KING RIVER COPPER LIMITED

# QUARTERLY ACTIVITIES REPORT 31 DECEMBER 2017

---

**Australian Securities Exchange Announcement** **31 January 2018**

---

## SUMMARY


- 2130m RC drill programme completed at Mt Remarkable with high grade gold intersections on the Trudi vein, including **11m at 27.9g/t Gold (Au)**.
- Positive results to the Vanadium Concept Study:
  - Magnetite-ilmenite concentrate produced assayed 2.15% $V_2O_5$, 12.72% $TiO_2$ and 71.42% $Fe_2O_3$.
  - Hydrochloric acid leach of the concentrate recovered up to 98.9% V, 98.0% Fe and 97.7% Ti.
  - Thermal hydrolysis generated a high purity titanium dioxide product that assayed **99.5% $TiO_2$**.
  - Chemical precipitation generated a vanadium pentoxide product assaying **95.5% $V_2O_5$**.
- Update to the fluorite resource planned due to an increase in acid grade fluorspar prices.


During the December quarter 2017 King River Copper Ltd (ASX:KRC) reported on drilling programmes on its Mt Remarkable Project and the vanadium-titanium hydrometallurgical testwork at Speewah, both located in the East Kimberley of Western Australia (Figure 1).

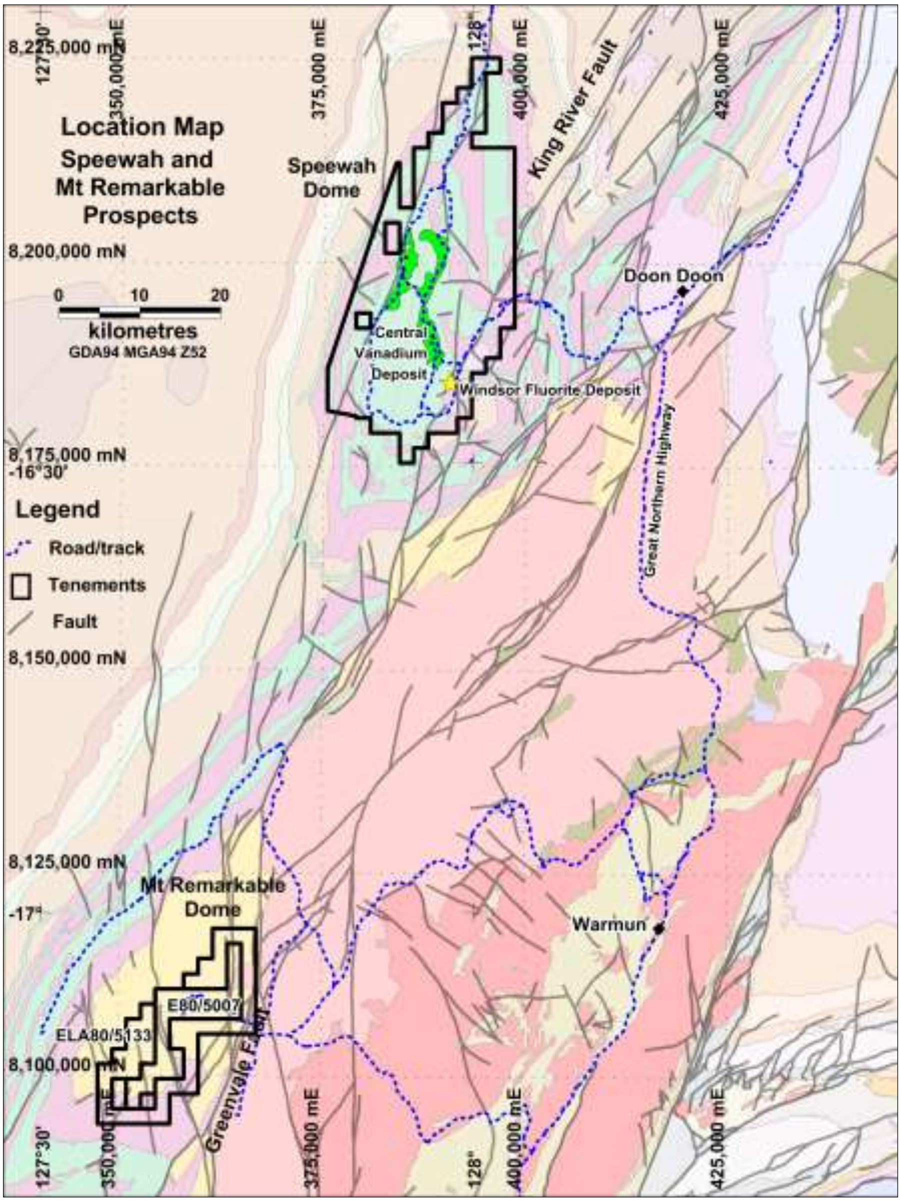


*Figure 1: Location of the Mt Remarkable and Speewah projects on a regional geological map*

Mt Remarkable Drilling Results

KRC completed two Reverse Circulation ("RC") drill programmes totaling 2130m at Mt Remarkable located 200km south of Kununurra in Western Australia. Drill results were reported on the 29th October 2017, 10th, 21st and 27th November 2017 and 20th December 2017.

The drilling results have now extended the main Trudi vein system to a potential strike length of nearly 1km with mineralised intersections obtained 600m to the east and 100m to the west of the original historical drilling. High grade mineralization (+5g/t) was also returned at the eastern part of the Gemma Veins, adjacent to areas of structural complexity with large vein widths. Gold mineralisation has also been intersected at other locations, including at the Grahame vein, an area west at the Catherine vein, and an intersection of mineralised veining near previously reported 30.8g/t Au rock chip sample.

*Trudi Infill and Confirmation Drilling*

Drilling at the Trudi vein has confirmed historical high grade drill intersects (such as historic intersection of 5m at 15.4g/t, see KRC:ASX 5 April 2016 release) with recently reported scissor hole returning 11m at 27.9g/t Gold (Au) from RC hole KMRC026 and also with high grade results from two twin holes which returned 5m @ 4.11g/t Au inc 1m @ 16.9g/t Au (KRRC0027) and 4m @ 5.72g/t Au inc 1m @ 15.95g/t Au (KRRC0025 - previously reported 27/11/27). Hole KMRC006, drilled to test west of these intersects, successfully intersected high grade mineralisation returning 3m @ 3.1g/t Au inc 1m @ 8.8g/t Au. The cross section (Figure 2), map (Figure 3) and long section (Figure 4) summarises the Trudi drilling results.

