

QUEENSLAND PROJECTS WITHIN ENRICHED VANADIUM MINERALISED ZONE**HIGHLIGHTS**

- Pre-acquisition due diligence on Vanadium Mining's (VanMin) four Queensland projects – Sharptooth, Spike, Cera and Petrie – confirms they are all within an enriched vanadium mineralised zone, with significant exploration upside
- Within each project area are significant, outcropping and below surface, occurrences of the Toolebuc Formation, which is an oil shale highly prospective for vanadium mineralisation and secondary oil-bearing potential
- This finding has been substantiated through:
 - Reviewing historic geochemical and drill-hole data; and
 - Evaluating exploration undertaken by peers Intermin Resources (ASX: IRC) and Lontown Resources (ASX: LTR) which are close to the Sharptooth project and within the Toolebuc Formation
 - ❖ Notably, IRC's JORC (2012) compliant total resource is 2,579Mt @ 0.32% V₂O₅¹ while LTR's maiden inferred resource is 83.7Mt @ 0.30% V₂O₅²
- There are circa 170 air-core drill-holes, averaging 30m depth, across the north-south trending Spike, Cera and Petrie projects (completed 2010) which have a combined 150km strike length with widespread elevated V₂O₅ assay results
- Notably, the Cera project has numerous intercepts exhibiting elevated assay results up to 0.58% V₂O₅
- Assessing the Queensland projects holistically, the geology team believes there is adequate historic drilling and sampling data to potentially geologically model a JORC (2012) compliant inferred resource
- This is a key positive at this early stage of the due diligence review, as it materially de-risks the four Queensland projects

Hardey Resources Executive Chairman, Terence Clee commented: *"The early due diligence findings are highly encouraging, particularly the confirmed prevalence of the Toolebuc Formation across the projects. More significantly, the Board is delighted with the prospect of being able to model a JORC compliant inferred vanadium pentoxide resource, as this materially de-risks this Queensland projects."*

Hardey Resources Limited's (ASX: HDY) ("HDY" or "the Company") Board is pleased to present the preliminary findings from the geology team on VanMin's four Queensland projects.

