

# SPEEWAH PROJECT HIGH PURITY TIO<sub>2</sub>

## **Australian Securities Exchange Announcement**

22 July 2021

#### Highlight

❖ A high purity titanium dioxide product assayed 99.73% TiO₂ (see below)



High Purity Titanium Dioxide Product assaying 99.73% TiO<sub>2</sub>

King River Resources Limited (ASX: KRR) is pleased to provide this update on hydrometallurgical testwork by Nagrom Metallurgical ("Nagrom") into the production of high purity titanium oxide (TiO<sub>2</sub>) from its 100% owned Speewah Specialty Metals Project ("SSMP") located in the Kimberley of Western Australia.

KRR plans to expand its Specialty Metals focus to develop a process flowsheet to produce high purity Vanadium Pentoxide (V<sub>2</sub>O<sub>5</sub>), Vanadium Electrolyte (VE), and Titanium Dioxide (TiO<sub>2</sub>) products, used in the manufacture of vanadium flow batteries (VFB), master alloys (Al-Ti-V materials), and titanium oxide pigments.

This announcement reports the first positive step in this development.

# **Metallurgical Testwork by Nagrom**

#### Solvent Extraction and Hydrolysis Precipitation of Titanium Dioxide

The initial focus of product generation testwork has been the precipitation a Titanium Oxide (TiO<sub>2</sub>) product by solvent extraction (SX) and hydrothermal methods.

Magnetite-titanium magnetic mineral concentrates from three diamond core holes in the Central deposit (Figure 2) were leached in sulphuric acid under various test conditions to produce nine leachate solutions (AVL14-22). The leach liquors were combined to provide 5L for the SX-Hydrolysis testwork. The bulk composite liquor assayed 87,763mg/L Fe, 12,882mg/L Ti and 2,143mg/L V.

In the first SX stage, the titanium was extracted from the leachate by loading onto an Organic extractant-diluent mix optimal for the leachate composition and highly selective for Ti.

In the second SX stage, a Stripping test was run on the loaded Organic to scrub impurities such as Fe from the Organic phase. The last stage of the SX process involved another Stripping test on the Scrubbed Organic to extract Ti.



A feed solution from the stripping tests, comprising ~1g/L Fe and ~1g/L Ti, was used in a purification investigation involving hydrolysis to produce a synthetic Crude TiO2 precipitate.

The test work resulted in the production of a high purity TiO2 calcine product that assayed 99.73% TiO2. The main contaminants were 120ppm Si, 90ppm Na, 70ppm S, 30ppm K, 30ppm Ba, 21ppm Zn, 15ppm Fe, 10ppm P, and 5ppm Al and Sn, with 0.3% Loss on Ignition (LOI). V was <1ppm.

Further testwork is required to refine and optimise the process, improve Ti recoveries, and increase the titanium dioxide purity by reducing LOI.

#### Solvent Extraction of Vanadium Pentoxide

SX testwork has identified a suitable organic extractant and diluent to extract vanadium from the sulphuric acid leach liquors at high V selectivity. Test work is underway using the Ti-depleted leach liquors used in the Ti testwork and will be reported on successful completion.

This announcement was authorised by the Chairman of the Company.

#### **Anthony Barton**

Chairman
King River Resources Limited
Email: info@kingriverresources.com.au

Phone: +61 8 92218055



#### **Background on the Vanadium and Titanium SSMP**

KRR's Vanadium and Titanium Speewah Specialty Metals Project ("SSMP") 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%  $V_2O_5$ , 3.3%  $TiO_2$  and 14.7% Fe (reported at a 0.23%  $V_2O_5$  cut-off grade from the Central, Buckman and Red Hill deposits) (refer KRR ASX announcements 26 May 2017 and amendment 1 April 2019 for the full resource statement details). This is Australia's largest vanadium-inmagnetite deposit. KRR envisages an open cut mining operation on the Central Vanadium deposit which outcrops and has shallow dipping geometry (refer KRR ASX announcement 20 June 2018). KRR's plan is to develop a process flow sheet that processes high grade vanadium samples from the Central Vanadium deposit. Initially a magnetite concentrate grading ~2% vanadium pentoxide ( $V_2O_5$ ) is produced by crushing, grinding and magnetic separation methods (KRR ASX announcement 21 August 2017). The vanadium and titanium enriched concentrate is then leached in sulphuric acid to release the V and Ti metals into solution (KRR ASX announcement 1 March 2019). The leach liquor will then be treated by solvent extraction and chemical precipitation methods followed by purification steps to produce high purity Vanadium Pentoxide ( $V_2O_5$ ), Vanadium Electrolyte (VE), and Titanium Dioxide (TiO<sub>2</sub>) products, used in the manufacture of vanadium flow batteries (VFB), master alloys (Al-Ti-V materials), and titanium oxide pigments.