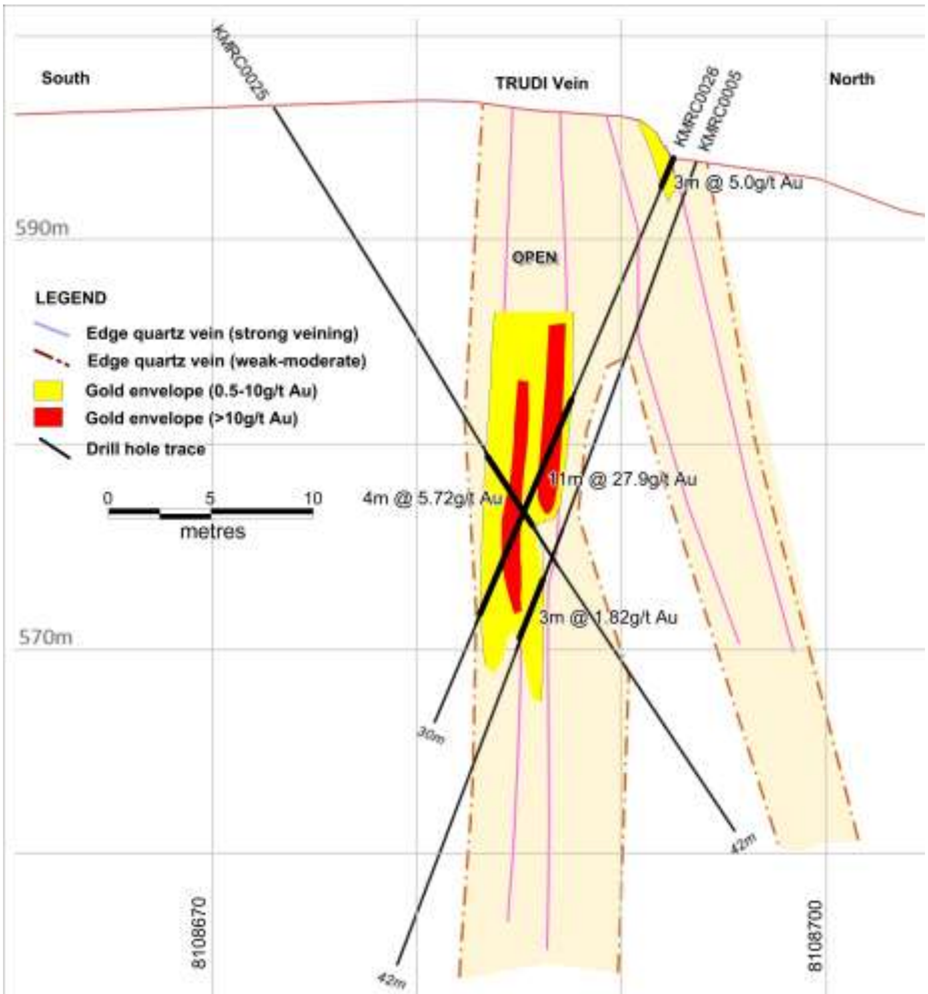


**Figure 2: Cross section at 358955E on the Trudi Vein at the historical high grade site.**

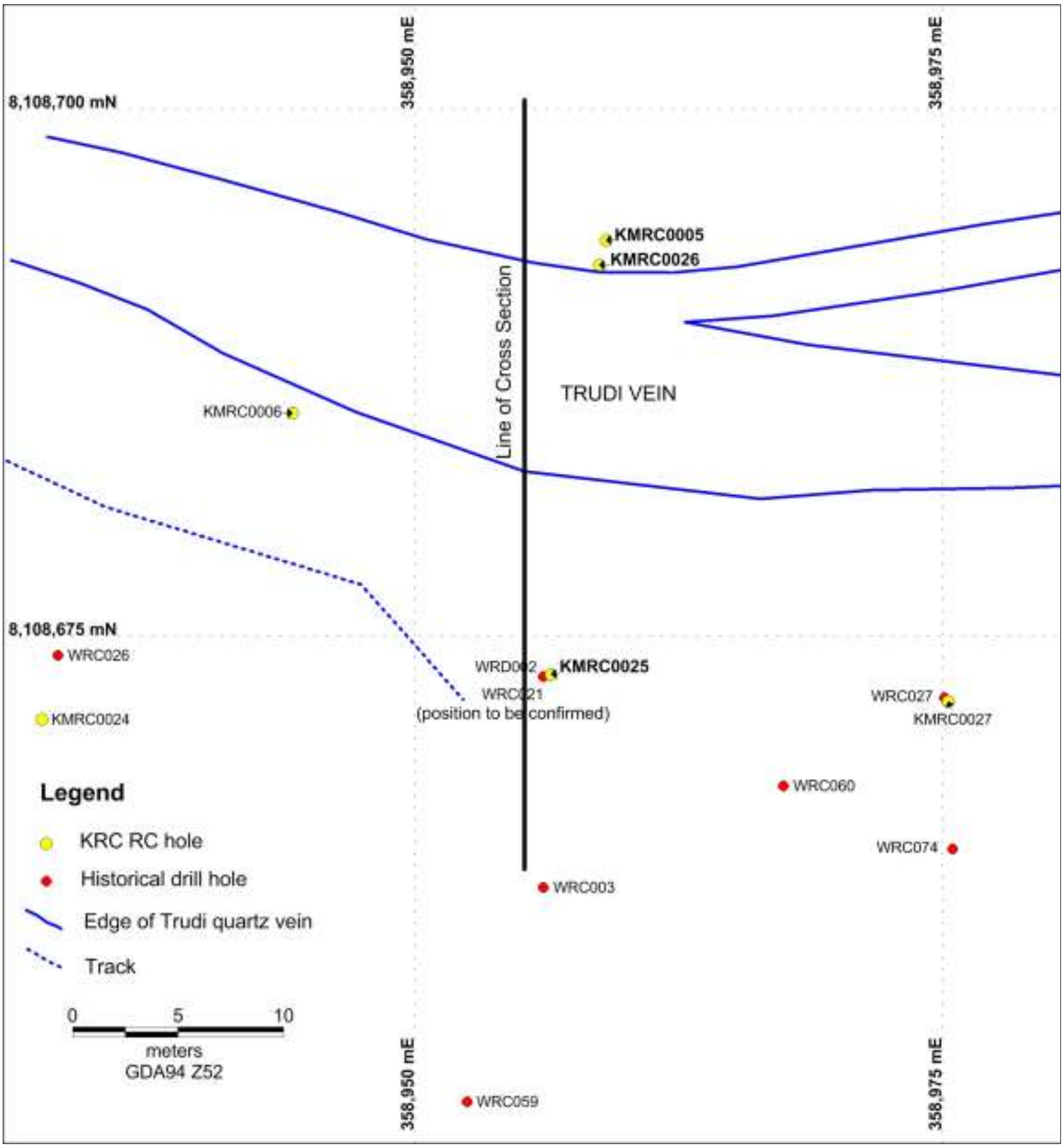


**Figure 3: Drill collar plan in the scissor hole area of the Trudi vein showing the north-south cross section line at 358,955E**

The east-west trending subvertical Trudi vein structure is up to 12m wide. It comprises zones of massive quartz-adularia-chlorite veins and zones of weak-moderate veining within brecciated, fractured and altered wallrocks. The highest gold grades are associated with adularia rich massive veins (Figure 5) and appear to be associated with the widest part of the vein. The vein is gold rich with some silver, and has low copper (117-2650ppm Cu) and very low arsenic (<4ppm As). The high grade intersection in KMRC26 has two sub-parallel, subvertical very high grade zones that appear to be stacked in an *en echelon* pattern. A similar pattern was observed in surface exposures along the Trudi vein.

The confirmation drilling was done to test the reliability of historical data and to provide material for petrographic study. During this work, field observations and measurements revealed that some of the historical holes were incorrectly positioned/labelled in the public database, and also suggested that the available down hole survey data is incomplete. These localized historical errors caused some difficulties in the positioning of the new scissor and twin holes.

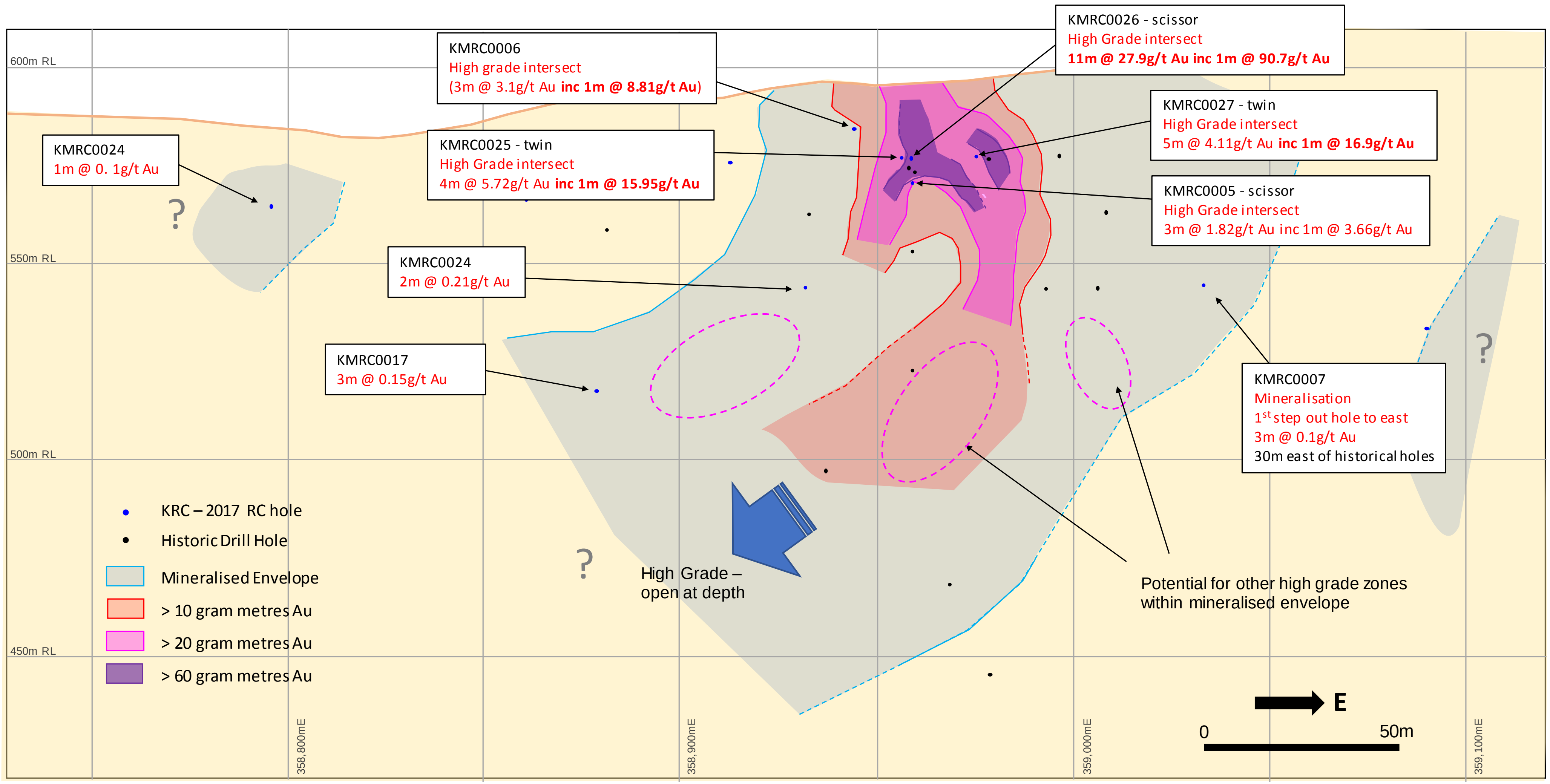


***Figure 4 – Long Projection of the Trudi Vein main prospect area showing 2017 drill results and interpretive contours of mineralisation in gram-metres***

| Interval m | 26-27 | 25-26 | 24-25 | 23-24 | 22-23 | 21-22 | 20-21 |
|---|---|---|---|---|---|---|---|
| **Vein Intensity** | Trace | Trace | Trace | Weak | Weak | Moderate | Strong |
| **Vein Minerals** | quartz chlorite | quartz chlorite | quartz chlorite | quartz chlorite adularia | quartz chlorite adularia | quartz chlorite adularia | adularia quartz chlorite |
| **Gold g/t Au** | 0.034 | 0.071 | 0.056 | 1.98 | 3.78 | 14.65 | 59.1 |

**Figure 5: KMRC26 rock chips from 20-27m showing quartz vein intensity, mineralogy and gold grade.**

*Trudi Extensional Drilling*

Extensional drilling at the main Trudi prospect has successfully intersected significant, mineralised veining and structure one hundred metres to the east and west of historic drilling. Based on mapping and historic data it was uncertain if the Trudi vein continued to the east due to hilly topography (which obscured outcrop) and small displacement faults offsetting the vein to the north, however, the two oblique RC step out holes, KMRC007 and KMRC028, both intersected significant quartz-adularia veining with grades up to 0.1g/t Au (Figures 6 and 7) leaving exploration potential open to the east.

RC drilling 600m east and along strike of the main historic Trudi prospect intersected significant mineralisation and quartz-adularia veining with 4m @ 0.95g/t Au including 1m @ 3.36g/t Au (KMRC001). This intersection reveals a very significant strike length of untested, potentially mineralized vein (Figure 6). Given that the Trudi vein is mineralized at both ends of its known extents it is not unreasonable to assume potential for multiple high grade shoots to occur along its strike length (or even a larger main deposit).