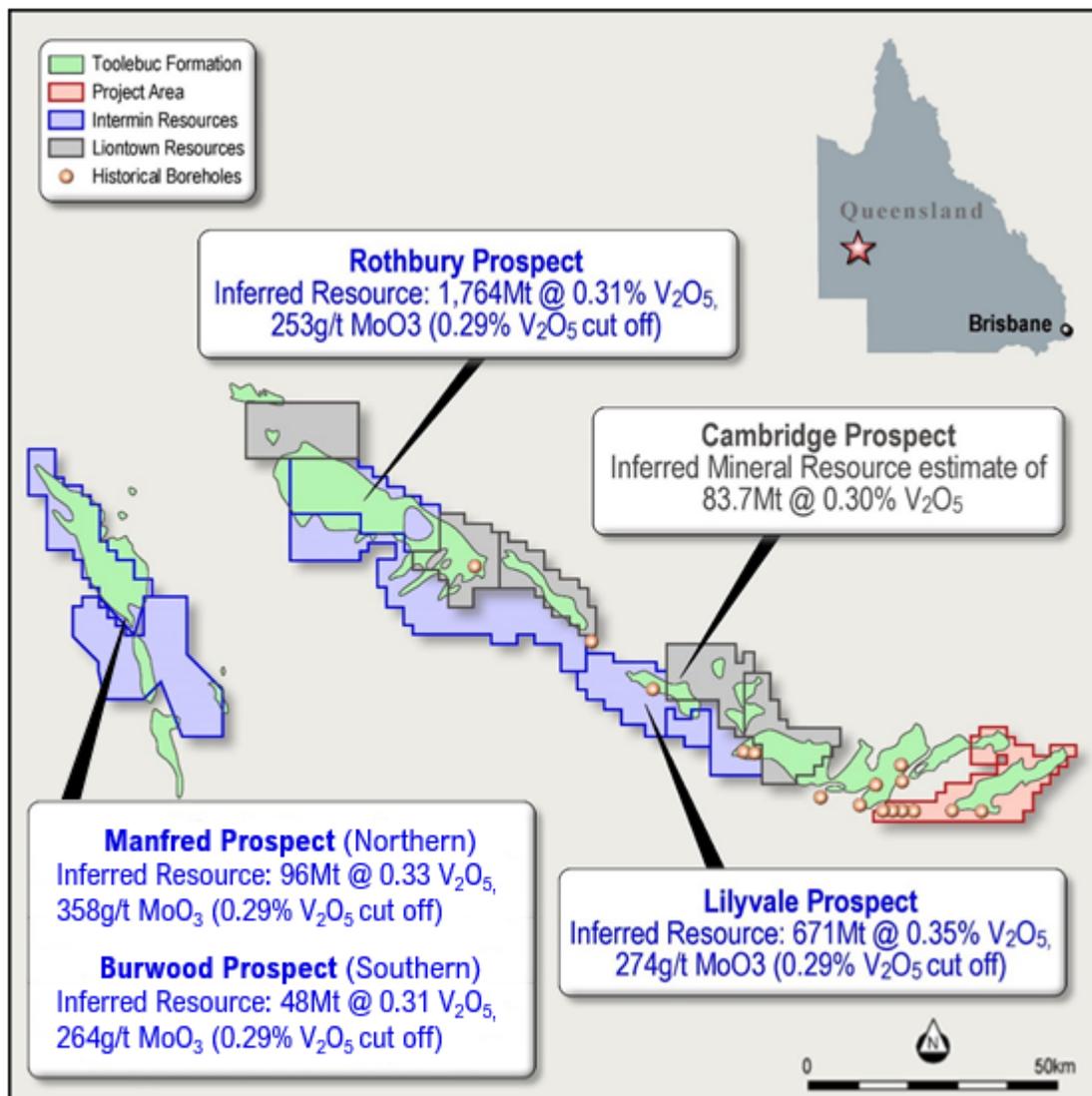
ENRICHED VANADIUM MINERALISED ZONE

Toolebuc Formation the key

The commonality with the four Queensland projects – Sharptooth, Spike, Cera and Petrie – is outcropping and below surface occurrences of the Toolebuc Formation. In geological terminology, this is an oil shale that is prospective for vanadium mineralisation. Notably, the Toolebuc Formation has a shallow, favourable dip and occurs from surface to 5m below. Typically, the Toolebuc Formation’s thickness below surface averages 12m but this can reach 25m in places.

Historic surface sampling and drill-hole assay results within the region confirm vanadium mineralisation is apparent within the Toolebuc Formation. Moreover, peers IRC and LTR have confirmed resources along strike that align with the Sharptooth project (Figure 1).

