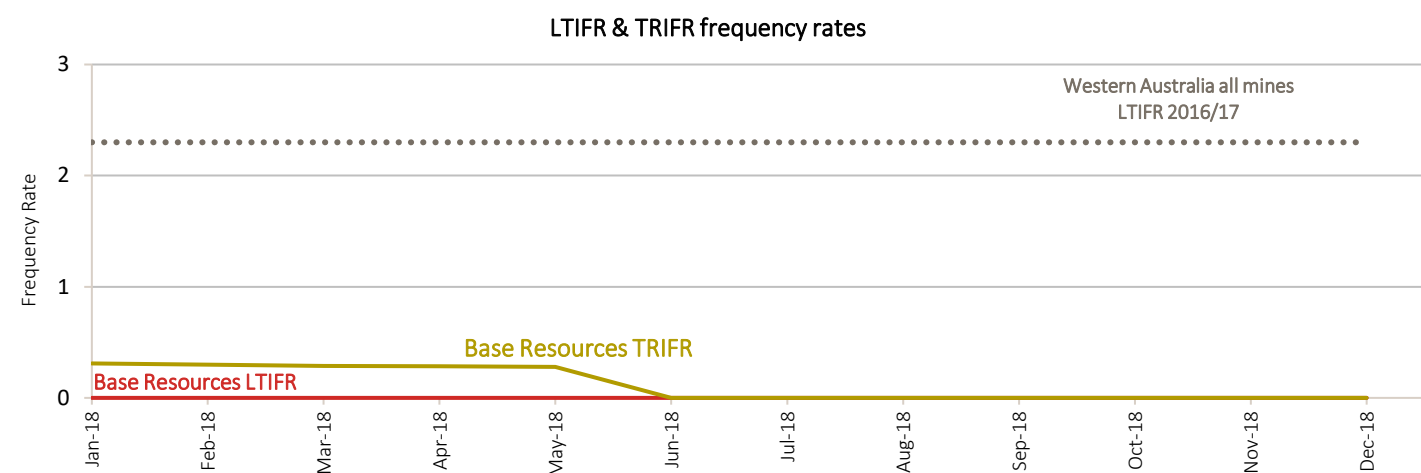
Demand for ilmenite from the Chinese pigment industry was firm through the quarter with pigment producers increasing their output as the impact of environmental inspections diminished. Prices for both domestic and foreign ilmenite in China remained reasonably stable throughout the quarter, which is expected to continue through to the March 2019 quarter. Major global pigment producers indicate they expect the current end user pigment de-stocking cycle to be completed during the March 2019 quarter, with demand increasing again through the seasonally strong June 2019 quarter.

Zircon demand weakened through the quarter as a result of global trade tensions and softer economic conditions across most markets. However, ongoing supply constraints have supported high zircon prices which are expected to remain at the current high levels through early 2019. The extent of a rebound in zircon demand during the seasonally strong June 2019 quarter will largely depend on the general economic performance in China and other major zircon markets.

<sup>2</sup> The Ore Reserves estimates underpinning the above production targets were prepared by Competent Persons in accordance with the JORC Code (2012 edition). The above production targets are the result of detailed studies based on the actual performance of the Kwale mine and processing plant. These studies include the assessment of mining, metallurgical, ore processing, environmental and economic factors.

## SAFETY

With no lost time or medical treatment injuries occurring during the quarter or in the past year, the Company’s lost time injury frequency rate (**LTIFR**) and total recordable injury frequency rate (**TRIFR**) remain at zero. This represents an exceptional performance reflective of the ongoing focus and importance placed on safety by management. Base Resources’ employees and contractors have now worked 14.9 million man-hours LTI free, with the last LTI recorded in early 2014. Further, 5.3 million man-hours have been worked without a medical treatment injury.