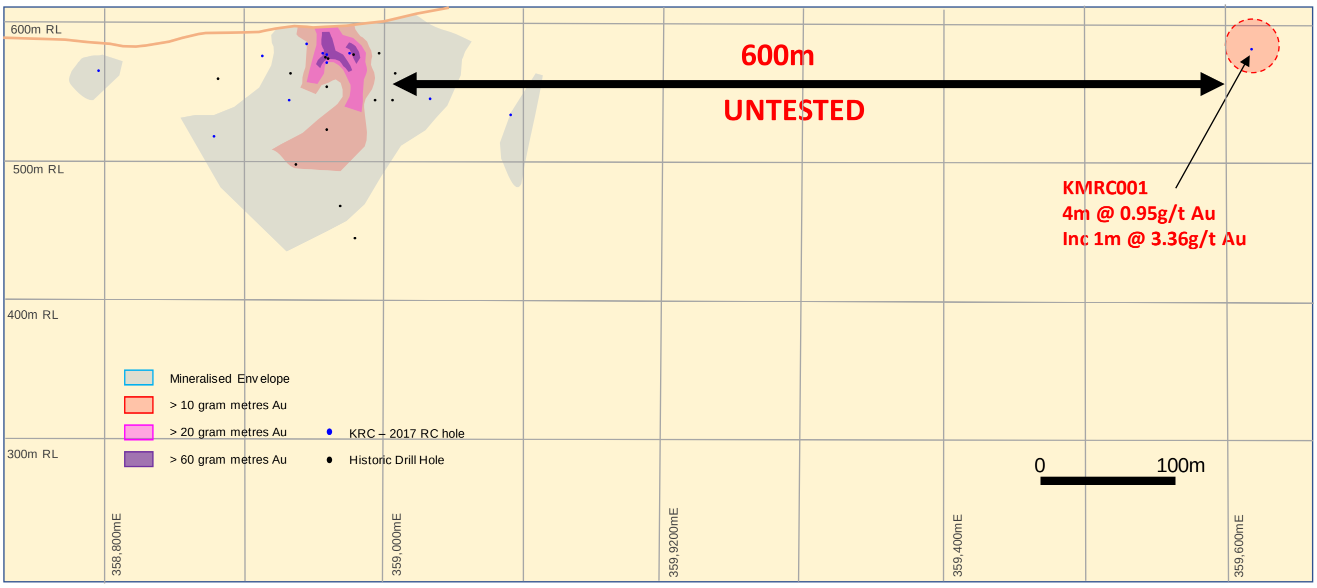


*Figure 6 Long Projection of the known extents of the Trudi Vein with 600m of untested strike east of the main Trudi area*

*Other Results*

Best drill results from other veins include significant mineralisation intersected on the Grahame vein (KMRC013), extension to known mineralization to the west at the Catherine vein (KMRC018) and intersection of mineralised veining (KMRC012) near previously reported 30.8g/t Au rock chip sample (ASX announcement 30/8/17). Also high grade mineralisation (+5g/t) was returned in KMRC011 at the eastern part of the Gemma Veins (proximal to areas of structural complexity with large vein widths) indicating potential for the discovery of high grade pods on this and other vein sets at the Mt Remarkable Project (Figures 7 and 8).

The company is now reviewing the geological information obtained during 2017 and is planning a petrological, geophysical and 3D structural review during the wet season to assist in identifying possible litho-structural and geochemical controls on high grade mineralization and to further develop its exploration model for drilling in 2018. Potential exists for the discovery of multiple high grade mineralized zones along the now increased extents of the Trudi vein (~1km of known strike), discovery of high grade mineralisation on any of the other mineralised veins (as shown by recent high grade results at the Gemma Veins) and the discovery of new mineralised veins.

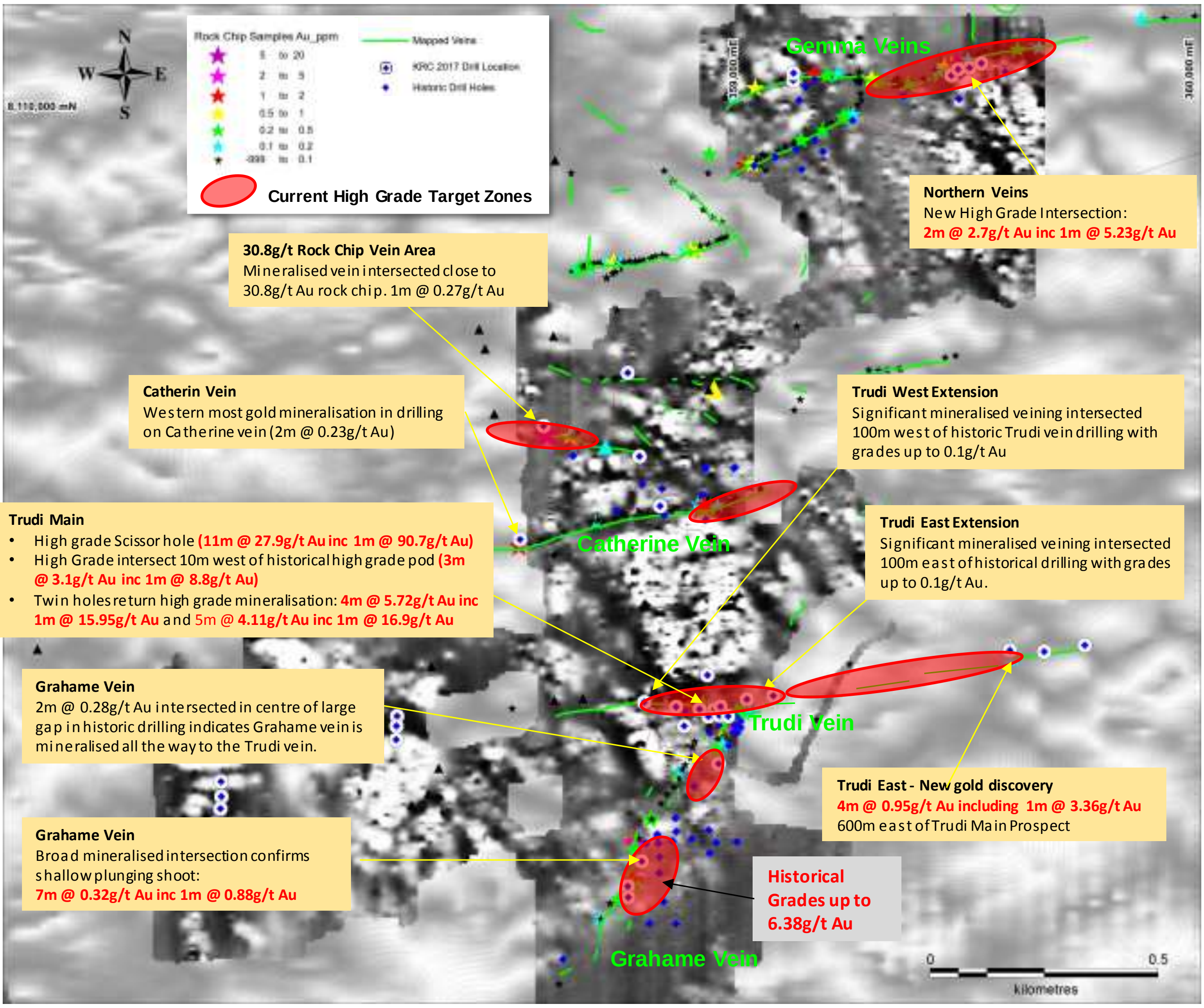


***Figure 7: 2017 Drill results summary with current high-grade target areas; over airborne and ground magnetics***

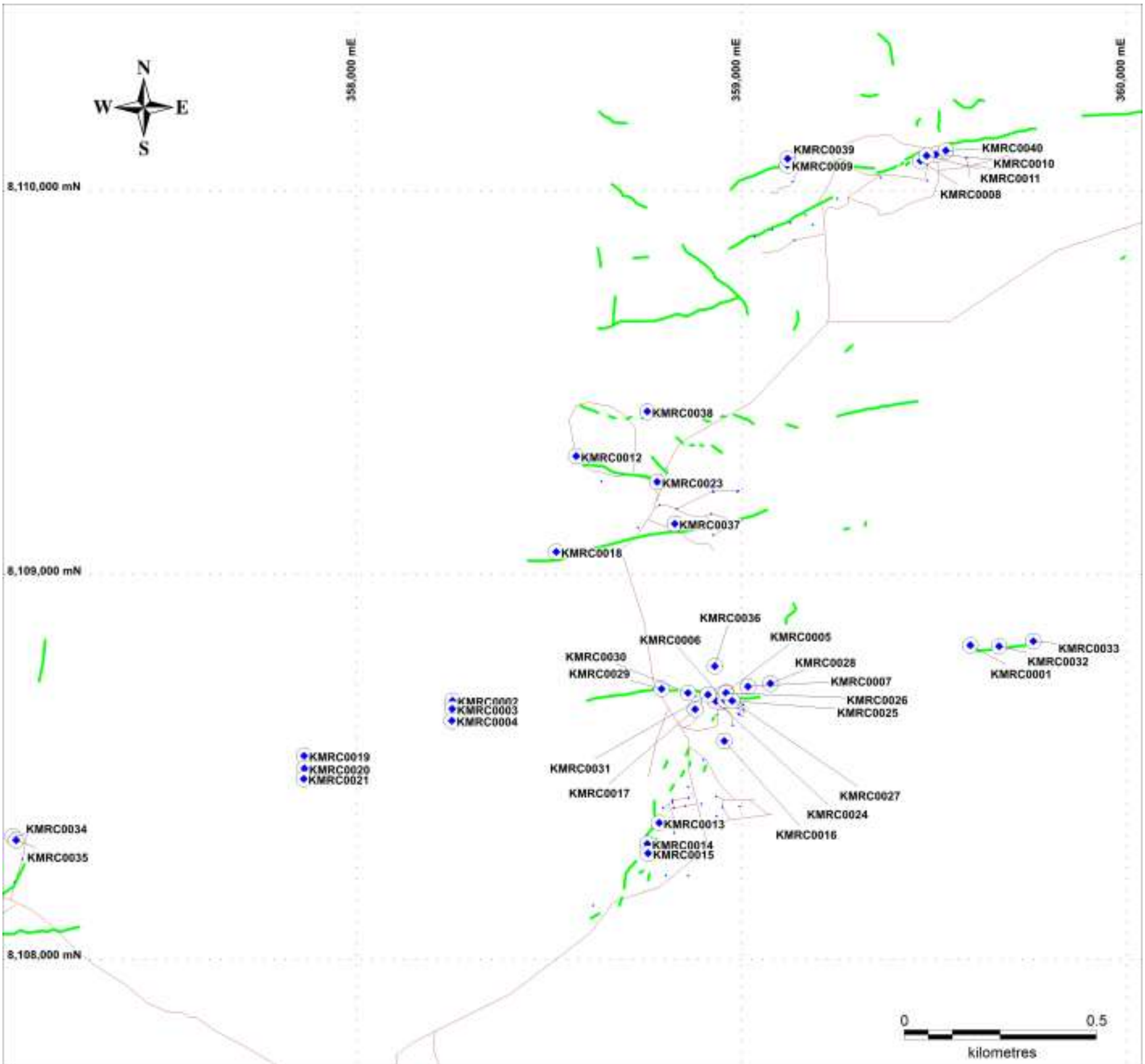


***Figure 8: Location of KRC 2017 RC drill holes showing quartz veins (green lines) and historical drill collars (blue dots).***