FIGURE 1: SHARPTOOTH PROJECT IN RELATION TO PEERS



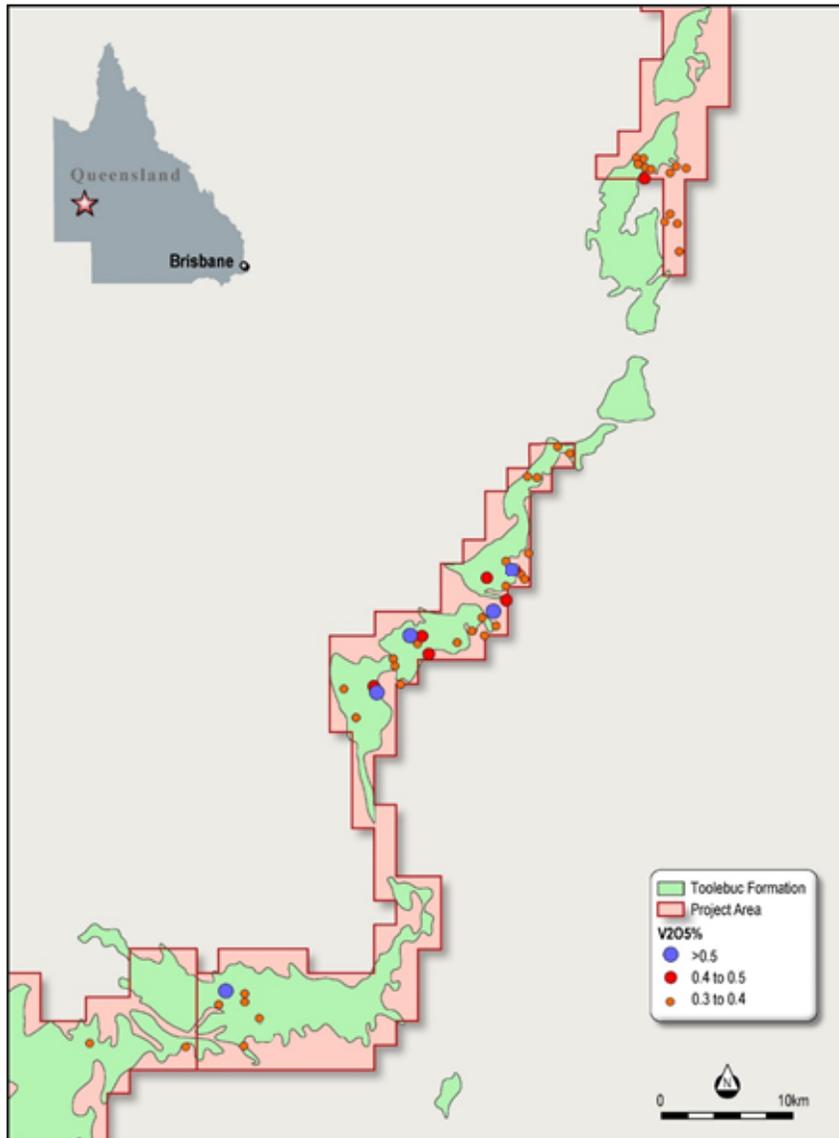
Source: HDY geology team, LTR ASX Release 30 July 2018 and IRC ASX Release 20 March 2018

Illustrating the extent of mineralisation, IRC have reported a JORC (2012) compliant total resource for the Richmond project of 2,579Mt @ 0.32% V₂O₅ (0.29% cut-off)¹, while LTR announced a maiden inferred resource of 83.7Mt @ 0.30% V₂O₅ (0.29% cut-off)². The Sharptooth project has five historical drill-holes with V₂O₅ assay values up to 0.32% which exceeds LTR's average grade but is in line IRC's reading.

Historical drill-holes

Between 2008 -13, over 170 air-core drill-holes were completed within the Spike, Cera and Petrie projects to an average depth of 30m. The geology team have reviewed the drill-holes within the tenure and reported grades up to 0.5% V₂O₅. The future focus will be to expand the area of historic drill-hole interpretation to extrapolate the data across the projects, which have a strike length of 150km, with the aim of defining an exploration target (Figure 2).

FIGURE 2: SPIKE, CERA AND PETRIE PROJECTS – V₂O₅ GRADES



Source: HDY geology team

Next steps

Further work to ascertain if a JORC compliant resource can be determined from historic data, then progress due diligence on the Northern Territory assets.

For and on behalf of the Board



Terence Clee
Executive Chairman

COMPETENT PERSON'S STATEMENT:

The information in this report that relates to Geological Interpretation, Historical Exploration Results, or Historical Mineral Resources is based on information compiled by Nicholas Ryan, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Ryan has been a Member of the Australian Institute of Mining and Metallurgy for 12 years and is a Chartered Professional (Geology). Mr Ryan is employed by Xplore Resources Pty Ltd. Mr Ryan has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Ryan consents to the inclusion in the report of the matters based on his information and the form and context in which it appears.