#### **Statement by Competent Person**

The information in this report that relates to Exploration Results, Mineral Resources, Metallurgy and Previous Studies is based on information compiled by Ken Rogers (BSc Hons) and fairly represents this information. Mr. Rogers is the Chief Geologist and an employee of King River Resources Ltd, and a Member of both the Australian Institute of Geoscientists (AIG number 2359) and The Institute of Materials Minerals and Mining (IMMM number 43552), and a Chartered Engineer of the IMMM. 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 consents to the inclusion in this report of the matters based on information in the form and context in which it appears.



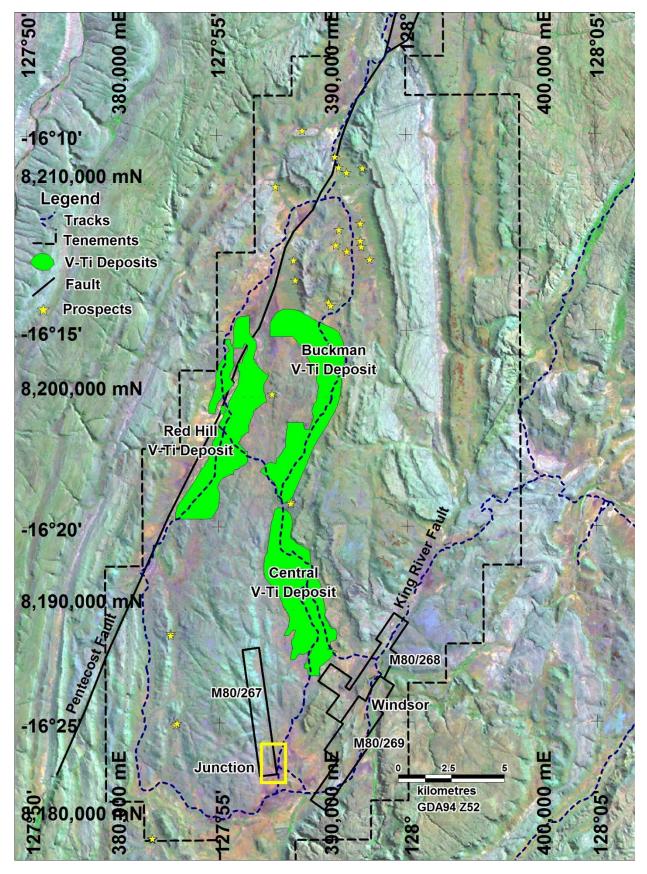


Figure 1: Location of the vanadium resources (green) and Junction Prospect at Speewah.



