

## Drilling Starts at Leviathan High Grade Rare Earth Target



### Highlights

- **Shallow RC drilling has commenced at the Leviathan rare earth oxide (REO) Prospect (Solstice 80%) to test below high-grade aircore results to 0.97% (9,700ppm) TREOY<sup>1</sup>.**
- **Leviathan is a syenite intrusion near the Company's Hobbes Gold Deposit where multiple consecutive aircore holes have returned end of hole (EOH) results greater than 0.10% (1,000ppm) TREOY.**
- **Aircore drillholes typically only penetrated a couple of metres into fresh syenitic and felsic porphyry intrusive rock types below the transported cover profile.**
- **TREOY mineralisation reports to fresh or partly oxidised material at or close to EOH and is associated with bastnaesite (a primary REO-fluorocarbonate mineral found in global REO deposits) indicating potential for high grade and/or volume fresh rock mineralisation in the underlying intrusive.**

Solstice Minerals' Chief Executive Officer and Managing Director, Mr Nick Castleden said:

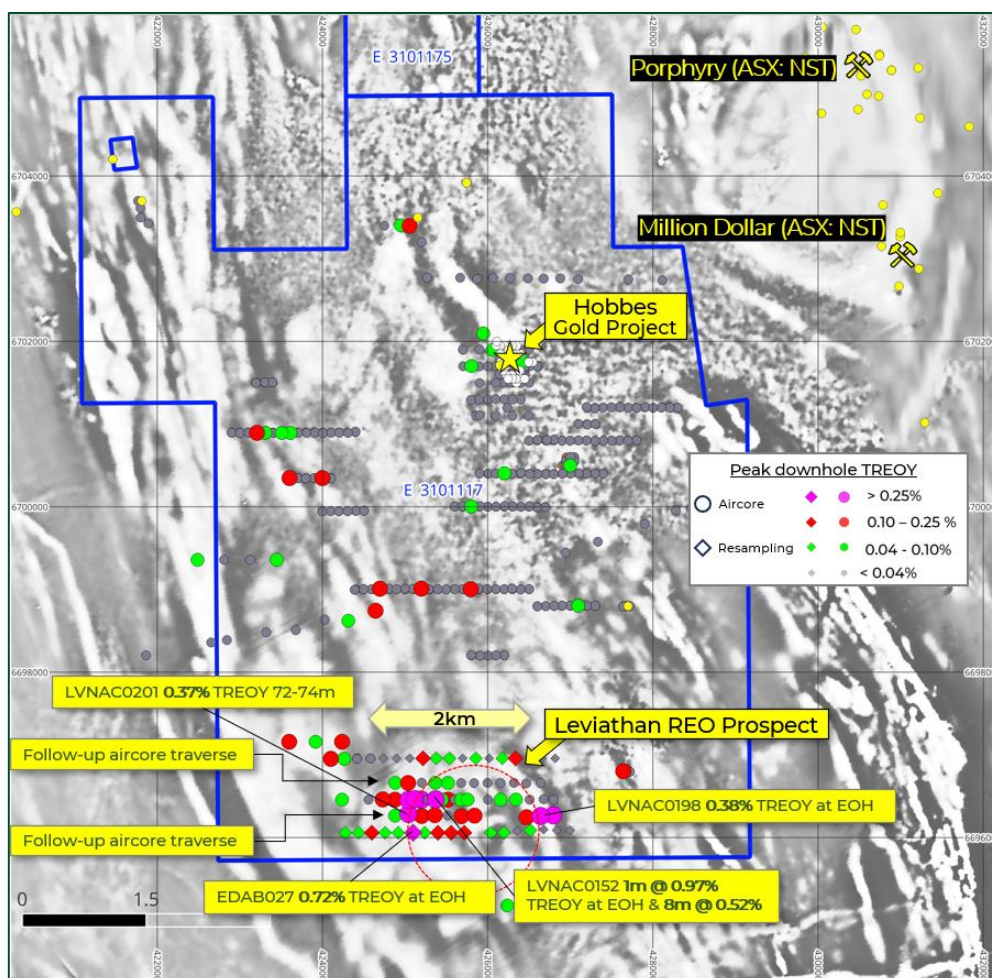
*"Leviathan offers an exciting opportunity associated with a local strongly magnetic intrusion that has delivered end of hole aircore results to almost 1% TREOY and widespread >0.1% anomalism. The Prospect shows significant grades compared to typical WA clay-hosted projects and the geological setting points to the potential for intrusive or vein-hosted mineralisation in underlying fresh rock. This shallow RC drill program will test the fresh rock profile - confirmation of grade continuity would be a significant exploration development and open the door to valuable high grade and/or volume intrusive styles".*