References

1. IRC ASX Release 20/03/2018
2. LTR ASX Release 30/07/2018
3. HDY ASX Release 19/07/2018
4. Table 1 Information – refer to Appendix A

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Appendix A - JORC Code, 2012 Edition – Table 1 Report Template

Drilling results summarized in the Table 1 Sections below are associated with the Spike, Cera, and Petrie projects.

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> 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 pulverized 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. 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects – Hancock Exploration Management Services, on behalf of Jacaranda Alliance JV, from May to August 2010, drilled at least 169 aircore drillholes accumulating to 5051m of drilling, with a total depth range from 25 to 30m within the Vanadium Mining project areas. “Check samples were analysed by ALS Chemex in Mt Isa to provide calibration factors for correcting the Niton XRF readings”. No further sampling techniques details were accessible from the QDEX publicly available reports. Sample intervals were obtained on a 1m basis from down hole depths from aircore drilling, samples were only taken on an integer depth basis. Samples were analysed at 1m intervals using a hand-held Niton XRF spectrometer for elements U, Cu, Pb, Zn and V. The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
Drilling techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects – Aircore Drilling was the drilling method that Jacaranda Alliance JV used for the exploration campaign. No further drilling technique details were provided. The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project, additional drilling would be required to estimate and report an exploration target or a mineral resource to the JORC (2012) Code. No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.

Criteria	JORC Code explanation	Commentary
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Aircore Drilling was the drilling method that the Jacaranda Alliance JV used, no further information had been reported on the drilling process and sample recovery in their tenure reporting. • The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<i>Logging</i>	<ul style="list-style-type: none"> • <i>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.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – In annual reporting Jacaranda Alliance JV states it compiled all lithological data for the aircore holes. The lithology for each 1m interval was recorded in the analyses txt files attached to the annual reports. The lithology of each 1m interval was categorised into either soil, mudstone, limestone, muddy limestone, calcareous limestone or coquinite. • The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> • <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> • <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> • <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> • <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Aircore Drilling samples were obtained at 1m intervals and tested by handheld Niton XRF. Check samples were analysed by ALS Chemex in Mt Isa to provide calibration factors and analytical data was compiled and was re-calculated using check samples analysed by ALS. No further information had been reported on the drilling and sampling process. • The Competent Person considers that the drilling, sampling, assay results are

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> 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. Whether sample sizes are appropriate to the grain size of the material being sampled. 	<p>appropriate for consideration of the mineralisation potential of the project, additional drilling would be required to estimate and report an exploration target or a mineral resource to the JORC (2012) Code.</p> <ul style="list-style-type: none"> No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects - Annual reports by the Jacaranda Alliance JV states all samples were analysed using a hand-held Niton XRF spectrometer for at least U, Cu, Pb, Zn and V. Vanadium assay data was partially reported to zero decimal places in the original historical tenure reports. The original data was sourced from the original tenement holder through a government appointed intermediary and validated against the available original data and found to match. Historical tenure report CR67931 stated “Check samples were analysed by ALS Chemex in Mt Isa to provide calibration factors for correcting the Niton XRF readings” for elements U, Cu, Pb, Zn and V – the outcome of the calibration process is not publicly available. A subset of holes were logged where possible using an Auslog gamma probe and assessed for Uranium mineralization potential. No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects - All samples were analysed using a hand-held Niton XRF spectrometer. Check samples were analysed by ALS Chemex in Mt Isa to provide calibration factors for correcting the Niton XRF readings. Analytical data was compiled and was re-calculated using check samples analysed by ALS. No further details relating to verification were provided in the publicly available historical tenure reports on QDEX. The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code.