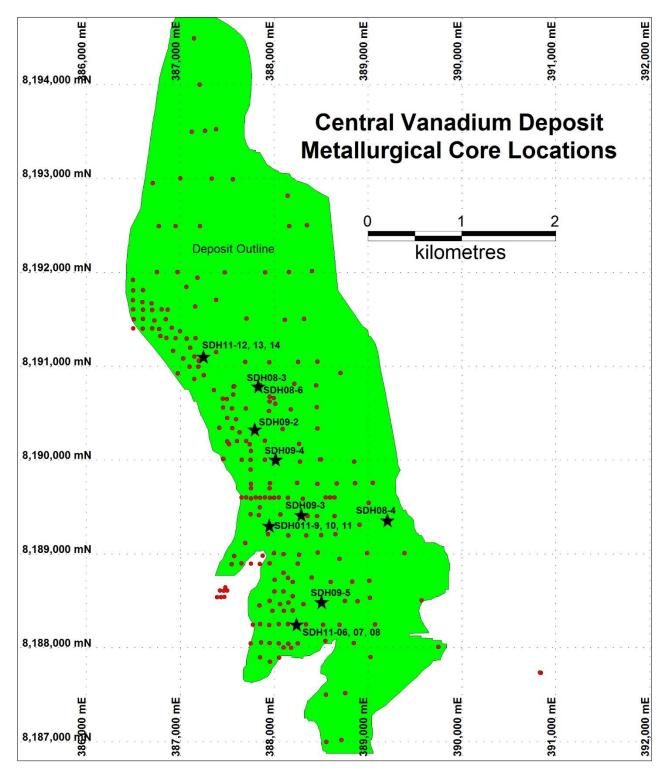


Figure 2: Diamond core hole locations (black stars) and Reverse Circulation drill holes (red dots) within the Central Vanadium Deposit, including metallurgical core hole SDH11-12 referred to in this announcement. Diamond core hole collar data is given in Table 1.



Hole_id	Deposit	East_GDA	North_GDA	RL	Depth	Dip	Azimuth	Tenement
		m	m	m	m	degrees	degrees	
SDH08-3	Central	387830.42	8190778.6	197.037	80	-90	0	E80/2863
SDH08-4	Central	389203.71	8189358.8	190.014	75	-90	0	E80/2863
SDH08-6	Central	387831.84	8190783.9	197.187	450.5	-90	0	E80/2863
SDH09-2	Central	387793.53	8190327.7	196.267	50	-90	0	E80/2863
SDH09-3	Central	388287.08	8189417.5	189.987	70.5	-90	0	E80/2863
SDH09-4	Central	388016.74	8190007.5	194.698	42.1	-90	0	E80/2863
SDH09-5	Central	388502.3	8188487.8	186.4	57.1	-90	0	E80/2863
SDH11-06	Central	388234.08	8188240.6	188.018	39.4	-90	0	E80/2863
SDH11-07	Central	388234.04	8188243.7	187.999	41.6	-90	0	E80/2863
SDH11-08	Central	388234.08	8188246.9	187.941	40.9	-90	0	E80/2863
SDH11-09	Central	387946.28	8189294	191.676	40.9	-90	0	E80/2863
SDH11-10	Central	387945.75	8189295.9	191.643	39.4	-90	0	E80/2863
SDH11-11	Central	387945.33	8189297.8	191.706	40.9	-90	0	E80/2863
SDH11-12	Central	387243.47	8191101.7	212.529	41	-90	0	E80/2863
SDH11-13	Central	387242.63	8191101.2	212.467	41	-90	0	E80/2863
SDH11-14	Central	387241.65	8191100.6	212.457	40.1	-90	0	E80/2863