*2018 Exploration Plans*

KRC intends to recommence exploration at the Mt Remarkable Project as soon as access tracks/crossings are passable after the wet season. Once light vehicle access is possible reconnaissance exploration will commence to identify new mineralized vein sets as well as identify further extensions of the Trudi vein. Also, down hole survey work will be completed to provide accurate positioning of historic Trudi drill intersections which will greatly assist with geological interpretation and the design of infill drill holes, as well as improve the quality of any resource modeling in the future.

Drilling is planned to commence early May, once the risk of cyclone activity has cleared and access tracks are passable to heavy vehicles, with a phase of infill and extensional drilling at the high grade mineralisation on the Trudi vein (Figure 9).

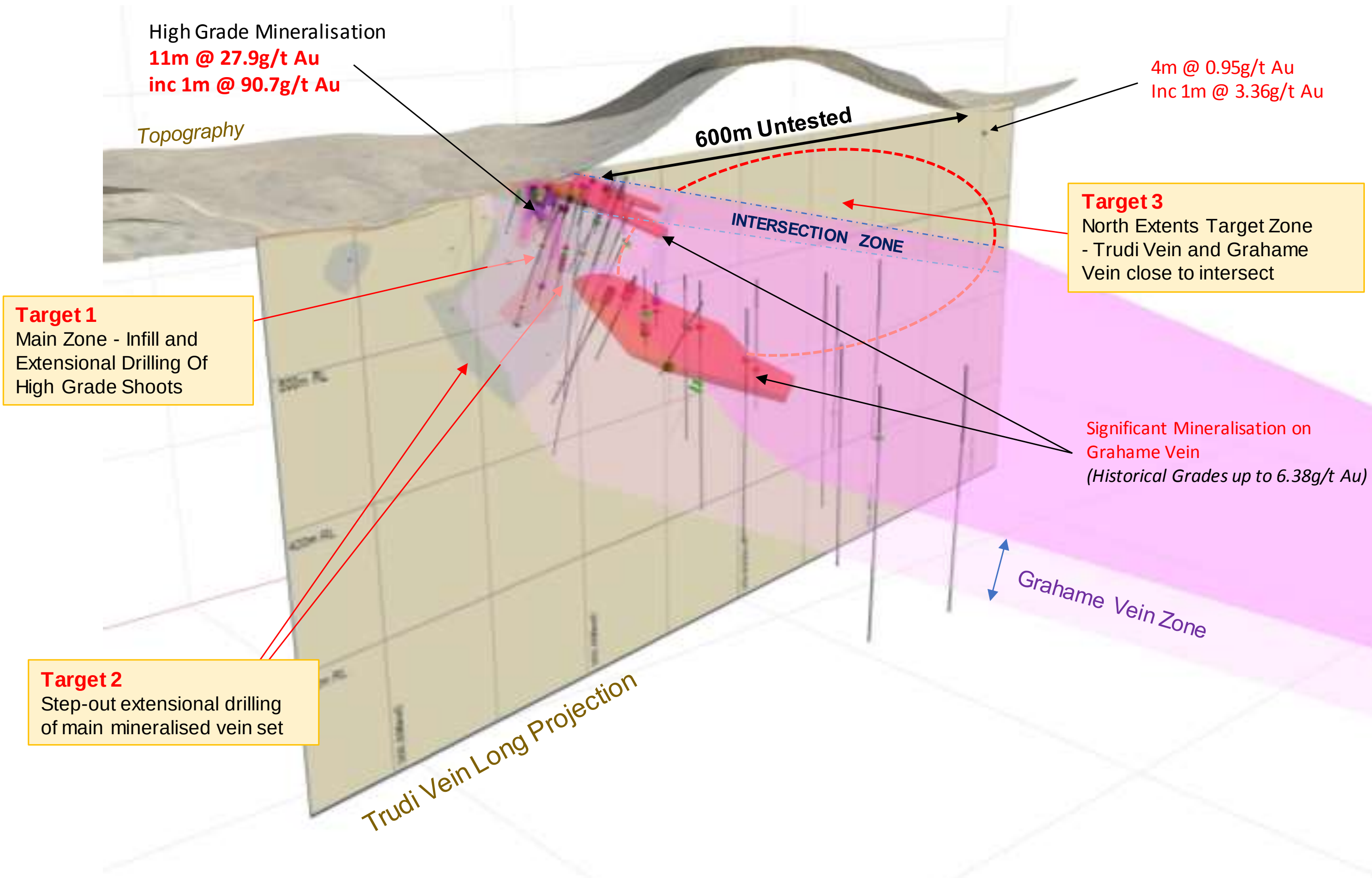


**Figure 9: 3D view of the interpreted Trudi-Grahame vein intersection showing inferred mineralised zones based on the Trudi long section (Figure 2) and drill target areas**

KING RIVER COPPER LIMITED

## Vanadium Concept Study

As previously reported, KRC is undertaking a Vanadium Concept Study into the production of high purity Vanadium Pentoxide (99.5-99.9% $V_2O_5$) and Titanium Dioxide (>99% $TiO_2$) products from the large Central vanadium deposit at Speewah (KRC ASX: 21 April 2017). The major objective of the Concept Study is to identify a base framework for a new Scoping Study into the production and marketability of vanadium electrolyte products used in vanadium flow batteries (VFB) and titanium products used in master alloys of Al-V-Ti.

During the quarter hydrometallurgical testwork was undertaken by TSW Analytical on a magnetite-ilmenite concentrate previously produced by Nagrom the Mineral Processor (KRC ASX announcement 21 August 2017). This concentrate assayed 2.15% $V_2O_5$, 12.72% $TiO_2$ and 71.42% $Fe_2O_3$, the highest vanadium grade of all Australian deposits.

Acid Microleach Testwork

TSW Analytical completed 27 diagnostic microleach tests on 5g samples of the vanadium concentrate using hydrochloric acid (HCl) as the leaching agent at three different acid strengths (4, 6 and 10 mol/L), three leach temperatures (40, 70 and 90°C), three pulp densities (5, 10 and 20%wt/wt), with a set leach time of 3 hours and stirred continuously. Vanadium (V), Titanium (Ti) and Iron (Fe) extraction recoveries were recorded (refer KRC ASX announcement 9 October 2017). The following represents a summary of the observations and outcomes of these tests:

- Vanadium and Titanium are effectively leached between 6 and 10 mol/L of HCl.
- At 70 and 90 $^{O}$C Vanadium and Titanium are almost completely taken into solution within 3 hours.
- The leach efficiency of Vanadium and Titanium degrade as the pulp density is increased above 10 %wt/wt.
- At 4 mol/L HCl, pulp density less than or equal to 10 %wt/wt and elevated temperature (70–90$^{O}$C) Vanadium is effectively leached (>95 %) and Titanium remains with the residue.

A 22g concentrate sample was leached under near optimal conditions (8M HCl acid strength, 10% pulp density and 80°C for 3 hours) sampling at short time intervals to understand the leaching kinetics. The results included:

- The leach efficiency for Titanium, Vanadium and Iron were 75.7%, 97.7% and 92.2% respectively.
- A high percentage of vanadium and iron was taken into solution during the first minute of the leach process. This rapid dissolution is attributed to the small particle size (80% <45 microns) of the concentrate.
- Leaching for longer than 2 hours only increased the leach efficiency of Titanium slightly.

Hydrothermal Precipitation of Titanium Dioxide

The initial focus of product generation testwork has been to precipitate a Titanium Oxide ($TiO_2$) product without the addition of any reagents.

For these tests, larger samples of concentrate were leached in 8-10M HCl with leach efficiencies of up to 98.9% V, 98.0% Fe and 97.7% Ti. The leach liquor was then heated under reflux and distillation conditions to promote the hydrolysis of Titanium.

The first test heated the leachate under distillation process only and produced a Titanium Dioxide precipitate that assayed 94.1% $TiO_2$. This increased to 94.5% $TiO_2$ after a single acid wash step to remove some Fe contaminants (refer KRC ASX announcement 9 October 2017).

In the second test, the leachate was first heated under reflux followed by distillation conditions to removed most of the HCl. From this liquor a crude TiO2 solid was filtered, then dissolved in concentrated sulphuric acid, diluted before refluxing to precipitate a high purity $TiO_2$ product that assayed 99.1% $TiO_2$. The main contaminants were iron (0.68% $Fe_2O_3$) and phosphorus (0.11% $P_2O_5$), with very low amounts of chromium (1.2 ppm Cr) and vanadium (<0.3 ppm V) (refer KRC ASX announcement 4 December 2017).