Criteria	JORC Code explanation	Commentary
<i>Location of data points</i>	<ul style="list-style-type: none"> • 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. • Specification of the grid system used. • Quality and adequacy of topographic control. 	<ul style="list-style-type: none"> • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects. • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Drillholes were surveyed by handheld GPS. Hancock Exploration Management Services, on behalf of Jacaranda Alliance JV, from May to August 2010, drilled at least 169 aircore drillholes accumulating to 5,051m of drilling, with a total depth range from 25 to 30m within the Vanadium Mining project areas. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> • Data spacing for reporting of Exploration Results. • 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. • Whether sample compositing has been applied. 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Drillhole spacing of traverses varies from approximately 200m to 1km based on targets distribution throughout the projects. • Drilling spacing reported in this announcement is indicative of the local geological structures, intercept width and pXRF grade values. • The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • 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. 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Drilling occurred perpendicular / vertical into the ground surface, the mineralisation targeted is the Toolebuc Oil Shale that contains Vanadium mineralisation, dipping at approximately 1-2 degrees from horizontal, occasionally up to 5 degrees within the project areas. • Given the drilling orientation as near perpendicular, with shallow drilling (Total Depth =< 100m), the drilling intercepts approximate true thickness of the vanadium mineralisation in assayed samples that show high grades. The drilling can provide confidence in laterally continuity of the drilling data, based on

Criteria	JORC Code explanation	Commentary
		<p>appropriately determined appropriate drillhole spacing and geological interpretation.</p> <ul style="list-style-type: none"> No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects – It is assumed that the sample security measures in place at the time of the historical drilling, sampling, and ALS sample dispatch were assumed to be comparable to the contemporary sample security measures.
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<ul style="list-style-type: none"> No formal audits or reviews of the Central Coast Exploration N.L. sampling techniques and data have taken place. No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Vanadium Mining Pty Ltd holds 100% of the following mineral tenure applications: <ul style="list-style-type: none"> Sharptooth Project, Queensland (“QLD”), Australia – Tenure Identifier EPM26801 [Exploration Permit Mineral Application], 100 sub-blocks, submitted to the QLD Department of Natural Resources, Mines, and Energy (“DNRM”) on the 23 February 2018; Cera Project, QLD, Australia – Tenure Identifier EPM26802 [Exploration Permit Mineral Application], 100 sub-blocks, submitted to the DNRM on the 26 February 2018; Spike Project, QLD, Australia – Tenure Identifier EPM26803 [Exploration Permit Mineral Application], 100 sub-blocks, submitted to the DNRM on the 26 February 2018; Petrie Project, QLD, Australia – Tenure Identifier EPM26804 [Exploration Permit Mineral Application], 100 sub-blocks, submitted to the DNRM on the 26 February 2018; Wollagalong Project, Northern Territory (“NT”), Australia – Tenure Identifier EL31841 [Exploration Licence Application], submitted to the NT Department of Primary Industries and Resources (“DPIR”) on the 5