Table 1: Diamond core holes drilled in the Central deposit



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

## 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.  Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.  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.	This ASX Release dated 22 July 2021 provides an update on the production of high purity Titanium Dioxide (TiO <sub>2</sub> ) by Solvent Extraction-Purification methods from leach liquors derived from magnetic concentrates from the high grade zone of the Central Vanadium deposit at KRR's Speewah Specialty Metals Project (Figure 1). <i>Diamond Core Samples</i> 16 HQ and PQ diamond drill (DQ) core holes were drilled in the Central Vanadium deposit (see Figure 2 and Table 1 for locations).  Three PQ holes have been used in beneficiation and leaching metallurgical testwork by Nagrom (SDH11-09, SDH11-06 and SDH11-12, Figure 2).  All three PQ core holes from the high grade (HG) zone have been used in the hydrometallurgical metallurgical test results reported in this announcement.  Nagrom received 131kg composite magnetite gabbro sample of PQ ½ core from the HG zone of drillhole SDH11-06 – 19m-34.8m downhole. The head grade of this sample is 0.379% V <sub>2</sub> O <sub>5</sub> , 3.636% TiO <sub>2</sub> , 21.516% Fe <sub>2</sub> O <sub>3</sub> , 13.099% Al <sub>2</sub> O <sub>3</sub> , 8.748% CaO, 4.333% MgO and 44.731% SiO <sub>2</sub> .  Nagrom received 61.693kg composite magnetite gabbro sample of PQ ½ core from the HG zone of drillhole SDH11-09 -121-37.5m downhole. The head grade of this sample is 0.368% V <sub>2</sub> O <sub>5</sub> , 3.575% TiO <sub>2</sub> , 21.37% Fe <sub>2</sub> O <sub>3</sub> , 12.736% Al <sub>2</sub> O <sub>3</sub> , 4.328% MgO and 44.746% SiO <sub>2</sub> .  Nagrom received 140kg composite magnetite gabbro sample of PQ ½ core from the HG zone of drillhole SDH11-19 – 21m-37.5m downhole. The head grade of this sample is 0.368% V <sub>2</sub> O <sub>5</sub> , 3.575% TiO <sub>2</sub> , 21.167% Fe <sub>2</sub> O <sub>3</sub> , 13.029% Al <sub>2</sub> O <sub>3</sub> , 4.347% CaO, 4.35% MgO, 44.581% SiO <sub>2</sub> , 1.111% K <sub>2</sub> O, 2.466% Na <sub>2</sub> O, 0.198% MnO, 0.045% P, 0.043% S, 0.002% Cr <sub>2</sub> O <sub>3</sub> .  Nagrom received 168kg composite magnetite gabbro sample of PQ ½ core from the high grade zone of drillhole SDH11-12 – 18.2m-38.6m downhole. The head grade of this sample is 0.368% V <sub>2</sub> O <sub>5</sub> , 3.575% TiO <sub>2</sub> , 20.665% Fe <sub>2</sub> O <sub>3</sub> , 13.243% Al <sub>2</sub> O <sub>3</sub> , 9.10% CaO, 4.469% MgO and 44.591% SiO <sub>2</sub> .  **Concentrate Samples**  Magnetic concentrate samples used in the sulphuric acid leach testwork



										Lead	ch Ext	tracti	ons (9	%)	Mas	Temp
		Core Hole ID	Agitated Test	Initial Grind Size	Concentrate Size	Acid %	Pulp Density %		Time (days)	v	Fe	Ti	Mg	AI C	a %	°C
			ConAVL#19 ConAVL#16 CONAVL#17	0.4mm 0.5mm 0.5mm 0.5mm 0.5mm	HG P80 0.15mm HG P80 0.15mm HG P80 0.075mm HG P80 0.075mm HG P80 0.15mm HG P80 0.15mm HG P80 0.15mm		30 20 30 20 30 30 35	72 72 72 72 72 72 72	3 3 3 3	96 95 94 94 95 95 95	81 82 82 75 75 76	57 50 52 55	55 58 59 39 37 39	55 3. 49 3. 51 4. 47 3. 44 4. 37 2. 36 3.	06 4 98 4 57 4 35 4 38 4	4 70 2 70 2 70 3 70 3 70
		SDH11-12	ConAVL#20	0.5mm	HG P80 0.15mm HG P80 0.15mm	20 20				95 95	80	62 56	40	49 4.		
		The leac assayed 482mg/L Nagrom involved was purit produce	87,763mg/L Mn, 145mg used a 5L so loading, scre fied by Hydro a high purity	e leach to l	tests itemised at 882mg/L Ti, 21-93mg/L P and 7r ole of the Bulk Coand stripping the precipitate a croduct that assa	43mg/L sompose organude Tayed 9	/L V, 686 Si. site Lead anic extra īiO₂ prec 99.73% 1	55mg/l chate t actant. ipitate ΓiO <sub>2</sub> .	L AI, 37 to comp A solu	711m plete ution as fu	the stranger	SX to aying r trea	762m estwo j ~1g, ated p	ork. S /L Ti a orior to	a, 295i	mg/L K, g/L Fe pation to
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.).	estimate Metallurg three me • SDI • SDI	. Holes drille gical testwork tallurgical di H11-06 - 19r H11-09 - 21-	ed vertion k report amond m-34.8m 37.5m (	) drilling were co cal. ed in this annou drill core hole (F n (High Grade Zo (High Grade Zor 6m (High Grade	ncem igure one). ne).	nent was 2 and T	comp	leted o							
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	7														
	Measures taken to maximise sample recovery and ensure representative nature of the samples.  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.	J														



