

## CSIRO and Rumble Collaboration update on Braeside Project, Pilbara Western Australia

Rumble Resources Limited ("Rumble" "RTR" "the Company") is pleased to provide an update on its collaborative research and development project with CSIRO (Commonwealth Scientific and Industrial Research Organisation) into the alteration mineral footprints on the Company's Braeside Project in the Pilbara Region of Western Australia.

### Phase 1 – Completed - Mineral Footprint Mapping Project and Porphyry Related Model Confirmed.

Very significant mineralisation and alteration trends delineated by RC drilling completed in October 2018 by Rumble, along with the mineral footprint mapping completed by CSIRO, has resulted in the advancement and understanding of the porphyry to epithermal deposition model. Future targeting using the porphyry related model has the potential to discover camp scale multi-commodity deposits.

The study encompassed the entire area (204 km<sup>2</sup>) of the main tenement (E45/2032). The tenement is approximately 40km by 7km. The basis for the mapping is a set of different mineral map products (e.g. mica/clay abundance, chlorite abundance) generated by CSIRO using multispectral spaceborne data with 7.5m ground resolution (WorldView-3).

The main conclusions drawn by Rumble based on the CSIRO geological remote sensing, geophysics and geochemistry interpretation as well as other observations made by the company identified:

- Distinctive metal zonation trends normal to the main structures (NNW trending) related to the mineralisation occur throughout the tenure. Elevated Cu - Au occurs along the western side of the tenure whilst Zn, Pb and Ag replaced the Cu – Au towards the east with In and Hg occurring along the central and eastern portion of the tenure.
- Variation in alteration intensity and pervasiveness is associated with the metal zonation west to east across the tenure. Wide zones of barium K feldspar with magnetite and actinolite alteration have been observed in association with the zone of increased Cu – Au anomalism. Traversing further to the east highlighted changes in alteration (see image 2).
  - Eastern zones are wide zones (up to 70m) of alkalic feldspar (Ba – K) with silica and intense sericite alteration. Sulphide zones (pyrite – galena – sphalerite) zone and disseminated chalcopyrite with low level gold occurs within the broad feldspar haloes. Magnetite and calcic alteration (actinolite) occur within the broad feldspar haloes.
  - Central zones consist of moderate width zones of K feldspar (low barium) with silica and sulphides.
  - Western zones are silica – sulphide.
  - All zones have extensive chlorite alteration haloes.
- In general, the deposition level decreases (metal deposits closer to the surface) from east to west. The inference being that the source of the metals (porphyry) is closer to the surface along the eastern portion of the tenement. The increase in copper, gold along with magnetite and actinolite suggests the prospective portions related to intruding porphyry (top of the carapace zone above the porphyry) is close to surface and represents high priority drill targets.



### Rumble Resources Ltd

Suite 9, 36 Ord Street,  
West Perth, WA 6005

T +61 8 6555 3980

F +61 8 6555 3981

[rumbleresources.com.au](http://rumbleresources.com.au)

### ASX RTR

### Executives & Management

Mr Shane Sikora  
Managing Director

Mr Brett Keillor  
Technical Director

Mr Matthew Banks  
Non-executive Director

Mr Michael Smith  
Non-executive Director

Mr Steven Wood  
Company Secretary

## Phase 2 – Commenced – Detailed Study of the Braeside Base Metal Mineralisation.

The successful conclusion of Phase 1 has enabled Rumble to progress to Phase 2 in collaboration with CSIRO. Through the Innovation Connections element of the Australian Government's Entrepreneurs' Programme, Rumble will receive a dollar-matched grant of \$50,000 for the Phase 2 project with CSIRO. Innovation Connections helps drive industry-led collaboration between Australian companies and the research sector.

In **Phase 2**, Rumble and CSIRO will investigate:

- 1) The relationship between the alteration mineral assemblages and the mineralization as well as the paragenesis of the ore.
- 2) The source of the mineralising fluids.
- 3) The age of the Pb-Zn mineralisation.

