

24 March 2020

## EXPLORATION DRILLING COMMENCED AT KALKAROO

### HIGHLIGHTS

- 2020 exploration drilling campaign commenced at Kalkaroo using drilling equipment managed and operated by Havilah.
- Clear objectives to define a shallow gold resource in Tertiary age clays and to better define the saprolite gold mineralisation within the confines of a conceptual starter open pit at West Kalkaroo.
- A secondary objective is to explore the largely untested, highly prospective Kalkaroo fault zone for shallow gold mineralisation lying outside of the current saprolite gold resource.
- Bulk drill samples will be collected to allow study of the mineralogical and metallurgical recovery parameters for rare earth element (**REE**) minerals previously noted in assays from West Kalkaroo.

**Havilah Resources Limited** ('Havilah' or 'Company') is pleased to advise that following receipt of drilling approvals from the Department for Energy and Mining (**DEM**) it has commenced its 2020 exploration drilling campaign. Havilah operates a dry-hired percussion drilling rig with its own drilling crew, which allows it to drill cost-effectively and provides flexibility in choosing the order of drilling targets (Figure 1). The exploration operations are carried out from Havilah's existing exploration basecamp at its Kalkaroo homestead.

Currently, drilling is occurring on Kalkaroo mining lease ML 6498 with several important objectives:

1. **Resource delineation drilling of shallow gold mineralisation in the Tertiary age Namba Formation cover sediments.** Gold mineralisation over economic widths and grades was identified by previous drilling in a more carbonaceous basal layer of the Namba Formation ([refer to ASX announcement 23 August 2013](#)). Importantly, this low-grade gold mineralisation is only 23-36 metres below the surface and is approximately 25-30 metres above the bedrock saprolite gold zone (Figure 2). Metallurgical test work showed >80% recoveries of gold in this extremely soft clayey material and low cyanide consumption rates ([refer to ASX announcement 22 August 2013](#)). Previously the low grades of this gold mineralisation (typically 0.6 to 1.2 g/t) were considered to be subeconomic, but current high Australian dollar gold prices clearly warrant re-evaluation. This is especially so, given this cover sedimentary material has to be mined as overburden to access the underlying bedrock gold and copper JORC Mineral Resources.
2. **To increase the density of drillholes in the saprolite gold zone at West Kalkaroo** to improve confidence in the gold resource within a conceptual starter open pit. Many gold intersections in the saprolite gold zone reported from past rounds of drilling are extremely promising, particularly in and near the Kalkaroo fault zone, as summarised in an earlier ASX release ([refer to ASX announcement 22 July 2013](#)). Metallurgical

studies, confirmed by recent pre-feasibility study (PFS) work, indicated > 90% gold recoveries in the saprolite gold ore by conventional CIL/CIP processing ([refer to ASX announcement 9 May 2019](#)).

3. **Testing the sparsely drilled mineralised Kalkaroo fault zone** over approximately 2 km length from West Kalkaroo to East Kalkaroo for shallow saprolite gold and REE mineralisation (Figure 2). The Kalkaroo fault is generally well mineralised where previously intersected in drillholes and is considered by Havilah's geologists to be the feeder zone to the widespread Kalkaroo stratabound mineralisation that mostly constitutes the current Kalkaroo JORC Mineral Resource. Long sections of the fault zone have never been drilled and accordingly it is believed to have high potential for discovery of additional shallow gold mineralisation that lies outside of the current saprolite gold resource.
4. **Investigation of the REE mineralisation previously reported from West Kalkaroo.** This included highly elevated levels of the more valuable REE namely Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb) ([refer to ASX announcement 7 January 2020](#)). Bulk drill samples will be collected for further mineralogical and metallurgical recovery studies to determine whether it is feasible to produce a REE mineral concentrate from the Kalkaroo copper-gold ores.

Given Kalkaroo is a large gold deposit in its own right, containing over 3.1 million ounces (refer to JORC Mineral Resource table at end) and recognising the current high Australian dollar gold price, Directors consider it prudent to focus on gaining as much drilling information as possible about the shallow gold resources at Kalkaroo. With Havilah's drilling capability the key drilling information can be obtained efficiently and Havilah's in-house geologists and mining engineers are able to model and evaluate the new data quickly.