Logging	Whether core and chip samples have been geologically and geotechnically	DD core and RC chips were geologically logged, with descriptions of mineralogy and lithology noted.						
	logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.							
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging was generally qualitative in nature. DD core photographed wet.						
	The total length and percentage of the relevant intersections logged.	SDH11-06 - 0m-39.4m, 100% logged.						
		SDH11-09 – 0m-40.9m, 100% logged. SDH11-12 – 0m-41m, 100% logged.						
Sub-sampling	If core, whether cut or sawn and whether quarter, half or all core taken.	DD core was cut in half with a core saw. Some half sections sawn in quarters. ¼ and ½ core used in testwork.						
techniques and	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled	Not applicable as samples used in the reported testwork were DD core.						
sample .	wet or dry.							
preparation	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Whole continuous lengths of DD ½ core samples collected, composited and used in testwork. These were collected to represent the composite intervals of the High Grade Zone.						
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Subsampling is performed during the preparation stage according to the metallurgical laboratories' internal protocol.						
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half	Use of DD core in metallurgical testwork gives a continuous insitu sample. PQ ensures high recovery rates. DD core twinned previous RC drill holes. Whole sample interval used in testwork.						
	sampling.							
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate to the grain size of the material being sampled.						
Quality of assay	The nature, quality and appropriateness of the assaying and laboratory	Nagrom Testwork						
data and laboratory tests	procedures used and whether the technique is considered partial or total.	All solid samples have been analysed via XRF. The prepared sample is fused in a lithium borate flux with a lithium nitrate additive. The resultant glass bead is analysed by XRF. Loss on Ignition (LOI) is also conducted						
laboratory tests		to allow for the determination of oxide totals.						
		All solution samples are diluted and then analysed by ICP. Dilutions bring the concentration level to within the						
		analytical range of the ICP instruments. Diluents are matched to sample matrix.						
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the	No geophysical data was collected.						
	parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.							
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates,	Nagrom is certified to a minimum of ISO 9001:2008.						
	external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Traggion to solution to a minimum of 188 oct 1.2000.						
Verification of sampling and	The verification of significant intersections by either independent or alternative company personnel.	Significant intersections have been verified by alternative company personnel.						
assaying	The use of twinned holes.	All metallurgical DD core holes twinned previous RC holes. In addition, all three metallurgical holes used in this announcement are one of a set of three holes drilled at the same location. For example, SDH11-12 has						
		been twinned by SDH11-13 and SDH11-14 (see Figure 2 and Table 1).						
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Templates have been set up to facilitate geological logging. Prior to the import into the central database, logging data is validated for conformity and overall systematic compliance by the geologist. Assay results are						
	storage (physical and electronic) protocols.	received from the laboratory in digital format. Assays, survey data and geological logs incorporated into a						
		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	Almost 90% of the collars used in the resource estimate have been surveyed using a differential global positioning system (DGPS) instrument, with the remaining surveyed using a hand-held GPS. Downhole						
ροιπιδ	estimation.	deviations have been measured by downhole survey instruments on 3 holes only using a Globaltech						
		Pathfinder digital downhole camera. All but four holes are vertical. All metallurgical holes are vertical. The						
		vertical and shallow nature of the drilling means that the absence of downhole surveys is not considered a						
	Charling the mid water was	material risk.						
	Specification of the grid system used.	The adopted grid system is GDA 94 Zone 52.						