<sup>1</sup> TREOY is defined as the sum of CeO<sub>2</sub> + Dy<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + La<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub> + Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> + Sm<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub>. Note: TREOY values quoted for historical drillholes are on the basis of available analytical data and may not always be a full suite analysis.



## First Stage RC Drilling

Drilling is now underway at Leviathan, a soil-covered syenite intrusion located 5km south of the Hobbes Gold Deposit (Figure 1), with up to six shallow RC holes planned to test below high-grade TREOY results returned at EOH in reconnaissance aircore drilling<sup>2,3</sup>. Four of the holes are conditional on field geological observations.



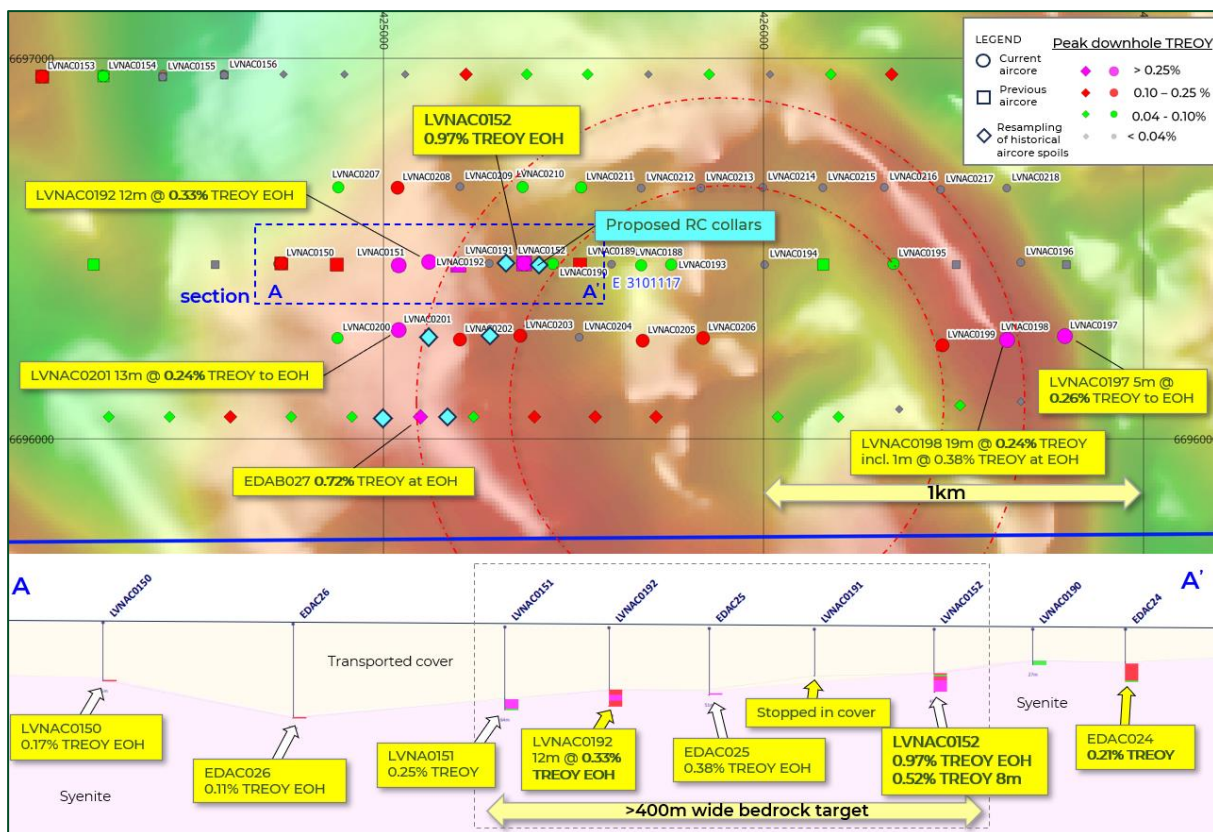
**Figure 1: Leviathan Prospect peak downhole rare earth oxide (TREOY) values in Solstice aircore and historical drilling<sup>2,3</sup> (only drillholes with full or partial suite rare earth oxide analysis are shown), on aeromagnetic imagery. Selected anomalous results from follow-up aircore drilling highlighted in yellow.**