Depending on the future world economic situation, it may be that obtaining development financing for the shallow open pit gold mining operation is one possible way to initiate development of the Kalkaroo copper-gold-cobalt deposit in the short to medium-term. The current drilling program will assist in evaluating this option.

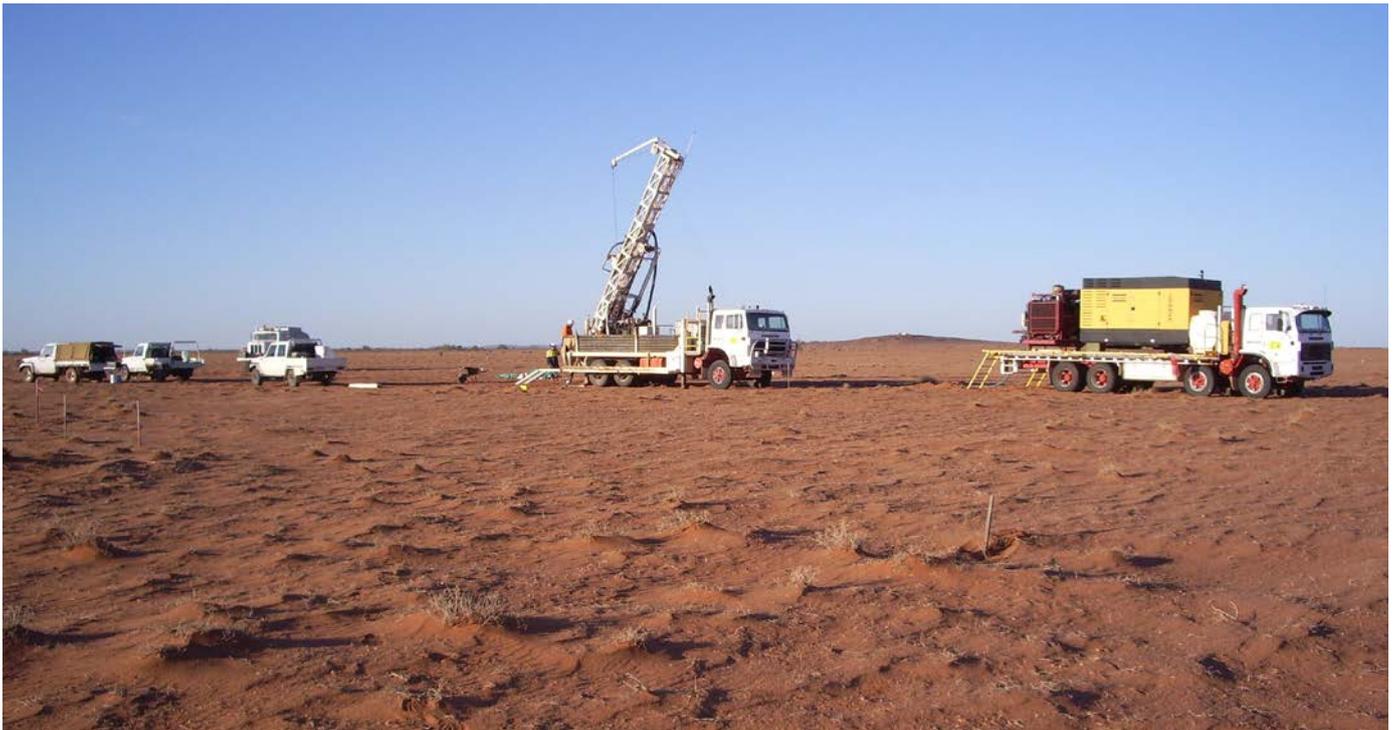
#### **About the Kalkaroo copper-gold-cobalt deposit**

Havilah's 100% owned Kalkaroo copper-gold-cobalt deposit contains JORC Mineral Resources of 1.1 million tonnes of copper, 3.1 million ounces of gold and 23,200 tonnes of cobalt and an open pit JORC Ore Reserve of 100 million tonnes (refer to 2019 JORC Ore Reserve and Mineral Resource tables below). As such, Kalkaroo is the largest undeveloped open pit copper deposit on a copper equivalent basis in Australia. The recent Wanbao PFS indicated a pre-tax NPV<sub>7.5%</sub> of A\$564 million and an IRR of 26%\*. This was based on average annual production of 30,000 tonnes of copper and 72,000 ounces of gold (as recovered metal) over a 13 year production period. The Kalkaroo PFS is currently being updated by Havilah based on extensive new metallurgical test work resulting in improved metal recoveries and revised metal prices. Havilah has already secured mining leases (and a Native Title Mining Agreement) over the Kalkaroo deposit. Havilah also owns the Kalkaroo Station pastoral lease, a non-mineral asset on which the Kalkaroo deposit is located, eliminating land access risk for the project.