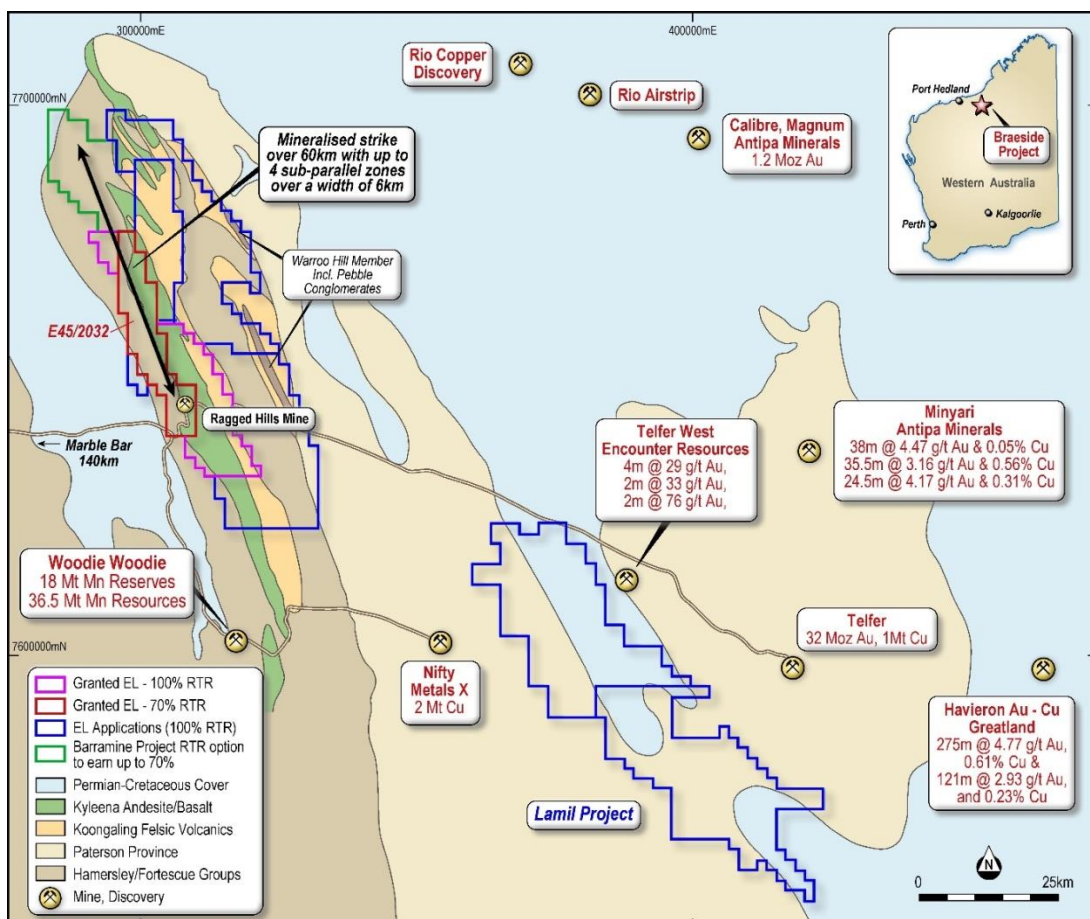
This vital R&D will help Rumble Resources confirm the identified mineral system and further help them in targeting the most prospective areas.

CSIRO's research will analyse selected samples from the drilling chips acquired by Rumble resources using state-of-the art mineral characterisation facilities.

The study objectives are to:

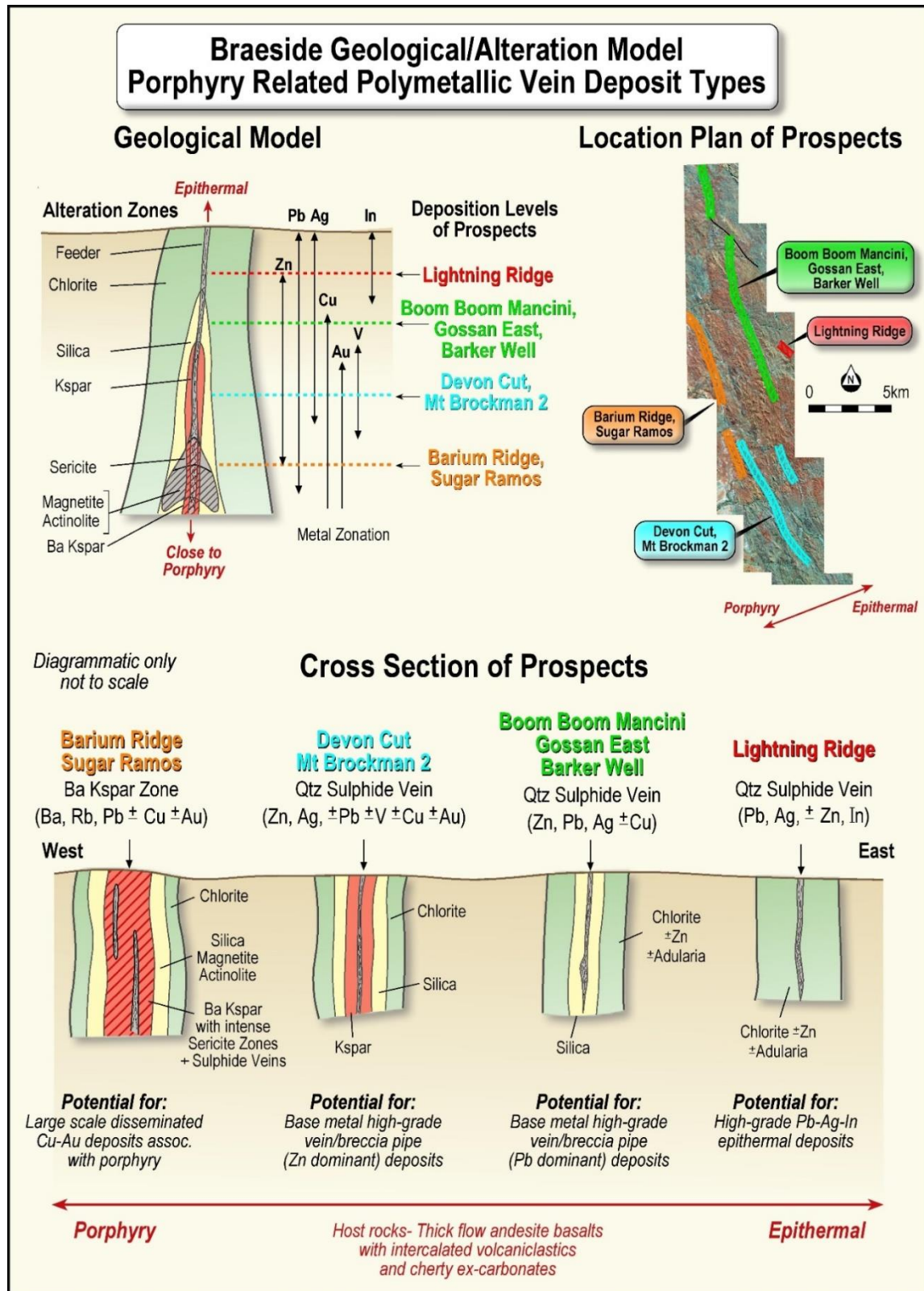
- Analyse drill chips of the altered and mineralised rocks to derive mineral maps revealing relationships between the alteration and mineralisation as well as identify suitable samples for fluid inclusion work, dating and stable isotope work.
- Analyse a suite of fluid inclusions to derive temperature, salinity, and composition of the mineralising fluids.
- Analyse the isotopic composition of the sulphide minerals to derive age of the mineralisation.
- Analyse the isotopic composition of the quartz grains associated with the mineralisation to confirm the source and timing of the mineralising fluids.

The study is expected to be completed in 5 months, running parallel with Rumble's current exploration program at the Braeside Project.



**Image 1.** Location of Braeside Project

Rumble is committed to further enhancing the understanding of the Braeside base metal mineralisation through the collaborative research and development initiative with CSIRO. Rumble believes the existence of a near complete porphyry to epithermal base metal system in Archaean rocks is a very rare opportunity to complete a variety of studies and hypothesis which may lead to developing new exploration models that may aid in the discovery of economic deposits in older geological terranes.



**Image 2. Braeside Geological/Alteration Model**



## Overview of the Geological Deposition Model (Image 2).

The geological deposition model presented in image 2 is the culmination of interpretation of RC drilling geology, alteration and mineralization in conjunction with spectral mapping (mineral mapping) by CSIRO. The details of the geological deposition model are described in the **ASX announcement dated 27<sup>th</sup> November 2018 – Braeside Project Results – Regional Scale Base Metal System**.

In summary, Rumble has defined four major NNW trending polymetallic structural zones over a strike of 35km and an area 6km wide. The four zones are regionally extensive fractures/feeders associated with an underlying porphyry system.

Significant base metal mineralization has been discovered within the four structural trends including:

- 5m @ 8% Zn, 0.35% Pb
- 6m @ 6.16% Pb
- 3m @ 9.16% Pb, 0.43% Zn
- 105m @ 0.78% Pb + Zn
- 4m @ 5.42% Pb, 0.54% Zn 19.7 g/t Ag
- 4m @ 6.35% Pb, 14.7 g/t Ag

Wide zones of barium rich potassium feldspar discovered have returned:

- 58m @ 2.32% BaO
- 86m @ 1.96% BaO
- 26m @ 3.84% BaO, 0.18% Pb

Shane Sikora  
Managing Director

- ENDS -

For further information visit or contact [enquiries@rumbleresources.com.au](mailto:enquiries@rumbleresources.com.au).

### About Rumble Resources Ltd

Rumble Resources Ltd is an Australian based exploration company, officially admitted to the ASX on the 1st July 2011. Rumble was established with the aim of adding significant value to its current gold and base metal assets and will continue to look at mineral acquisition opportunities both in Australia and abroad.

### Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Brett Keillor, who is a Member of the Australasian Institute of Mining & Metallurgy and the Australian Institute of Geoscientists. Mr Keillor is an employee of Rumble Resources Limited. Mr Keillor has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 Keillor consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.