Aircore drillholes typically only penetrated a few metres into fresh syenitic and felsic porphyry intrusive rock types below the transported cover profile. Despite the limited depth penetration, the drilling successfully confirmed a large area of highly anomalous TREOY values at or around EOH (Figure 2). Better grades are broadly coincident with magnetic portions of the intrusion and generally correspond to freshest (least weathered) intrusive, which is consistent with a previous X-ray diffraction (XRD) identification<sup>4</sup> of bastnaesite, a primary REO-fluorocarbonate mineral that is prevalent in global REO deposits and an important commercial source of REO.

<sup>2</sup> Refer to ASX: SLS 3 July 2023 'Aircore Drilling at Hobbes Delivers Rare Earth Oxide Results up to 0.97%, plus New Gold Anomalism'.

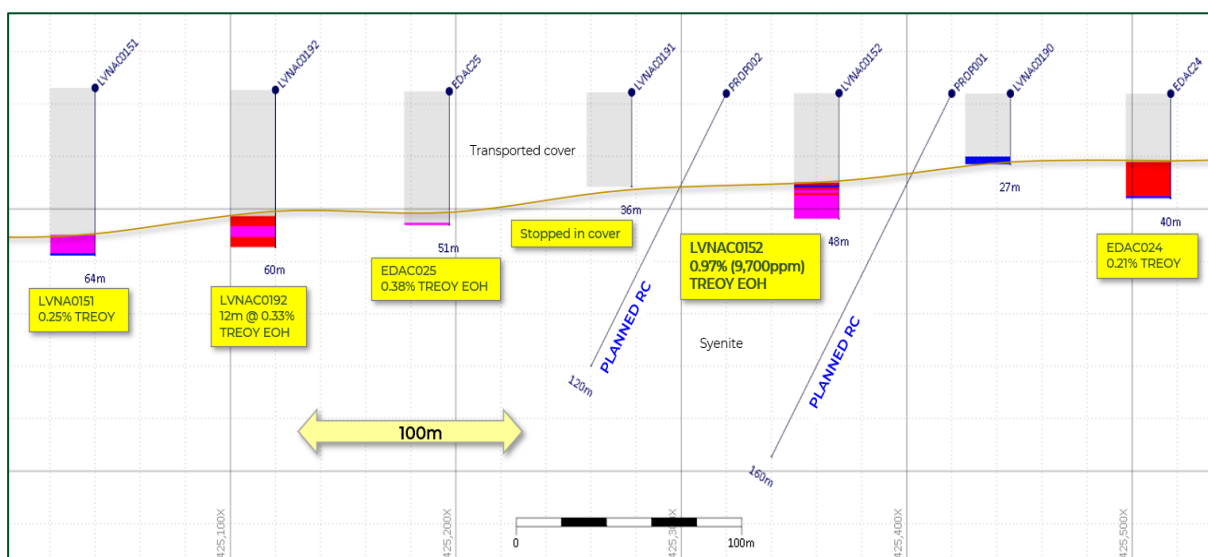
<sup>3</sup> Refer to ASX: SLS 19 September 2023 'Follow-up Drilling Confirms Large Intrusive Hosted REO Target at Leviathan'.

<sup>4</sup> Refer to ASX: SLS 14 August 2023 'Follow-up Aircore Drilling in Progress at High Grade Leviathan REO Prospect'.