## COMMUNITY AND ENVIRONMENT

Agricultural livelihood programs at Kwale, run in conjunction with partners Business for Development, DEG, FMO, Australia’s DFAT and Kenya Red Cross, continue to develop with encouraging support from both national and county Kenyan governments. These programs have expanded to involve over 3,000 smallholder farmers and community groups.

Harvesting of cotton, pea and sorghum crops have been completed for this growing season with good results and the farmers’ cooperative, PAVI, is now marketing the produce. In addition, beekeeping has developed into a leading income generator for participating farmers with good yields and consistent pricing.

More than 350 secondary scholarships were awarded to students from Kwale County in the quarter.

Rehabilitation of the tailings storage facility outer sand wall is underway with approximately 28% revegetated so far. Local women’s groups have proven to be vital partners in the rehabilitation program, supplying grass seed and manufacturing erosion control materials.

At the Toliara Project, agreements are being put in place with local communes to formalise Base Resources’ community development initiatives, including construction of water boreholes, a school and health facility over the next three years. Several local improvement projects have been carried out in each of the five local communes including flood protection, irrigation channels and preparations for the upcoming planting season.

## BUSINESS DEVELOPMENT

### TOLIARA PROJECT DEVELOPMENT - MADAGASCAR

As the Pre-Feasibility Study has progressed, Base Resources’ has revised its development plan for the Toliara Project to now complete the Definitive Feasibility Study by the December 2019 quarter, ahead of a decision to proceed to construction in the March 2020 quarter. The full Pre-Feasibility Study remains on target for completion in the March 2019 quarter. This timetable is still expected to have the Toliara Project in production in the December 2021 quarter.

Key activities progressed during the quarter, included:

- Continuation of the mineral separation plant test work and flowsheet design, using the heavy mineral concentrate produced by the wet concentrator plant test work.
- Progressing processing plant, camp and infrastructure design and capital cost estimation.
- Distribution of ilmenite marketing samples from the mineral separation plant test work.
- Progressing revised mineralogy for the Ranobe deposit.
- Development of an operational workforce plan and strategy for training local staff ahead of planned construction.
- Commencement of baseline studies in accordance with environmental approvals.
- The land acquisition process for the mine site, road and port facility with the establishment of a compensation committee and resettlement consultation occurring.

Finalising the Pre-Feasibility Study and continuing long lead activities which feed into the Definitive Feasibility Study will be the primary focus in the March 2019 quarter, including:

- Updating the Ranobe deposit Mineral Resources estimate, incorporating the mineralogy and drilling completed to date, allowing development of a detailed mine plan.
- Continuing the drill program, targeting an increase in measured and indicated resources, completion of the Ranobe deposit mineralogy and a final update to the Mineral Resources estimate, ahead of an Ore Reserve estimate in the December 2019 quarter.
- Producing rutile and zircon market samples.
- Continuing baseline studies and land acquisition programs.
- Initiating training of local staff ahead of planned construction.
- Progressing the detailed design and tendering of the camp facilities, ahead of early works construction start expected in the second half of 2019.

Total expenditure on the Toliara Project for the quarter was US\$3.8m (last quarter: US\$2.2m).

National Presidential elections were completed in Madagascar in December 2018, with Andry Rajoelina being sworn in as President in the coming weeks. He was President previously between 2009 and 2013.