Criteria	JORC Code explanation	Commentary
		<p>March 2018; &</p> <ul style="list-style-type: none"> ➤ Chisholm Project, NT, Australia – Tenure Identifier EL31842 [Exploration Licence Application], submitted to the NT DPIR on the 5 March 2018. <ul style="list-style-type: none"> • Note: No drilling or sample results are reported in this announcement for the Northern Territory Vanadium Mining Pty Ltd projects.
Exploration done by other parties	<ul style="list-style-type: none"> • <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • The announcement contains the following publicly reported exploration activity: <ul style="list-style-type: none"> ➤ Hancock Exploration Management Services, on behalf of Jacaranda Alliance JV, from May to August 2010, drilled at least 169 aircore drillholes accumulating to 5,051m of drilling, with a total depth range from 25 to 30m within the Vanadium Mining project areas. • Upon the completion of comprehensive Desktop Studies are complete, additional Historical Exploration Activity could be publicly reported.
Geology	<ul style="list-style-type: none"> • <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> • For its Queensland projects Vanadium Mining Pty Ltd is targeting the following styles Early Cretaceous Toolebuc Shale: this is an oil-bearing shale that contains vanadium mineralisation occurring in the Eromanga Basin and exposed in outcrop throughout Central and Northern Queensland. The Eromanga Basin is a shallow dipping depression where the Toolebuc Shale occurs at the surface. • The Toolebuc Shale contains sediment that predominantly consists of black carbonaceous shale, bituminous shale, minor siltstone, with limestone lenses and coquinites (mixed limestone and clays). Clays associated with the Toolebuc Shale are vanadium bearing, associated with pyrite, or are chemically bound to the fresh oil kerogens. • The Toolebuc Shale dips between 1-10 degrees from horizontal, near outcrops of the Vanadium Mining projects is typically 1-2 degrees and can be up to 5 degrees dip.
Drill hole Information	<ul style="list-style-type: none"> • <i>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:</i> <ul style="list-style-type: none"> ○ <i>easting and northing of the drill hole collar</i> ○ <i>elevation or RL (Reduced Level – elevation above sea level in meters) of the drill hole collar</i> ○ <i>dip and azimuth of the hole</i> ○ <i>down hole length and interception depth</i> ○ <i>hole length.</i> • <i>If the exclusion of this information is justified on the basis that the</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Hancock Exploration Management Services, on behalf of Jacaranda Alliance JV, from May to August 2010, drilled at least 169 aircore drillholes accumulating to 5,051m of drilling, with a total depth range from 25 to 30m within the Vanadium Mining project areas. • The drillhole dataset with regard to drillhole collar locations/sample locations is incomplete and efforts are being made to source the complete dataset from the original tenement holder: approximately 60 boreholes have been identified

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	<p><i>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.</i></p>	<p>as potentially residing in the Spike, Cera, & Petrie project areas in historical tenure maps, however borehole collar co-ordinate information was not tabulated in the body of the historical tenure reports, nor the borehole names clearly legible for all holes on the historical tenure maps.</p> <ul style="list-style-type: none"> • During May-August 2010 Hancock Exploration Management Services completed an air core drilling programme in EPMs15234, 15235, 15236, 15240, 15241, 15298 and 15299. A total of 413 air core holes were drilled for 12,400 meters – there are at least 169 aircore drillholes accumulating to 5,051m of drilling, with a total depth range from 25 to 30m within the Vanadium Mining project areas. • The currently available drillhole and subsequent sample/pXRF information were sourced from multiple historical tenure reports that include: 1) CR64271, 2) CR64273 & 3) CR64276, & 4) CR67931. pXRF had been conducted on 3,581 samples for boreholes that are known to be within the Vanadium Mining QLD Spike, Cera, & Petrie project areas. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<p><i>Data aggregation methods</i></p>	<ul style="list-style-type: none"> • <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i> • <i>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.</i> • <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Hancock Exploration Management Services, on behalf of Jacaranda Alliance JV, from May to August 2010, drilling sample results were reported on the historical portable Niton XRF values obtained on the interval sampled and assayed, no data aggregation occurred or had been reported in this announcement. No ALS assay results have been reported in this announcement. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<ul style="list-style-type: none"> • <i>These relationships are particularly important in the reporting of Exploration Results.</i> • <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> • <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg ‘down hole length, true width not known’).</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Drilling occurred perpendicular / vertical into the ground surface, the mineralisation targeted is the Toolebuc Oil Shale that contains Vanadium mineralisation, dipping at approximately 5 degrees from horizontal. • The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly

Criteria	JORC Code explanation	Commentary
		<p>evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code.</p> <ul style="list-style-type: none"> No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<p><i>Diagrams</i></p>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> All QLD projects – appropriate plan view diagrams are shown in the announcement to display vanadium mineral prospectivity. The Competent Person considers that the drilling, sampling, assay results are appropriate for consideration of the mineralisation potential of the project. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code. No drilling or sample results are reported in this announcement for
<p><i>Balanced reporting</i></p>	<ul style="list-style-type: none"> <i>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.</i> 	<ul style="list-style-type: none"> Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. Spike, Cera & Petrie projects – The currently available drillhole and subsequent sample/pXRF information were sourced from multiple historical tenure reports that include: 1) CR64271, 2) CR64273 & 3) CR64276, & 4) CR67931. Appropriate plan view diagrams are shown in the announcement to display vanadium mineral prospectivity. The geological data can be geologically modelled, the historical drillhole data & any subsequent developed geological model & would need to be thoroughly evaluated/interrogated, before consideration of any reporting of an exploration target or a mineral resource to the JORC (2012) Code. Statistical Analysis of the lithology recorded with the pXRF values reveal (ignoring the zero value readings): <ul style="list-style-type: none"> Calcareous Mudstone V₂O₅ pXRF values: 0.01 to 0.22%, average 0.04% Coquinite V₂O₅ pXRF values: 0.03 to 0.58%, average 0.17% Limestone V₂O₅ pXRF values: 0.02 to 0.58%, average 0.04% Muddy Limestone V₂O₅ pXRF values: 0.01 to 0.22%, average 0.40% Mudstone V₂O₅ pXRF values: 0.02 to 0.49%, average 0.06% Soil V₂O₅ pXRF values: 0.03 to 0.17%, average 0.06% All Samples V₂O₅ pXRF values: 0.01 to 0.58%, average 0.09% No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.

Criteria	JORC Code explanation	Commentary
<p><i>Other substantive exploration data</i></p>	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • Sharptooth project – historical drilling reported previously in the HDY ASX Release dated 19/07/2018, refer to that Announcement and Table 1 for further details. • Spike, Cera & Petrie projects – Further lithological descriptions were provided during the geological mapping of the earlier reconnaissance stage. • The current announcement used two other forms of substantive exploration data: • 1) QLD – the Vanadium Mining Pty Ltd Geology Team generated an interpretation of the outcrop-subcrop zone and extents of Toolebuc formation at the edges of the Eromanga Basin, based on the following datasets: <ul style="list-style-type: none"> ➤ 1a) Ozimic, S. and Saxby, J.D., 1983. Oil Shale Methodology: An examination of the Toolebuc Formation and the laterally contiguous time equivalent units, Eromanga and Carpentaria Basins. Bureau of Mineral Resources and CSIRO research project; ➤ 1b) Lewis, S.E., Henderson, R.A., Dickens, G.R., Shields, G.A., & Coxhell, S., 2010. The geochemistry of primary and weathered oil shale and coquina across the Julia Creek vanadium deposit (Queensland, Australia). Miner Deposita 45: 599–620; ➤ 1c) Smart, J., Grimes, K.G., Douth, H.F., & Pinchin, J., 1980. The Mesozoic Carpentaria Basin and the Cainozoic Karumba Basin, North Queensland. Bulletin 202, Department of Natural Resources & Energy, Bureau of Mineral Resources, Geology & Geophysics. Australian Government Publishing Service, Canberra; ➤ 1d) Coxhell, S., & Fehlberg, B., 2000. Julia Creek Vanadium and Oil Shale Deposit. AIG Journal – Applied geoscientific research and practice in Australia; & ➤ 1e) MinesOnlineMap information publicly available from the QLD Department of Natural Resources and Mines, and the Geological Survey of Queensland. • No drilling or sample results are reported in this announcement for the other Vanadium Mining Pty Ltd projects.
<p><i>Further work</i></p>	<ul style="list-style-type: none"> • <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> • QLD – within the QLD project areas aerial photo interpretation and field mapping are planned to refine the outcrop-subcrop zone and maximum extent for the Toolebuc Formation identified by the Vanadium Mining Geology Team. Future exploration is then anticipated to be planned down dip of the outcrop-subcrop zone of the Toolebuc Formation. • All Vanadium Mining Pty Ltd projects require technical evaluation to prioritize areas within the projects to focus mineral exploration efforts, to systematically explore for vanadium mineralisation.