	Quality and adequacy of topographic control.	A topographic file provided by KRR was calibrated for use in the Mineral Resource estimate using DGPS and GPS collar data. The Competent Person considers that the topography file is accurate given the use of DGPS data in the Mineral Resource area.
Data spacing and distribution	Data spacing for reporting of Exploration Results.	RC drill spacing is mostly 250 m by 250 m at the Central deposit, closing down to 100 m by 100 m in the western area (see Figure 2).  Metallurgical DD core holes are spaced about 500 m apart (see Figure 2).
	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.	The Competent Person believes the mineralised domains have sufficient geological and grade continuity to support the classification applied to the Mineral Resources given the current drill pattern.
	Whether sample compositing has been applied.	Metallurgical samples were composited to represent the High Grade Zone within the magnetite gabbro and within the resource envelope. This was considered appropriate given the metallurgical testwork was designed to test the high grade zones of the mineralisation and it provided for a bulk sample suitable for the testwork.
Orientation of data in relation	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	All metallurgical DD core holes are vertical. This allows the holes to intersect the mineralisation at a high-angle as the magnetite gabbro has a very shallow dip to the east.
to geological structure	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.	The relationship between the drilling orientation and the orientation of key mineralised structures is not considered to have introduced a sampling bias.
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 DD core samples 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.  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 5 Exploration Licences, three Mining Leases and two Miscellaneous Licences. Details are listed in Table 1 Schedule of Tenements held at 31 March 2021 reported previously in the March 2021 Quarterly Report. The Speewah testwork 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 Resources Limited), located over the Speewah Dome, 100km SW of Kununurra in the East 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.	No exploration completed by other parties is relevant for the metallurgical testwork reported herein.



Criteria	JORC Code explanation	Commentary
Geology  Drill hole	Deposit type, geological setting and style of mineralisation.  A summary of all information material to the understanding of the exploration	The ferrovanadium titanium (Ti-V-Fe) deposits represent part of a large layered intrusion (the Hart Dolerite), which was intruded c1790 Ma into the Palaeo-Proterozoic sediments and minor volcanics of the 1814 Ma Speewah Group in the East Kimberley Region of Western Australia.  The deposits occur within the Speewah Dome, which is an elongated antiform trending N-S. The dome is about 30 km long and attains a maximum width of about 15 km. The Hart Dolerite sill forms the core of the dome.  Since the deposit discovery in 2006, at least two distinct types of felsic granophyres and three mafic gabbros have been identified in the Hart Dolerite as follows:  • K felsic granophyre (youngest)  • Mafic granophyre  • Pegmatoidal gabbro  • Magnetite gabbro (host unit)  • Felsic gabbro (lodest).  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. Given the mode of formation, mineralisation displays excellent geological and grade continuity which was considered when classifying the Mineral Resource estimate.  Exposure is limited and fresh rock either outcrops or is at a shallow depth of a few metres.  Ti-V-Fe mineralisation occurs as disseminations of vanadiferous titano-magnetite and ilmenite.  Within the tenements the vanadium deposits have been divided into three deposits — Central, Buckman and Red Hill. The test work reported in this announcement was sampled from the Central vanadium deposit (Figure 1).  High purity alumina (HPA) is sourced from samples from the same magnetite gabbro unit within the Central deposit that hosts the Ti-V-Fe deposit.
Information	results including a tabulation of the following information for all Material drill holes:  easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. 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.	Locations of diamond (DD) core holes, including metallurgical core holes used in this announcement, are shown on Figure 2 and Table 1.
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.	Exploration results are not being reported.
	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.	Continuous lengths of ½ core composited for metallurgical samples from the Low Grade and High Grade Zones.
	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	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	Due to the very shallow dip of the mineralisation, the vertical metallurgical DD core holes represent almost the true width of the mineralisation.



Criteria	JORC Code explanation	Commentary
widths and intercept lengths	lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
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.	Figure 2 shows the location of diamond core holes within the Central Vanadium deposit referred to in this announcement.
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.	2019, 22 January 2020, 24 March 2020, 23 April 2020 and 13 May 2020.  Reports on previous metallurgical and study 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, 30 January 2018, 27 February 2018, 21 March 2018, 25 June 2018, 23 July 2018, 15 October 2018,19 November 2018, 18 January 2019, 1 March 2019, 21 March 2019, 22 March 2019, 9 May 2019, 7 June 2019, 27 September 2019, 26 November 2019, 6 December 2019, 22 January 2020, 24 March 2020, 23 April 2020, 13 May 2020, 17 June 2020, 7 September 2020 and 13 October 2020, 11 November 2020, 19 November 2020, 26 November 2020, 15 December 2020, 25 March 2021, 30 April 2021, 21 May 2021 and 16 June 2021.
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 KRR ASX announcements 26 May 2017, 1 April 2019 and 6 November 2019.
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 tests are planned to refine and optimise the solvent extraction process to precipitate $\text{TiO}_2$ and $\text{V}_2\text{O}_5$ .