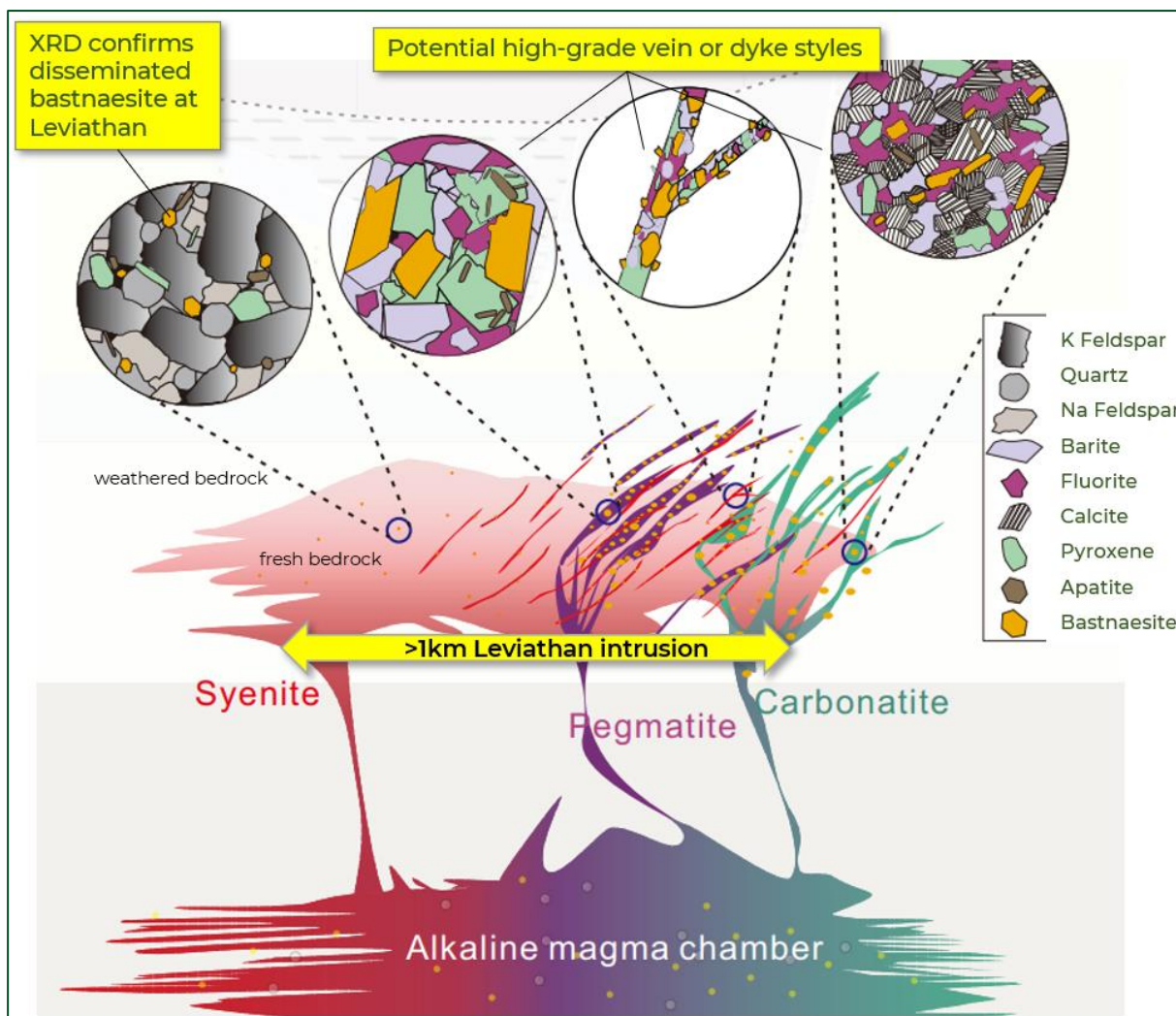


**Figure 2: Top: aeromagnetic image of the Leviathan Prospect showing ringed magnetic responses and peak downhole rare earth oxide (TREOY) values in Solstice aircore and historical drilling. Key aircore holes are labelled and proposed RC collars in blue. Bottom: cross section through a portion of the aircore program showing TREOY grades increasing toward fresh rock.**

The current shallow RC drill program (Figure 2) will test the rock profile below partial weathering (Figure 3). Confirmation of grade continuity into fresh rock would be a significant exploration development and allow targeting of valuable high grade and/or volume intrusive styles (Figure 4).