Test 3 refined the Ti precipitation process to form a high purity $TiO_2$ product that assayed 99.5% $TiO_2$ (KRC ASX announcement 30 January 2018).

High Purity Titanium Dioxide Product assaying 99.5% $TiO_2$

Further testwork is underway to optimise the recoveries and increase the titanium dioxide purity to >99.5% $TiO_2$.

Chemical Precipitation of Vanadium Pentoxide

Vanadium product generation testwork has trialled selective chemical precipitation using ammonium chloride ($NH_4Cl$) as a precipitating agent.

An oxidizing agent was added to the Ti-depleted leachate to ensure the vanadium in solution was in the highest oxidation state ($V^{5+}$). $NH_4Cl$ was added to the liquor from which was filtered a vanadium-rich intermediate precipitate. Based on the solution assays, 91.4% of the V was recovered from the leachate into the intermediate precipitate. The V-rich intermediate precipitate was treated in a sodium carbonate ($Na_2CO_3$) solution to form a sodium vanadate solution. After filtering of residue solids from the sodium vanadate solution, it was then treated by the addition of ammonium chloride which formed a yellow/orange vanadate precipitate. The main contaminant in this vanadium product is Na.

The purified vanadium product was calcined at 700$^{O}$C for 3 hours to convert it into vanadium pentoxide which after washing assayed 95.5% $V_2O_5$, with 4.41% $Na_2O$, 472ppm $Al_2O_3$, 132ppm $TiO_2$, 73ppm $Fe_2O_3$ and 27ppm $Cr_2O_3$ (refer KRC ASX announcement 9 October 2017)

Further testwork is underway to improve the recoveries and quality of the vanadium pentoxide product.

Background on the Vanadium Project

KRC's Vanadium and Titanium Project is based on its 100% owned vanadium deposit located at Speewah in the Kimberley of Western Australia. The deposit comprises a Measured, Indicated and Inferred Mineral Resource of 4,712 million tonnes at 0.3% $V_2O_5$, 2% Ti and 14.7% Fe (reported at a 0.23% $V_2O_5$ cut-off grade from the Central, Buckman and Red Hill deposits) (refer KRC ASX announcement 26 May 2017 for the full resource statement details). This is Australia's largest vanadium-in-magnetite deposit. KRC envisages an open cut mining operation on the Central Vanadium deposit which outcrops and has shallow dipping geometry (refer KRC ASX announcement 10 May 2011 for a preliminary pit modelling study). KRC's Vanadium Concept Study currently underway is examining a process flow sheet that processes high grade vanadium samples from the Central Vanadium deposit (KRC ASX release 21 April 2017). Initially a magnetite concentrate grading >2% vanadium pentoxide ($V_2O_5$) is produced by crushing, grinding and magnetic separation methods (KRC ASX announcement 21 August 2017). The vanadium and titanium enriched concentrate is then leached in hydrochloric acid to release the V and Ti metals into solution for separation by hydrothermal and chemical precipitation methods followed by purification steps to produce vanadium pentoxide ($V_2O_5$) and titanium dioxide ($TiO_2$) products.

**Windsor Fluorite Deposit**

KRC is currently reviewing the Windsor fluorite deposit at Speewah. Acid grade fluorspar prices have increased recently to USD$480-520 per tonne for 97% CaF2, wet filtercake, FOB China (Industrial Minerals Magazine, 19 January 2018).

The deposit comprises four fluorite-quartz-barite veins (named A, B, C and E) along the King River Fault Zone (Figure 1), located on granted Mining Leases (M80/268 and 269).

The fluorite from the Windsor deposit is suitable for beneficiation by heavy media separation and flotation to acid grade fluorspar grading 98.6% CaF2 (KRC ASX Presentation 13 June 2008). Acid grade fluorspar (acidspar >97% CaF2) is a high value product sold as a concentrate and used to manufacture hydrofluoric acid, fluorocarbon chemicals, foam blowing agents, refrigerants, petroleum refining, and making aluminium fluoride (a flux for smelting alumina to aluminium metal).

An update of the Fluorite Mineral Resources estimate completed in 2009 (refer KRC ASX announcement dated 25 August 2009) is underway to comply with the guidelines of the 2012 JORC Code.

**Placement**

During the December 2017 quarter, KRC made a placement of 50,000,000 shares at 1.1 cents a share to raise $550,000 from professional and sophisticated investors.

The Company also made another placement of 40,000,000 at 3 cents per share, to raise $1.2 million in January 2018.

These new funds will provide working capital for the Vanadium Concept Study and metallurgical testwork and allow the Company to plan and implement an RC drilling programme at Mt Remarkable in the second quarter of 2018.

## Competent Persons Statement

The information in this report that relates to Exploration Results, Mineral Resources and Metallurgical Results is based on information compiled by Ken Rogers and Andrew Chapman and fairly represents this information. Mr. Rogers is the Chief Geologist and an employee of King River Copper Ltd and a Member of the Australian Institute of Geoscientists (AIG) and a Member of The Institute of Materials Minerals and Mining (IMMM), and a Chartered Engineer of the IMMM. Mr. Chapman is a Consulting Geologist contracted with the Company. Mr. Rogers has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Rogers and Mr. Chapman consent to the inclusion in this report of the matters based on information in the form and context in which it appears.

254 Adelaide Tce
Perth WA 6000

PO Box Z5518, Perth WA 6831

**PHONE:** +61 (0)8 9221 8055
**FAX:** +61 (0)8 9325 8088
**WEB:** www.kingrivercopper.com.au

## TABLE 1: SCHEDULE OF TENEMENTS HELD AT 31 DECEMBER 2017
## SPEEWAH MINING PTY LTD
## (wholly-owned subsidiary of King River Copper Limited)

| Tenement | Project | Ownership | Change During Quarter |
|---|---|---|---|
| E80/2863 | Speewah | 100% | |
| E80/3657 | | 100% | |
| E80/4468 | | 100% | |
| E80/4740 | | 100% | |
| E80/4741 | | 100% | |
| E80/4829 | | 100% | |
| E80/4830 | | 100% | |
| E80/4831 | | 100% | |
| E80/4832 | | 100% | |
| E80/4961 | | 100% | |
| E80/4962 | | 100% | |
| E80/4972 | | 100% | |
| E80/4973 | | 100% | |
| L80/43 | | 100% | |
| L80/47 | | 100% | |
| M80/267 | | 100% | |
| M80/268 | | 100% | |
| M80/269 | | 100% | |
| E80/5007 | Mt Remarkable | 100% | |
| ELA80/5133 | | 100% | New application |

Note:

E = Exploration Licence (granted) ELA = Exploration Licence (application)

M = Mining Lease (granted) L = Miscellaneous Licence (granted)

## TREASURE CREEK PTY LTD
## (wholly-owned subsidiary of King River Copper Limited)

| Tenement | Project | Ownership | Change During Quarter |
|---|---|---|---|
| EL31617 | Tennant Creek | 100% | New application |
| EL31618 | | 100% | New application |
| EL31619 | | 100% | New application |
| EL31623 | | 100% | New application |
| EL31624 | | 100% | New application |
| EL31625 | | 100% | New application |
| EL31626 | | 100% | New application |
| EL31627 | | 100% | New application |
| EL31628 | | 100% | New application |
| EL31629 | | 100% | New application |
| EL31633 | | 100% | New application |
| EL31634 | | 100% | New application |

Note:

EL = Exploration Licence application

KING RIVER COPPER LIMITED

# Appendix 1: King River Copper Limited Mt Remarkable Project JORC 2012 Table 1

The following section is provided to ensure compliance with the JORC (2012) requirements for the reporting of exploration results:

## SECTION 1 : SAMPLING TECHNIQUES AND DATA

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling Techniques* | *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* | This ASX Quarterly Report December 2017 summarises the high grade assay results from KRC's 2017 Reverse Circulation ("RC") drill programme at the Company's Mt Remarkable Project last reported on 20 December 2017.<br><br>*Historical Drilling*<br>Drill and assay data for historical drilling was sourced from annual mineral exploration reports downloaded through WAMEX and historical quarterly activity reports submitted to ASX by Northern Star Resources Ltd. Historical licences were E80/2427 and E80/4001<br><br>For historical holes (WRC-001 – WRC-026) initial sample taken by spear with all significant results later riffle split.<br><br>For historical holes (08WRC059-08WRC088) 3-5kg 1m samples taken direct from static cone splitter or 4m comps taken by spearing 1m samples. Field standards and duplicates inserted at regular intervals.<br><br>No details on sampling are available on historical RC holes WRC027 – WRC058 or diamond core holes WCD01-02.<br><br>Onsite XRF analysis is conducted on rock chip samples using a hand-held Niton XRF Model XL3T 950 Analyser. These results are only used for onsite interpretation and preliminary assessment subject to final geochemical analysis by laboratory assays.<br><br>*Current RC Programme*<br><br>RC Sampling: All samples from the RC drilling are taken as 1m samples. Samples are sent to ALS Laboratories in Perth for assaying.<br><br>Appropriate QAQC samples (standards, blanks and duplicates) are inserted into the sequences as per industry best practice. Samples are collected using cone or riffle splitter. Geological logging of RC chips is completed at site with representative chips being stored in drill chip trays.<br><br>Onsite XRF analysis is conducted on the fines from RC chips using a hand-held Niton XRF Model XL3T 950 Analyser. These results are only used for onsite interpretation and preliminary assessment subject to final geochemical analysis by laboratory assays. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling Techniques (continued)* | *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | *Historic RC Sampling:*<br>Drill and assay data for historical drilling was sourced from annual mineral exploration reports downloaded through WAMEX and historical quarterly activity reports submitted to ASX by Northern Star Resources Ltd.  Historical licences were E80/2427 and E80/4001<br>For historical holes (WRC-001 – WRC-026) initial sample taken by spear with all significant results later riffle split.<br>For historical holes (08WRC059-08WRC088) 3-5kg 1m samples taken direct from static cone splitter or 4m comps taken by spearing 1m samples.  Field standards and duplicates inserted at regular intervals.<br>No details on sampling are available on historical RC holes WRC027 – WRC058 or diamond core holes WCD01-02.<br>Historical Geological logging of RC is available in historic reports. Downhole surveys of dip and azimuth were taken as single shots by the driller with every 50 to 100m depending on depth of hole. The drill-hole collar locations were recorded using a hand held GPS, which has an accuracy of +/- 10m.<br>*Current RC Programme*<br>The RC drilling rig has a cone splitter built into the cyclone on the rig. Samples are taken on a one meter basis and collected directly from the splitter into uniquely numbered calico bags. The calico bag contains a representative sample from the drill return for that metre. This results in a representative sample being taken from drill return, for that metre of drilling. The remaining majority of the sample return for that metre is collected and stored in a green plastic bag marked with that specific metre interval. The cyclone is blown through with compressed air after each plastic and calico sample bag is removed. If wet sample or clays are encountered then the cyclone is opened and cleaned manually and with the aid of a compressed air gun.<br>Geological logging of RC chips is completed at site with representative chips being stored in drill chip trays. Downhole surveys of dip and azimuth are conducted using a single shot camera every 50m to 100m to detect deviations of the hole from the planned dip and azimuth. The drill-hole collar locations were recorded using a hand held GPS, which has an accuracy of +/- 10m. At a later date the drillhole collar may be surveyed with a DGPS to a greater degree of accuracy. |
| | *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>*In cases where 'industry standard' work has been done this would be* | RC Sampling: Sampling is done from the 1m splits in altered or mineralised rock and at 4m composites in unaltered/unmineralised rock. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | KRC Samples are assayed by ALS Laboratory for multi-elements using either a four acid digest followed by multi element analysis with ICP-AES (Inductively coupled plasma atomic emission spectroscopy) or ICP-MS (Inductively coupled plasma mass spectrometry) analysis dependent on element being assayed for and grade ranges). Au, Pt and Pd processed by fire assay and analysis with ICP-AES.<br><br>Laboratory QAQC procedures summary:<br><br>Following drying of samples at 85°C in a fan forced gas oven, material <3kg was pulverised to 85% passing 75µm in a LM-5 with samples >3kg passing through a 50:50 riffle split prior to pulverisation. Fire assay was undertaken on a 30g charge using lead flux Ag collector fire assay with aqua regia digestion and ICP-AES finish. Multiple element methodology was completed on a 0.25g using a combination of four acids including hydrofluoric acid for near total digestion. Determination was undertaken with a combination of ICP-AES and ICP-MS instrumentation. |
| *Drilling techniques* | *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | *Historic Drilling:*<br><br>Drill type was Reverse Circulation (RC) and Diamond Core (DC).<br><br>RC holes were drilled with a standard face sampling 5.5" RC hammer.<br><br>RC holes (WRC-001 – WRC-026) was drilled by Grovebrook Drilling using a GMC 150 rig mounted on a Mercedes Benz 4x4 model 1750l Unimog with a Ingersoll-Rand model HR 825cfm @ 400psi two stage rotary screw compressor and KL150 twin speed head with 3.5 inch rods. RC holes (08WRC059-08WRC088) was drilled by Ranger Drilling Services Pty Ltd, using a HYDCO 350 with a Cummins KTTA19 750 horsepower @ 2100 rpm rig engine. A Sullair Oil Flooded Rotary Screw - Two Stage Compressor was used (1150 cfm @ 500 psi at 2100 rpm with Air Research 1800cfm @ 800psi Booster mounted on board rig).<br><br>DC holes (NQ) were drilled by Orbit Drilling using a Toyota Landcruiser mounted rig.<br><br>*Current RC Programme*<br><br>The RC drilling uses a 140 mm diameter face hammer tool. High capacity air compressors on the drill rig are used to ensure a continuously sealed and high pressure system during drilling to maximise the recovery of the drill cuttings, and to ensure chips remain dry to the maximum extent possible. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Drill sample recovery* | *Method of recording and assessing core and chip sample recoveries and results assessed,*<br>*Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>*Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | *Historic Drilling:*<br>Sample quality of historical data is unknown however all quoted data has been checked against previous ASX reported tables and intersects by experienced KRC geologists. ASX and departmental reports were of a high standard demonstrating Northern Stars professional standards.<br>*Current RC Programme*<br>RC samples are visually checked for recovery, moisture and contamination. Geological logging is completed at site with representative RC chips stored in chip trays.<br>Samples are collected using cone or riffle splitter. Geological logging of RC chips is completed at site with representative chips being stored in drill chip trays.<br>To date, no detailed analysis to determine the relationship between sample recovery and grade has been undertaken for any drill program. This analysis will be conducted following any economic discovery.<br>The nature of epithermal gold-silver-copper mineralisation within competent quartz veins and host felsic volcanics are considered to significantly reduce any possible issue of sample bias due to material loss or gain. |
| *Logging* | ○ *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>○ *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>○ *The total length and percentage of the relevant intersections logged.* | *Historic Drilling:*<br>Holes were geologically logged. KRC will make enquiries as to whether any historic chip trays were kept/stored.<br>*Current RC Programme*<br>Geological logging is carried out on all drill holes with lithology, alteration, mineralisation, structure and veining recorded.<br>Logging of RC samples records lithology, mineralogy, mineralisation, structures (foliation), weathering, colour and other noticeable features. Selected chip trays recording mineralised intervals were photographed in both dry and wet form.<br>All drill holes are geologically logged in full and detailed lithogeochemical information is collected by the field XRF unit to help determine potential mineralised intersections. The data relating to the elements analysed is used to determine further information regarding the detailed rock composition and mineralised intervals. |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| *Sub-sampling techniques and sample preparation* | ○ *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>○ *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>○ *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>○ *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>○ *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>○ *Whether sample sizes are appropriate to the grain size of the material being sampled.* | *Historic Drilling:*<br>○ KRC will make enquiries as to whether any historic chip trays/diamond trays were kept/stored.<br>○ The sample type and method was of a high standard, and all data was checked against previously reported ASX announcements.<br>○ The sample sizes are considered to be appropriate to correctly represent the gold-silver-copper mineralisation at the Mt Remarkable Project based on the style of mineralisation (epithermal quartz vein), the thickness and consistency of the intersections and the sampling methodology.<br><br>*Current RC Programme*<br><br>No diamond core drilling undertaken.<br><br>RC samples are collected in dry form. Samples are collected using cone or riffle splitter when available. Geological logging of RC chips is completed at site with representative chips being stored in drill chip trays.<br><br>Assay preparation procedures ensure the entire sample is pulverised to 75 microns before the sub-sample is taken. This removes the potential for the significant sub-sampling bias that can be introduced at this stage.<br><br>RC Sampling: Field QC procedures maximise representivity of RC samples and eliminate sampling errors, including the use of duplicate samples. Also the use of certified reference material including assay standards and with blanks aid in maximising representivity of samples. For fire assay a run of 78 client samples includes a minimum of one method blank, two certified reference materials (CRMs) and three duplicates. For the multi-element method, a QC lot consists of up to 35 client samples with a minimum of one method blank, two CRMs and two duplicates. The analytical facility is certified to a minimum of ISO 9001:2008.<br><br>Field duplicates were taken every 20$^{th}$ sample for RC samples.<br><br>The sample sizes are considered to be appropriate to correctly represent the gold-silver mineralisation at the Project based on the style of mineralisation (epithermal quartz vein), the thickness and consistency of the intersections and the sampling methodology. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Quality of assay data and laboratory tests* | *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* | *Historic Drilling:*<br>o Historical holes (WRC-001 – WRC-032) 1 metre samples analysed using 50g lead collection with ICP Optical (Atomic) Emission.<br>o Historical holes (WRD-001 – WRD-002) Samples analysed using 50g lead collection fire assay and analysed by flame Atomic Absorption Spectrometry and 25 gram Aqua-Regia digest and finished with Enhanced Inductively Coupled Plasma Optical (Atomic) Emission.<br>o Historical holes (WRC-033 – WRC-058) 1 metre samples analysed using 40g Aqua Regia digest with ICP Mass Spectrometry<br>o Historical holes (08WRC059-08WRC088) At Ultra Trace, samples were sorted, dried to 45 degrees only (so Hg was not vaporised) and split where necessary then pulverised in a vibrating disc pulveriser. Au, Pt, Pd were analysed by firing a 40gm (approximate) portion of the sample. The samples were also digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids. To test for Hg, the samples were also digested with Aqua Regia. This partial digest is extremely efficient for extraction of gold. Sr, Rb, As, Ag, Pb, Ba, W, U, Mo, Th, Bi, Sb, Tl, Te and Hg were determined by ICPMS and Au, Pt, Pd, Cu, Fe, Mn, S, Zn, K by ICPOES.<br><br>*Current RC Programme*<br>RC drill samples as received from the field are being assayed by ALS Laboratory for multi-elements using either a four acid digest (nitric, hydrochloric, hydrofluoric and perchloric acids) followed by multi element analysis with ICP-AES (Inductively coupled plasma atomic emission spectroscopy) or ICP-MS (Inductively coupled plasma mass spectrometry) analysis dependent on element being assayed for and grade ranges). Au, Pt and Pd processed by fire assay and analysis with ICP-AES. The analytical facility is certified to a minimum of ISO 9001:2008. |
| | *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* | A handheld XRF instrument (Niton XRF Model XL3T 950 Analyser) is used to systematically analyse the RC chips onsite. Reading time was 60 seconds. The instruments are serviced and calibrated at least once a year. Field calibration of the XRF instrument using standards is undertaken each day. |
| | *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | *RC Samples:* Laboratory QA/QC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of in house procedures. The Company will also submit an independent set of field duplicates (see above). |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Verification of sampling and assaying* | *The verification of significant intersections by either independent or alternative company personnel.* | *RC Samples:* Data entry carried out by field personnel thus minimizing transcription or other errors. Careful field documentation procedures and rigorous database validation ensure that field and assay data are merged accurately. Significant intersections are verified by the Company's Chief Geologist and Senior Consulting Geologist. |
| | *The use of twinned holes.* | KRC is conducting validation drilling of a selection of the historic holes including twin and scissor drilling. |
| *Verification of sampling and assaying (continued)* | *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* | *Historic Drilling:*<br>o All quoted data has been checked against previous ASX reported tables and intersections by experienced KRC geologists.<br>o Rigorous database validation ensures assay data are compiled accurately.<br>o No adjustments have been made to the historic assay data.<br>o WRD001 was drilled to twin WRC-018 with sampling produced similar grades. WRD002 was drilled near WRC-021 with grades also comparable to the RC equivalent.<br>*Current RC Programme*<br>Geological data was collected using handwritten log sheets and imported in the field onto a laptop detailing geology (weathering, structure, alteration, mineralisation), sampling quality and intervals, sample numbers, QA/QC and survey data. This data, together with the assay data received from the laboratory and subsequent survey data was entered into the Company's database. |
| | *Discuss any adjustment to assay data.* | No adjustments or calibrations will be made to any primary assay data collected for the purpose of reporting assay grades and mineralised intervals. |
| *Location of data points* | *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* | *Historic Drilling*<br>o Holes pegged and picked up with hand held GPS 4-10m accuracy. End of hole down hole survey single shots were taken with an electronic multishot tool for most holes. Some holes were surveyed with a multishot camera.<br>o All locations reported in GDA94 Zone 52.<br>o Location of most drill holes checked by KRC during reconnaissance using hand held gps.<br><br>*Current RC Programme*<br>GPS pickups of exploration and step out drilling is considered adequate however infill drilling at the main Trudi vein requires more accurate pickups. KRC intends to pick up historic and KRC holes with a sub metre accuracy DGPS. |
| | *Specification of the grid system used.* | All rock samples, drill collar and geophysical sample locations recorded in GDA94 Zone 52. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *Quality and adequacy of topographic control.* | *Historic Drilling:*<br>Topographic locations interpreted from GPS pickups, DEMs and field observations (m RL). Some holes have no RL levels listed in the historic data and KRC will calculate these depths based on DEMs and later field observations/hole pickups.<br>Current RC Programme<br>Topographic locations interpreted from GPS pickups (barometric altimeter), DEMs and field observations. Adequate for first pass reconnaissance. Best estimated RLs were assigned during drilling and are to be corrected at a later stage. Infill drilling at the main Trudi vein requires more accurate pickups. KRC intends to pick up historic and KRC holes with a sub metre accuracy DGPS. |
| *Data spacing and distribution* | *Data spacing for reporting of Exploration Results.* | *Historic Drilling:*<br>Sample spacing was based on expected target structure width, transported overburden, depth of weathering, expected depth of hole penetration and sectional horizontal coverage of each hole at 60 degrees dip.<br>*Current RC Programme*<br>KMRC0005 and KMRC0026 were drilled as scissor holes to test high grade mineralisation reported in historic drill holes, KMRC0025 and KMRC0027 were drilled as twin holes. |
| | *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* | *Historic Drilling:*<br>Sample spacing was based on expected target structure width, transported overburden, depth of weathering, expected depth of hole penetration and sectional horizontal coverage of each hole at 60 degrees dip. Drilling at the Mt Remarkable Project is at the exploration stage and mineralisation and not yet appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications to be applied.<br>*Current RC Programme*<br>Drilling at the Project is at the exploration stage and mineralisation has not yet demonstrated to be sufficient in both geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications to be applied. |
| | *Whether sample compositing has been applied.* | *Historic Drilling:*<br>RC drill samples were taken at one metre lengths and adjusted where necessary to reflect local variations in geology or where visible mineralised zones are encountered, in order to preserve the samples as representative.<br>*Current RC Programme*<br>RC drill samples are taken at one metre lengths and adjusted where necessary to reflect local variations in geology or where visible mineralised zones are encountered, in order to preserve |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | the samples as representative. |
| *Orientation of data in relation to geological structure* | *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* | *Historic Drilling:*<br>The drill holes were drilled at an angle of -60 degrees (unless otherwise stated) on an azimuth designed to intersect the modelled mineralised zones at a near perpendicular orientation. However, the orientation of key structures may be locally variable.<br>*Current RC Programme*<br>The drill holes are drilled at an angle of -60 degrees (unless otherwise stated) on an azimuth designed to intersect the modelled mineralised zones at a near perpendicular orientation. However, the orientation of key structures may be locally variable and any relationship to mineralisation has yet to be identified. |
| | *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | No orientation based sampling bias has been identified in the data to date. |
| *Sample security* | *The measures taken to ensure sample security.* | *KRC Samples:* Chain of Custody is managed by the Company until samples pass to a duly certified assay laboratory for subsampling and assaying. The rock chip and RC sample bags are stored on secure sites and delivered to the assay laboratory by the Company or a competent agent. When in transit, they are kept in locked premises. Transport logs have been set up to track the progress of samples. The chain of custody passes upon delivery of the samples to the assay laboratory.<br>Library samples collected and slabbed to allow resampling and further analysis where required during and after the wet season. Pulps will be stored until final results have been fully interpreted.<br>*Historic Samples:*<br>*o* Sample security is not discussed in the historic data/reports, however all quoted data has been checked against previous ASX reported tables and intersections by experienced KRC geologists. A well-known and highly respectable lab –Ultra Trace – was used for analysis. |
| *Audits or Reviews* | *The results of ay audits or reviews of sampling techniques and data.* | Sampling techniques and procedures are regularly reviewed internally, as is data. To date, no external audits have been completed on the drilling programme. |