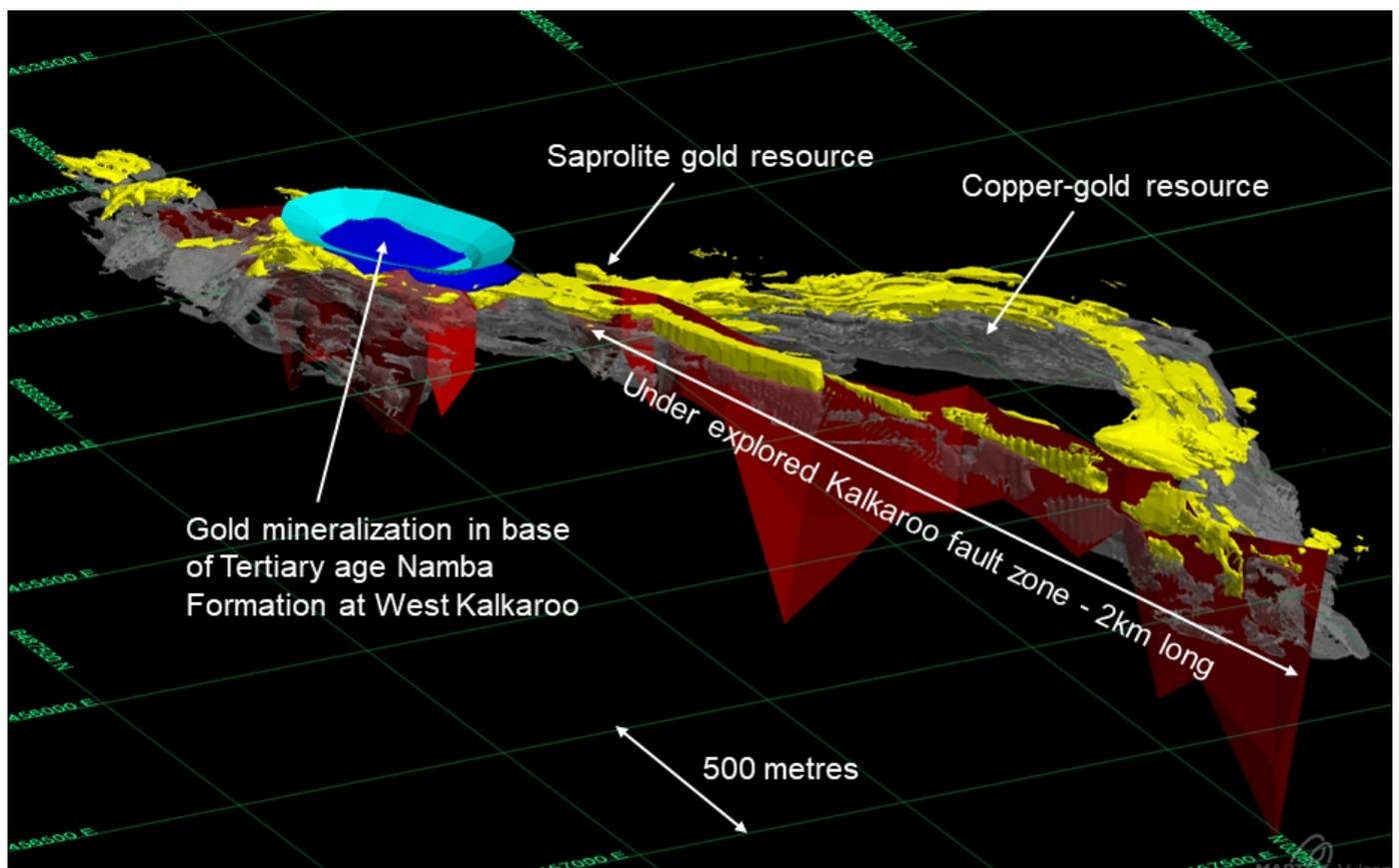
\* based on US\$2.89/lb copper, US\$1,200/oz gold and A\$:US\$ 0.75 in the Wanbao PFS ([refer to ASX release 18 June 2019](#)).