**Figure 3: Cross section through a portion of the Leviathan REO Prospect showing planned RC drilling around aircore drillhole LVNAC0152.**



**Figure 4: Schematic geological model for bastnaesite (REO mineral) dominant intrusive-hosted rare earth oxide deposits** (modified from Weng et al, Formation of the Maoniuping giant REE deposit: Constraints from mineralogy and in situ bastnäsite U-Pb geochronology. *American Mineralogist* 2022; 107 (2): 282-293). **Type deposits include the operating Mountain Pass in USA (Mineral Resources ~29Mt @ 8.9% REO<sup>3</sup>)<sup>5</sup>.**

Drilling activities at Leviathan will pause following the completion of this initial RC program. Laboratory results are expected in February and will be reported once interpreted and validated.

This announcement has been authorised for release by the Board.

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<sup>5</sup> Source: [https://mrdata.usgs.gov/ree/show-ree.php?rec\\_id=59](https://mrdata.usgs.gov/ree/show-ree.php?rec_id=59)



## ABOUT SOLSTICE MINERALS LIMITED

Solstice is a minerals exploration company with gold and base metal projects in the Eastern Goldfields of Western Australia (Figure 5). Solstice has been listed on the Australian Securities Exchange since 2 May 2022, when Solstice demerged from OreCorp Limited, and trades under the code 'SLS'. The company is well funded with no debt.

The Company's key projects are the extensive Yarri gold landholding (which includes the 177,000oz Hobbes Gold Project<sup>6</sup>), Ringlock Dam and the Ponton early-stage gold project.