## SECTION 2 : REPORTING OF EXPLORATION RESULTS

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Mineral tenement and land tenure status* | *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br><br>*The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | The Mt Remarkable Project consists of two tenements, granted exploration licence E80/5007 and application E80/5133, 100% owned by Speewah Mining Pty Ltd (a wholly owned subsidiary of King River Copper Limited) the licence is located 200km SW of Kununurra in the NE Kimberley. The tenements are in good standing and no known impediments exist. It is within the Yurriyangem Taam native title claim area (WC2010/13).<br>Speewah Mining also holds tenements within the Speewah Dome to the north. |
| *Exploration done by other parties* | *Acknowledgment and appraisal of exploration by other parties.* | Exploration by previous holders is listed in the 'other substantive exploration' section of this table. Historical licences were E80/2427 and E80/4001.<br>o Ashton JV (1974-1983) – Kimberlite exploration including stream sediment sampling. Several kimberlites identified in the region outside current tenement.<br>o Uranerz Australia Ltd (1980 to 1982) – Uranium/Base Metal Exploration including stream sampling, geological mapping, ground magnetics and radiometry. Middleton Prospect (Cu-Pb-Mo) identified (NE portion of new tenement).<br>o Hunter Resources (1988-1991) – Gold exploration including BLEG stream sampling, no anomalous values.<br>o Panorama Resources NL (1993-1998) – Kimberlite/Base Metal and Gold exploration including stream, rock chip and RC drilling. 6 RC holes at Middleton Prospect (within current tenement) with no significant gold. Rock Chip sampling along strike at Middleton had no anomalous gold however one sample assayed 64ppm Ag, 8.38% Cu 600m north of Middleton.<br>o Northern Star Resources were the last holders of the ground (2003-2009) – see the 'other substantive exploration' section of this table. |
| *Geology* | *Deposit type, geological setting and style of mineralisation.* | Exploration is targeting low to intermediate sulphidation epithermal gold-silver-copper mineralisation/ shallow level Cu-Au Porphyry systems within the NE Kimberly Proterozoic rocks. Potential for high grade gold targets exist in structural and litho-structural traps. |
| *Drill hole Information* | *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* | Drill information reported in this announcement relates to KRC's 2017 RC drilling and is presented in Figures 2 to 9. All assays have now been received from this drilling and reported in KRC ASX announcements 29th October 2017, 10th, 21st and 27th November 2017 and 20th December 2017. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | ○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>○ *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | |
| *Data aggregation methods* | *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* | o Intersections calculated using a weighted average of grade vs metres.<br>o All single metre assays also quoted.<br>o No metal equivalent calculations used.<br>o No upper cuts used in intersection calculations. |
| | *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* | The RC downhole drill intersects in this report have been reported as averages of the interval >0.1g/t Au and up to 2m of internal waste. Where high grades are included in an interval then they are quoted as 'including' as reported in KRC ASX announcements 29th October 2017, 10th, 21st and 27th November 2017 and 20th December 2017.<br>The quoted historic drill intersect has been calculated with an included high-grade sample of 35.55g/t Au. This intersection included 3 other +5g/t Au samples and 1 sample greater than 1g/t. |
| | *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | No metal equivalent values are used for reporting exploration results. |
| *Relationship between mineralisation widths and intercept lengths* | *These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | o Down hole widths have been quoted in this report. Main targeted structures are sub vertical meaning true widths will be approximately 1/2 to 2/3rds of the quoted width.<br>o Drill holes were drilled perpendicular to structure strike where possible.<br>o Mt Remarkable is a newly acquired project and a full interpretation of the respective prospects is still yet to be done. KRC believes that additional high grade targets will be revealed with further drilling and after a full geological review of the project is completed. |
| *Diagrams* | *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | Figures 1-9 show location map, drill result summary map, long projections of Trudi veins, drill collar plans and 3D view. |
| *Balanced reporting* | *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | Reports on recent exploration can be found in ASX Releases that are available on our website at www.kingrivercopper.com.au. The exploration results reported are representative of the mineralisation style with grades and/or widths reported in a consistent manner. |
| *Other substantive exploration data* | *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | The last holders of the ground were Northern Star Resources Ltd who initially were exploring the tenement as a private company in 2002-2003. Northern Star Resources were listed as an ASX company in 2004 and from 2004-2009 undertook airborne magnetics and radiometric surveys, GAIP and DDIP geophysical surveys, soil/stream sediment/rock chip sampling. Also three phases of RC drilling were completed, and two diamond core holes were drilled. Towards the end of their tenure Northern Star employed a consultant geologist to review the project. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Further work* | *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>*Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | Exploration at Mt Remarkable aims to extend current high grade mineralisation, identify new high grade shoots on known mineralised veins and identify new mineralised veins/structures. |

# Appendix 1: King River Copper Limited Speewah Project JORC 2012 Table 1

The following section is provided to ensure compliance with the JORC (2012) requirements for the reporting of exploration results:

## Section 1 : Sampling Techniques and Data

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling Techniques* | *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* | This ASX Quarterly Report December 2017 summarises the metallurgical reports on the Vanadium deposits at the Company's Speewah Project.<br><br>*Metallurgical Sample:* A 500g sample of the vanadiferous titano-magnetite concentrate previously produced by Nagrom the Mineral Processor (refer KRC ASX announcement 21 August 2017). |
| *Sampling Techniques (continued)* | *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | *Metallurgical Sample:* 22g and 100g samples of concentrate were leached in 6M-10M HCl for 3-4 hours at 70-90°C and 10% pulp density. |
| | *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | *Metallurgical Sample:* Precipitation of vanadium pentoxide and titanium dioxide product testwork involved larger 100g samples of concentrate leached in 8M-10M HCl for 4 hours at 90°C and 10% pulp density. The leachate was heated under reflux then distillation conditions to remove HCl leaving a smaller volume of leachate from which was filtered a wet crude titanium dioxide solid that has been purified in sulphuric acid to produce a high purity titanium dioxide. Production of vanadium pentoxide has involved chemical precipitation using ammonium chloride ($NH_4Cl$). |
| *Drilling techniques* | *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | No drilling was undertaken. |
| *Drill sample recovery* | *Method of recording and assessing core and chip sample recoveries and results assessed.* | No drilling was undertaken. |
| | *Measures taken to maximise sample recovery and ensure representative nature of the samples.* | No drilling was undertaken. |
| | *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | No drilling was undertaken. |
| *Logging* | *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* | No drilling or logging was undertaken. |
| | *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* | No drilling or logging was undertaken. |
| | *The total length and percentage of the relevant intersections logged.* | No drilling or logging was undertaken. |

| | | |
|---|---|---|
| Sub-sampling techniques and sample preparation | *If core, whether cut or sawn and whether quarter, half or all core taken.* | No diamond core drilling was undertaken. |
| | *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* | No drilling was undertaken. |
| | *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* | No drilling was undertaken. |
| | *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* | No drilling was undertaken. |
| | *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* | No drilling was undertaken. |
| | *Whether sample sizes are appropriate to the grain size of the material being sampled.* | No drilling was undertaken. |
| Quality of assay data and laboratory tests | *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* | The initial focus of product generation testwork has been to precipitate a Titanium Oxide (TiO2) product without the addition of any reagents. The leach liquor was heated under reflux and distillation conditions to promote the hydrolysis of Titanium.<br>Vanadium product generation testwork was undertaken trialling selective chemical precipitation using ammonium chloride ($NH_4Cl$).<br>Further Ti and V product purification steps are underway and planned.<br>TSW Analytical is a well-established analytical service provider that has developed a reputation for producing accurate analyses for complex samples. The company's expertise has assisted with the development of hydrometallurgical flow-sheets for multi-element ore concentrates.<br>The titaniferous vanadiferous magnetite concentrate (supplied by the client) and leach residues have been assayed using ICP-AES and ICP-MS. Samples were fused in a lithium borate flux, the resultant glass bead was dissolved in hydrochloric acid and suitably diluted for either ICP-MS or ICP-AES analysis. Loss on Ignition (LOI) at 1000 $^{O}$C was performed for completeness of the analytical data and to give a better indication of the total analytical percentage approximation to 100%.<br>The leach solutions and wash liquors have been analysed using ICP-AES and ICP-MS. The samples were diluted suitably for the appropriate ICP based analysis. Dilutions are used to bring the analyte concentration into the optimum analytical range of the ICP instrument used and to reduce matrix interference complications during quantification.<br>Leach efficiency has been determined using the mass of the total analyte in the leach residue divided by the mass of the total analyte in the initial titaniferous vanadiferous magnetite concentrate used. The resulting fraction is multiplied by 100 to give a percent leach efficiency.<br>TSW Analytical uses in-house standards and Certified Reference Materials (CRMs) to ensure data are "Fit-For-Purpose". |

| | | |
|---|---|---|
| | *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* | No geophysical data was collected. |
| | *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | TSW Analytical - concentrations are reported as micrograms per gram (µg/g) in the solid unless otherwise stated, Instrumental response is measured against AccuTrace High Purity multi-element standards (Choice Analytical) to achieve quantitation.<br>Data are subjected to in-house QA and QC procedures where an independent analyst recalculates instrumental output and compares the newly generated data set with the original. Lack of equivalence between the two data sets triggers an internal review and if necessary re-analysis of the entire data set. Under these circumstances a third independent analyst will assess all generated data prior to sign off.<br>Initial equivalence between the two data sets, generated by the analyst and reviewer, will clear data for remittance to the customer. All reports are reviewed by an independent analyst prior to submission to the customer and where necessary relevant changes, such as wording that may give rise to possible ambiguity of interpretation, will be modified prior to the final report being sent to the customer. |
| *Verification of sampling and assaying* | *The verification of significant intersections by either independent or alternative company personnel.* | No drilling or other sampling was undertaken. |
| | *The use of twinned holes.* | No twinned holes have been completed. |
| | *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* | No drilling or other sampling was undertaken. |
| | *Discuss any adjustment to assay data.* | No adjustments or calibrations will be made to any primary assay data collected for the purpose of reporting assay grades and mineralised intervals. |
| *Location of data points* | *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* | No drilling or other sampling was undertaken. |
| | *Specification of the grid system used.* | No drilling or other sampling was undertaken. |
| | *Quality and adequacy of topographic control.* | No drilling or other sampling was undertaken. |
| *Data spacing and distribution* | *Data spacing for reporting of Exploration Results.* | No drilling or other sampling was undertaken. |
| | *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* | No drilling or other sampling was undertaken. |
| | *Whether sample compositing has been applied.* | No drilling or other sampling was undertaken. |
| *Orientation of data in relation to geological* | *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* | No drilling or other sampling was undertaken. |
| | *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should* | No drilling or other sampling was undertaken. |

| | | |
|---|---|---|
| *structure* | *be assessed and reported if material.* | |
| *Sample security* | *The measures taken to ensure sample security.* | Chain of Custody is managed by the Company until samples pass to a duly certified metallurgical laboratory for subsampling, assaying, beneficiation and hydrometallurgical test work. The RC assay pulp bags are stored on secure sites and delivered to the metallurgical laboratory by the Company or a competent agent. The chain of custody passes upon delivery of the samples to the metallurgical laboratory. |
| *Audits or Reviews* | *The results of ay audits or reviews of sampling techniques and data.* | No external audits have been completed. |

## Section 2 : Reporting of Exploration Results

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Mineral tenement and land tenure status* | *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br><br>*The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | The Speewah Project comprises 16 exploration licences. Details are listed in Table 1 Schedule of Tenements held at 30 September 2017 reported previously in the September Quarterly Report. The Speewah test work reported in this announcement are from samples collected entirely within E80/2863. The tenements are 100% owned by Speewah Mining Pty Ltd (a wholly owned subsidiary of King River Copper Limited), located over the Speewah Dome, 100km SW of Kununurra in the NE Kimberley. The tenements are in good standing and no known impediments exist. No Native Title Claim covers the areas sampled and drilled. The northern part of the tenements (but not E80/2863) is in the Kimberley Heritage Area. |
| *Exploration done by other parties* | *Acknowledgment and appraisal of exploration by other parties.* | Prior work carried out by Elmina NL in the Windsor area included rock chip sampling and RC and DC drilling to delineate the ABC fluorite deposit in 1988-1993.<br>In 2003-2005 Mineral Securities Ltd in joint venture with Doral Mineral Industries completed further drilling of the Windsor ABCE fluorite deposit, a new resource estimate, heritage, environmental and hydrology studies, and a prefeasibility study into the development of an acid grade fluorspar operation. |
| *Geology* | *Deposit type, geological setting and style of mineralisation.* | The ferrovanadium titanium (Ti-V-Fe) deposits occur within the Palaeo-Proterozoic Speewah Dome, which is an elongated doubly plunging anticline trending N-S in the East Kimberley Region of Western Australia. The dome is about 30 km long and attains a maximum width of about 15 km. It comprises sediments and minor volcanics of the Speewah Group, intruded by the Hart Dolerite sill, a large layered, mafic intrusive complex which forms the core of the dome. The vanadium-titanium mineralisation is hosted within a magnetite bearing gabbro unit of the Hart Dolerite, outcropping in places and forming a generally flat dipping body that extends over several kilometres of strike and width. The layered sill is up to 400m thick containing the magnetite gabbro unit which is up to 80m thick.<br>Exposure is limited and fresh rock either outcrops or is at a shallow depth of a few metres.<br>Ti-V-Fe mineralisation occurs as disseminations of vanadiferous titano-magnetite and ilmenite.<br>Within the tenement the layered deposit has been divided into three deposits – Central, Buckman and Red Hill. The test work reported in this announcement was sampled from the Central vanadium deposit. |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| *Drill hole Information* | *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>○ *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | No drilling or other sampling was undertaken. |
| *Data aggregation methods* | *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* | No drilling or other sampling was undertaken. |
| | *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* | No drilling or other sampling was undertaken. |
| | *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | No metal equivalent values are used for reporting. |
| *Relationship between mineralisation widths and intercept lengths* | *These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | No drill results reported. |
| *Diagrams* | *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | No drill results reported. |
| *Balanced reporting* | *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | Reports on previous metallurgical results can be found in ASX Releases that are available on our website, including announcements 1 April 2010, 15 July 2010, 9 November 2010, 8 February 2012, 21 April 2017, 21 August 2017, 9 October 2017, 4 December 2017 and 30 January 2018. |
| *Other substantive exploration data* | *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | Updated vanadium resource estimates in accordance with the JORC 2012 guidelines were reported in KRC ASX announcement 26 May 2017. |
| *Further work* | *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | Further metallurgical optimization tests are planned to increase metal recoveries, shorten leach times and reduce acid consumption, and trialing selective precipitation, solvent extraction and thermal hydrolysis methods to precipitate vanadium pentoxide and titanium dioxide. |