## EXTENSIONAL EXPLORATION - KENYA

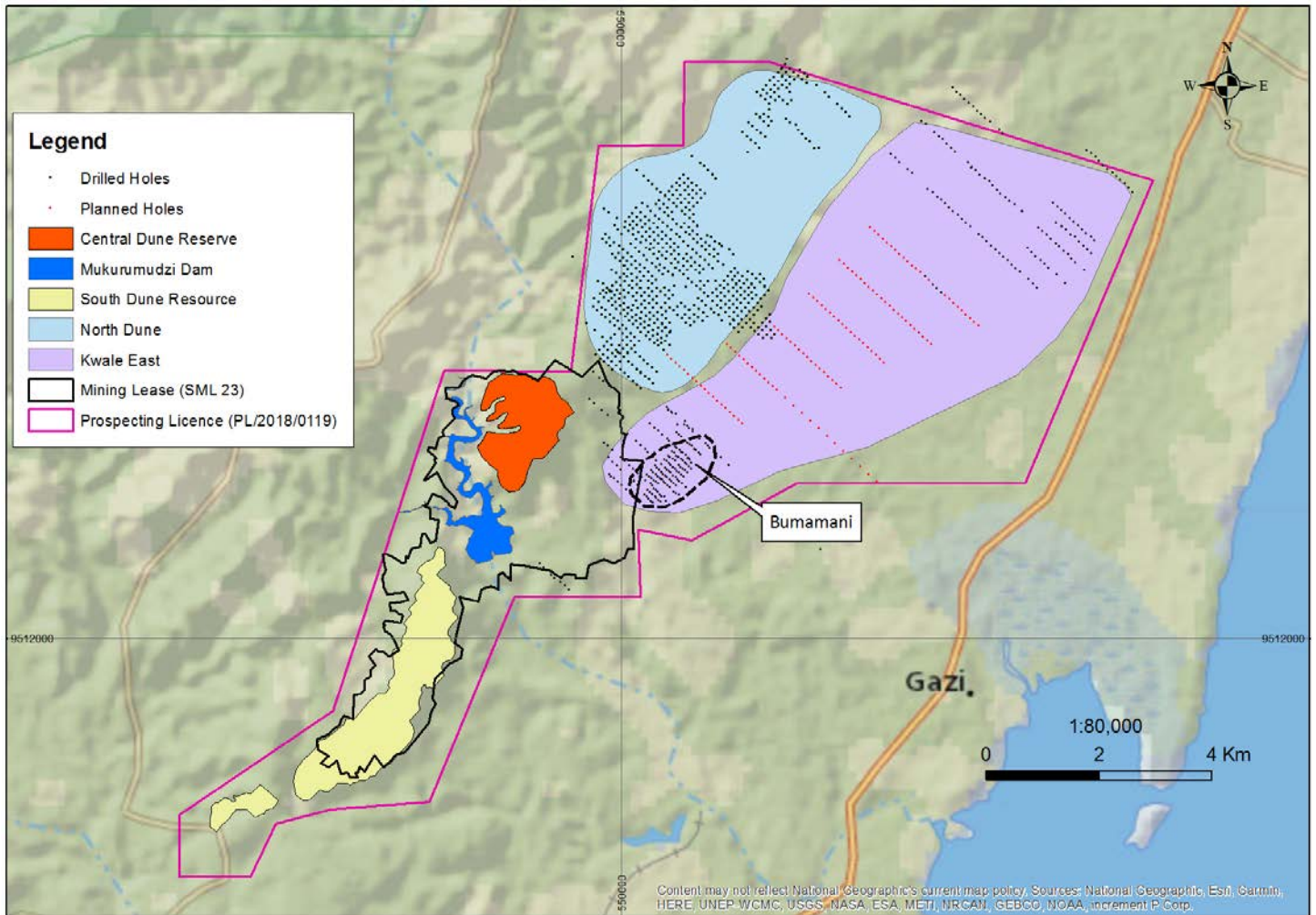
Mining tenure arrangements continue to progress with the Kenyan Ministry of Petroleum and Mining as a precursor to an anticipated updated Ore Reserve based on the expanded 2017 Kwale South Dune Mineral Resource as announced on 4<sup>th</sup> October 2017<sup>3</sup>.

Following expiry of Kwale SPL 173 in May 2018, a new Prospecting Licence (**PL 2018/0119**) for the area surrounding Kwale Operations was granted. The new licence was issued under the Kenyan Mining Act 2016, with the area reduced by 50%, as required, to 88km<sup>2</sup> (refer to the below map). The new prospecting licence is valid for three years with the option to extend.