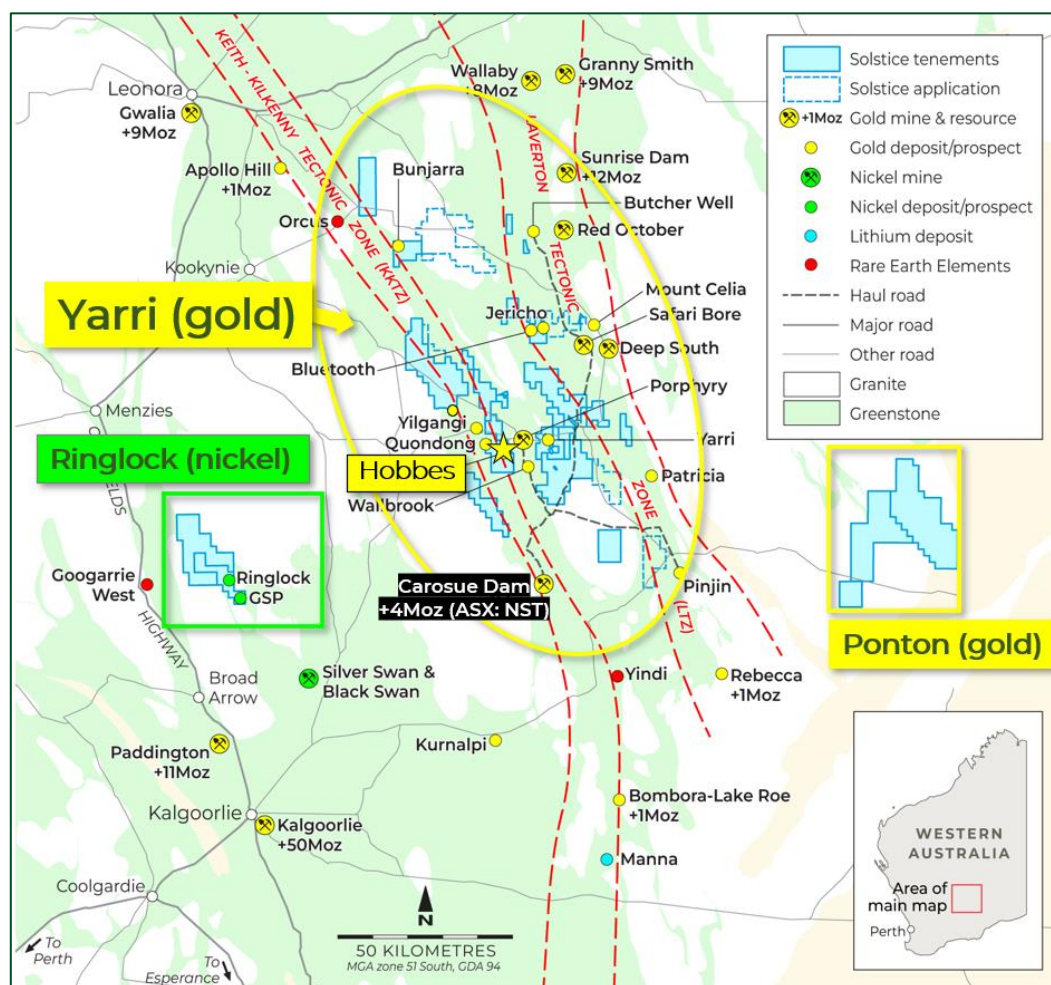


Figure 5: Solstice's Eastern Goldfields Projects

### About Hobbes Gold Project

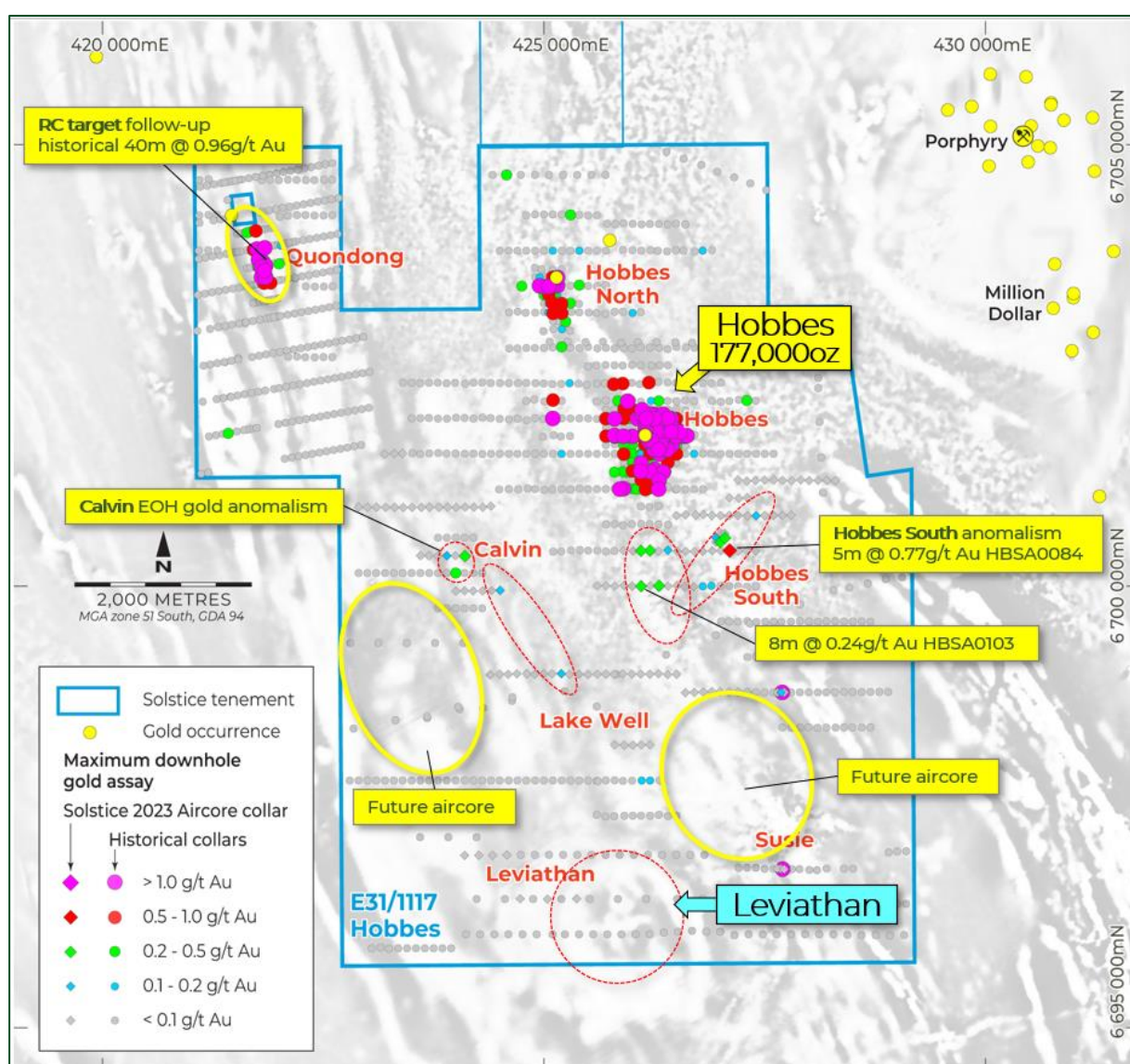
The Hobbes Gold Project is close to established mining and haul road infrastructure approximately 5km southwest of the Porphyry Mining Centre (Figure 6), where Northern Star operates open-pit and underground gold mines and is hauling material to its Carosue Dam mill located 36km to the south. The area hosts gold mineralisation in both felsic intrusive and vein settings, including Nexus