This release has been authorised on behalf of the Havilah Resources Limited Board by Mr Simon Gray.

**Figure 1** Havilah drilling at West Kalkaroo last week



**Figure 2** Oblique 3D view of Kalkaroo deposit showing the under explored Kalkaroo fault zone (red) and gold mineralisation in Namba Formation clays at West Kalkaroo that is currently being drilled (dark blue).



## Kalkaroo JORC Mineral Resource as of 31 July 2019

Project	Classification	Resource Category	Tonnes	Copper %	Cobalt %	Gold g/t	Copper tonnes	Cobalt tonnes	Gold ounces
Kalkaroo <sup>3</sup>	Measured	Oxide Gold Cap*	12,000,000			0.82			
	Indicated	Oxide Gold Cap	6,970,000			0.62			
	Inferred	Oxide Gold Cap	2,710,000			0.68			
	<b>Total</b>	<b>Oxide Gold Cap</b>	<b>21,680,000</b>			<b>0.74</b>			<b>514,500</b>
	Measured	Sulphide Copper-Gold	85,600,000	0.57		0.42			
	Indicated	Sulphide Copper-Gold	27,900,000	0.49		0.36			
	Inferred	Sulphide Copper-Gold	110,300,000	0.43		0.32			
	<b>Total</b>	<b>Sulphide Copper-Gold</b>	<b>223,800,000</b>	<b>0.49</b>		<b>0.36</b>	<b>1,096,600</b>		<b>2,590,300</b>
		<b>Total Kalkaroo</b>	<b>245,480,000</b>				<b>1,096,600</b>		<b>3,104,800</b>
	Inferred	Cobalt Sulphide <sup>4</sup>	193,000,000		0.012			23,200	

## Kalkaroo JORC Ore Reserve as of 31 July 2019

Project	Classification	Tonnes (Mt)	Copper %	Gold g/t	Copper tonnes (Kt)	Gold ounces (Koz)
Kalkaroo <sup>1</sup>	Proved	90.2	0.48	0.44	430	1,282
	Probable	9.9	0.45	0.39	44	125
<b>Total</b>		<b>100.1</b>	<b>0.47</b>	<b>0.44</b>	<b>474</b>	<b>1,407</b>

### Footnotes to 2019 JORC Ore Reserve and Mineral Resource Tables

Numbers in tables are rounded

<sup>1</sup> Details released to ASX: [18 June 2018](#)

<sup>3</sup> Details released to ASX [30 January 2018](#) & [7 March 2018](#)

<sup>4</sup> Note that the Kalkaroo cobalt JORC Inferred Resource is not added to the total tonnage

\* oxide gold cap is synonymous with saprolite gold ore. Saprolite is a geological term applying to clay material formed by complete weathering of bedrock.

### **Cautionary Statement**

This announcement contains certain statements which may constitute 'forward-looking statements'. Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, performance or achievements to differ materially from those expressed, implied or projected in any forward-looking statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

### **Competent Person's Statement**

The information in this announcement that relates to Exploration Targets, Exploration Results, Mineral Resources and Ore Reserves is based on data and information compiled by geologist, Dr Chris Giles, a Competent Person who is a member of The Australian Institute of Geoscientists. Dr Giles is Technical Director of the Company, is a full-time employee and is a substantial shareholder. Dr Giles has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Giles consents to the inclusion in the announcement of the matters based on his information in the form and context in which it appears. Information for the Kalkaroo Ore Reserve and Mineral Resource complies with the JORC Code 2012. All other information was prepared and first disclosed under the JORC Code 2004 and is presented on the basis that the information has not materially changed since it was last reported. Havilah confirms that all material assumptions and technical parameters underpinning the reserves and resources continue to apply and have not materially changed.

For further information visit [www.havilah-resources.com.au](http://www.havilah-resources.com.au)

**Contact:** Dr Chris Giles, Technical Director, on (08) 8155-4500 or email: [info@havilah-resources.com.au](mailto:info@havilah-resources.com.au)

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