Motivated by the improved economic environment, refined resource definition methodology and insights from five years of operations on the Central Dune, the re-evaluation of the North Dune continued in the quarter with drill assay work nearing completion. Delays in drill sample analysis has deferred delivery of a Mineral Resource estimate for the North Dune which is now expected in the June 2019 quarter.

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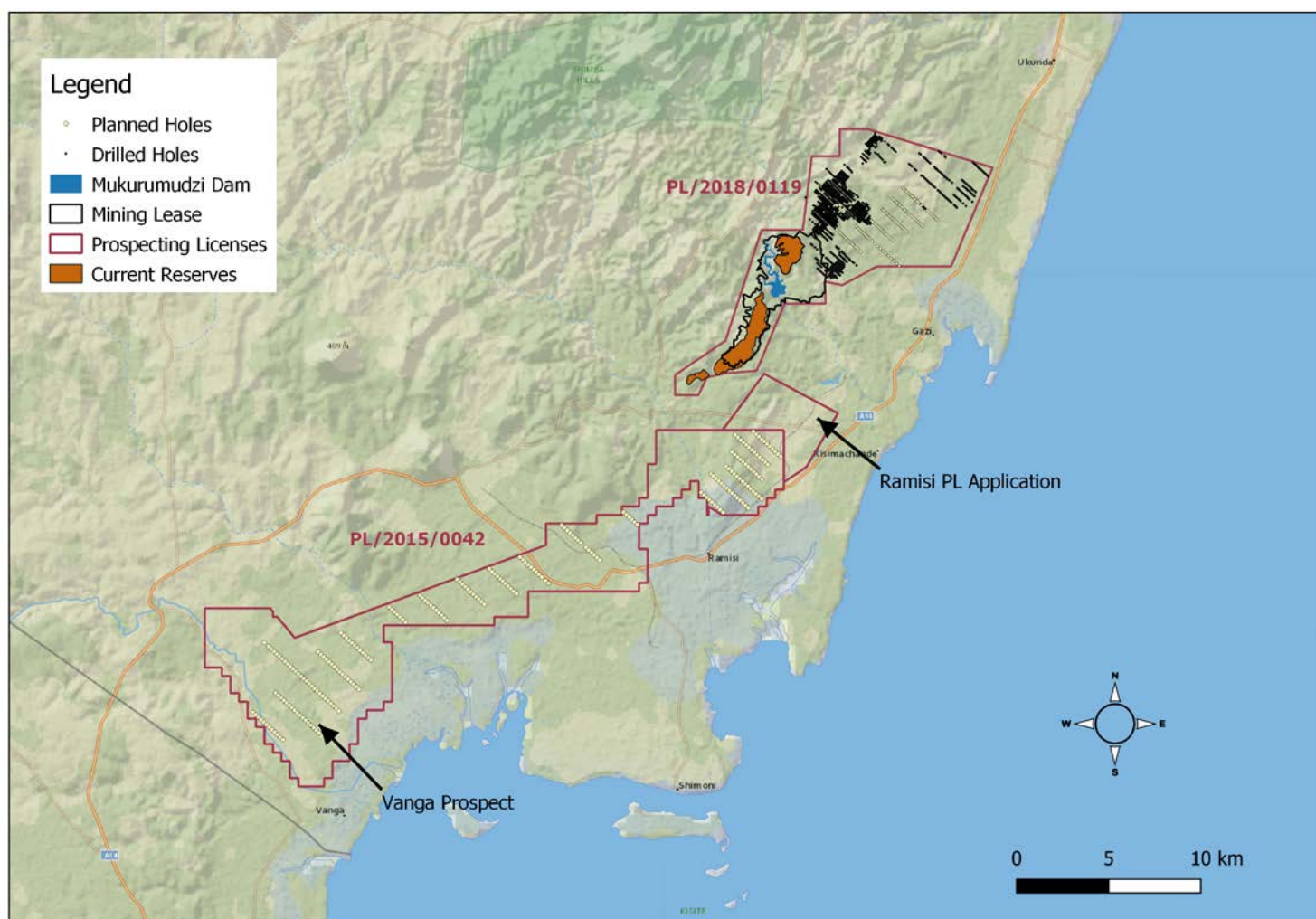
<sup>3</sup> Refer to Base Resources market announcement “Mineral Resource Increase for Kwale South Dune” released on 4 October 2017, which is available at <http://www.baseresources.com.au/investor-centre/asx-releases>.