<sup>6</sup> Refer to ASX: SLS 22 March 2023 "Robust Maiden Gold Mineral Resource at Hobbes".



Minerals' 175,000oz<sup>7</sup> Crusader-Templar gold deposit approximately 10km to the southeast of Hobbes, and the Quandong and Yilgangi line of deposits to the northwest.

The Company recently completed a pit-constrained Mineral Resource Estimate (MRE) at the Hobbes Gold Project comprising 4.6Mt at 1.2g/t Au for 177,000 ounces of gold. High level economic criteria were applied to the resource which was reported at a 0.6g/t Au cut-off and constrained within an A\$2,500/oz optimised pit shell. The MRE has both supergene and fresh rock components, with supergene gold in a flat-lying blanket up to 1km in strike, 400m width and in places up to 30m thick. Fresh rock gold mineralisation sits in multiple west-dipping fault-controlled lodes in intermediate volcanic or metasedimentary rocks.



**Figure 6: Location map of Hobbes Licence on aeromagnetic image, showing peak downhole gold assays<sup>2,3</sup>, the location of the Hobbes MRE, and the Leviathan REO Prospect.**

<sup>7</sup> Refer to ASX: NXM 26 April 2023



## Forward-Looking Statements

This announcement may contain certain forward-looking statements, guidance, forecasts, estimates, prospects, projections or statements in relation to future matters that may involve risks or uncertainties and may involve significant items of subjective judgement and assumptions of future events that may or may not eventuate (**Forward-Looking Statements**). Forward-Looking Statements can generally be identified by the use of forward-looking words such as "anticipate", "estimates", "will", "should", "could", "may", "expects", "plans", "forecast", "target" or similar expressions and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs. Indications of, and guidance on future earnings, cash flows, costs, financial position and performance are also Forward-Looking Statements.

Persons reading this announcement are cautioned that such statements are only predictions, and that actual future results or performance may be materially different. Forward-Looking Statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change, without notice, as are statements about market and industry trends, which are based on interpretation of current market conditions. Forward-Looking Statements are provided as a general guide only and should not be relied on as a guarantee of future performance.

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## Previously Reported Results

The information in this announcement that relates to Exploration Results and Estimates of Mineral Resources is extracted from the ASX announcements (**Original Announcements**), as referenced, which are available at [www.solsticeminerals.com.au](http://www.solsticeminerals.com.au). Solstice 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 Estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the Original Announcements continue to apply and have not materially changed. Solstice confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original announcement.