



# Superior Resources Limited

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**Tick Hill Surface Gold Project  
METALLURGICAL TEST WORK: POSITIVE RESULTS RECEIVED**

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- Preliminary metallurgical test work indicates significant water-soluble gold content. 11-15% of gold contained in the Tailings Storage Facility (TSF) already in solution.
  - Cyanide leach test work on washed tails residue re-ground to <15um, reported 95% – 98% extraction (recovery) of contained gold.
  - Test work confirms that gold contained in Tick Hill tailings samples, highly amenable to cyanide leaching.
  - Further metallurgical test work underway to determine optimal re-grind size to balance gold extraction and energy input.
  - Head grades for bulk samples calculated at 1.27 g/t Au for the project's eastern tailings paddock and 0.71 g/t Au for western tailings paddock, reconciling with estimated average grades of 1.33 g/t Au and 0.77 g/t Au from bulk drill samples.
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Superior Resources Limited (**ASX Code: SPQ**) (**Superior** or the **Company**) confirms the receipt of results from the first stage metallurgical test work conducted on the Tick Hill tailings.

The results further strengthen the earlier gold assay results as well as the prospects of commencing a tailings re-processing operation at Tick Hill. Notable findings from the metallurgical testing include:

- an unusually high proportion of the total gold contained in the tailings samples is already in solution and may bypass a substantial part of a processing circuit;
- cyanide leaching of re-ground (to <15um) and washed tailings material reported 95% – 98% recovery of contained gold; and
- the gold contained in the TSF is highly amenable to cyanide leaching.



## Metallurgical Test Work

Two bulk samples, one from each of the tailings paddocks, were compiled by riffle splitting exploration drill samples from the infill drilling program undertaken by joint venture partner, Diatrema Resources Limited, at the Tick Hill Gold Project in September 2015. For the purposes of this first stage metallurgical test work, samples from a single N-S oriented drill line through the centre of each tailings paddock were composited to give an approximate 50kg bulk sample (see Figure 1). Comp 1 is from the eastern tailings paddock and Comp 2 from the western tailings paddock.

As the presence of cyanide had been noted in previous environmental sampling of the tailings material, a 20kg sub-sample of the bulks was re-pulped with water for 24 hours and then pressure filtered. Analysis of the solids and solution returned assays showing gold distribution in solution of 11% for Comp 1 and 15% for Comp 2.

By combining assays from the re-pulping work with earlier assays of the as-received bulk sample, a calculated head grade of 1.27 g/t Au for Comp 1 and 0.71 g/t Au for Comp 2 can be calculated. This correlates well with mass weighted average grades of the included drill samples of 1.33 g/t Au for Comp 1 and 0.77 g/t Au for Comp 2.

Cyanidation leach test work on the washed tailings residue was undertaken, with generally low gold extraction rates of 24% for Comp 1 and 32% for Comp 2. However, the low extraction is considered consistent with 'as-received' tailings material. Sizing analysis indicated that gold distribution is weighted towards the coarser fractions of the tailings material, with 70% of the gold contained in the +75µm fractions of both Comp 1 and Comp 2.

An ultra-fine re-grind of the samples was then undertaken, with Comp 1 returning 95% gold extraction from a 24 hour leach on a sample with a p80 of 14 µm and Comp 2 returning 98% gold extraction from a 24 hour leach on a sample with a p80 of 11 µm. For both samples very high levels of gold extraction were achieved within 4 hours (89% and 94% respectively).

The work completed to date on the Tick Hill Tailings Project indicates that very high levels of gold extraction can be achieved by cyanide leaching and this coupled with a significant proportion of water soluble gold, provides encouragement for efficient processing of the Tick Hill tailings material. Further metallurgical work is now being undertaken to determine an optimal grain size to balance leach extraction rates with energy requirements for regrinding of the tailings.

Managing Director Mr Peter Hwang said: *"The better than expected levels of gold recovery together with indications of a simple extraction process, have reinforced the determination of Superior's Board to expedite the assessment process and hopefully realise early cash flow from the project".*

A handwritten signature in black ink, appearing to read 'Peter Hwang'.

**Peter Hwang**  
Managing Director

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Figure 1. Locations of drill holes from which composited bulk samples were obtained for metallurgical testing.

*The information in this report, insofar as it relates to Exploration Results is based on information compiled by Mr Ian Reudavey, who is a full time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of 'The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

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