Extensional exploration drilling at Kwale Operations

Extensional exploration drilling in the North-East Sector (Kwale East) of PL 2018/0119 commenced in the June 2018 quarter with 274 holes for 3,835 metres of drilling completed. Completion of the remaining drilling program (4,200 metres) in this area remains suspended pending resolution of community access issues. Drill assay results to date have shown potential for some limited extensional economic resource close to the Central Dune (Bumamani), but this remains subject to more detailed evaluation.

The Company’s 136km<sup>2</sup> Vanga Prospecting Licence application was recommended for approval by the Kenyan Mineral Rights Board, with the licence issued in December 2018 (PL/2015/0042). Community engagement in the area is currently underway, with a drill program planned to commence in the March 2019 quarter, access and drill rig availability permitting. In addition, a north eastern extension of the Vanga PL/2015/0042 has been applied for to cover further prospective ground which has since become available. Refer to the map below. Expenditure on exploration activities in Kenya during the quarter was US\$0.4m (last quarter: US\$0.6m).



Location of the Vanga PL and Ramisi extension relative to Kwale Operations

## CORPORATE

### NET DEBT REDUCTION

During the quarter, the Company became net cash positive for the first time following a US\$24.8 million reduction in net debt from US\$23.8 million at 30 September 2018 to a net cash position of US\$1.0 million at 31 December 2018. The Company's cash positive position is comprised of cash reserves of US\$49.2 million, with the Revolving Credit Facility drawn to US\$48.2 million. Future cash generation will now be available to contribute to the progression of the Toliara Project.

### KENYAN VAT RECEIVABLE

As previously announced, Base Resources has refund claims for VAT paid in Kenya, relating to both construction of the Kwale Project and the period since operations commenced, totalling approximately US\$24.3 million at 31 December 2018. These claims are proceeding through the Kenya Revenue Authority process, although no refunds were received during the quarter (last quarter: nil). Base Resources is continuing to engage with the Kenyan Treasury and the Kenya Revenue Authority, seeking to expedite the remainder of the refunds.

### LAPSED OPTIONS

A total of 61,425,061 options with an exercise price of A\$0.40 per share lapsed unexercised following their expiry on 31 December 2018.



*In summary, at 31 December 2018:*

- Net cash of US\$1.0 million, consisting of:
  - Cash and cash equivalents of US\$49.2 million.
  - Revolving Credit Facility debt of US\$48.2 million.
- 1,166,623,040 fully paid ordinary shares on issue.
- 48,586,062 performance rights issued pursuant to the terms of the Base Resources Long Term Incentive Plan.

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**For further information contact:**

**James Fuller, Manager - Communications and Investor Relations**

Base Resources

Tel: +61 (8) 9413 7426

Mobile: +61 (0) 488 093 763

Email: [jfuller@baseresources.com.au](mailto:jfuller@baseresources.com.au)

**UK Media Relations**

Tavistock Communications

Jos Simson and Barnaby Hayward

Tel: +44 (0) 207 920 3150

#### **About Base Resources**

Base Resources is an Australian based, African focused, mineral sands producer and developer with a track record of project delivery and operational performance. The Company operates the established Kwale Operations in Kenya and is developing the Toliara Project in Madagascar. Base Resources is an ASX and AIM listed company. Further details about Base Resources are available at [www.baseresources.com.au](http://www.baseresources.com.au).