18 March 2019

Exceptional metallurgical plant testwork confirms world class characteristics of SPD Vanadium Project, endorsing Tando's production strategy

Plant simulation testwork delivers high quality vanadium concentrate consistent with previous laboratory results

Key Points

- **Metallurgical testwork produces concentrate grading 2.2% V_2O_5, which is among the highest reported concentrate grades globally**
- **Process plant simulation tests on bulk sample deliver results consistent with previous Davis Tube laboratory results**
- **Results continue to support Tando's plan for early production using near-surface high-grade zones at SPD**
- **Strategy capitalises on the shallow, high-grade, low-cost nature of the SPD Vanadium deposit and the simple magnetic separation process**
- **Scoping Study on this near-term, low CAPEX Phase 1 Production Project nearing completion**
- **Offtake discussions underway with a number of interested parties**

Tando Resources (ASX: TNO, **Tando** or **the Company**) is very pleased to announce outstanding results from large scale, plant simulation testwork at its SPD Vanadium Project in South Africa.

Concentrate grading 2.2% V2O5 was returned from bulk samples processed via a flowsheet simulating the proposed process route (Figure 1), producing a high quality product based to the high vanadium and low silica / alumina contents (Table 1).

These results compare well with previous, laboratory-scale, Davis Tube results (refer ASX Announcements 14 January 2019 and 29 January 2019) which is an excellent outcome for scaling up of bench top testwork into large scale trials.

Table 1. *Analysis Results from Testwork Samples*

Sample	V_2O_5%	TiO_2%	SiO_2%	Al_2O_3%	Fe%
3357: magnetic concentrate	**2.19**	12.0	3.25	4.82	54.6
3358: magnetic concentrate	**2.18**	12.1	3.51	4.91	54.2
3357: non-magnetic fraction	0.07	2.13	46.3	23.8	9.6
3358: non-magnetic fraction	0.16	2.91	44.5	22.9	12.6

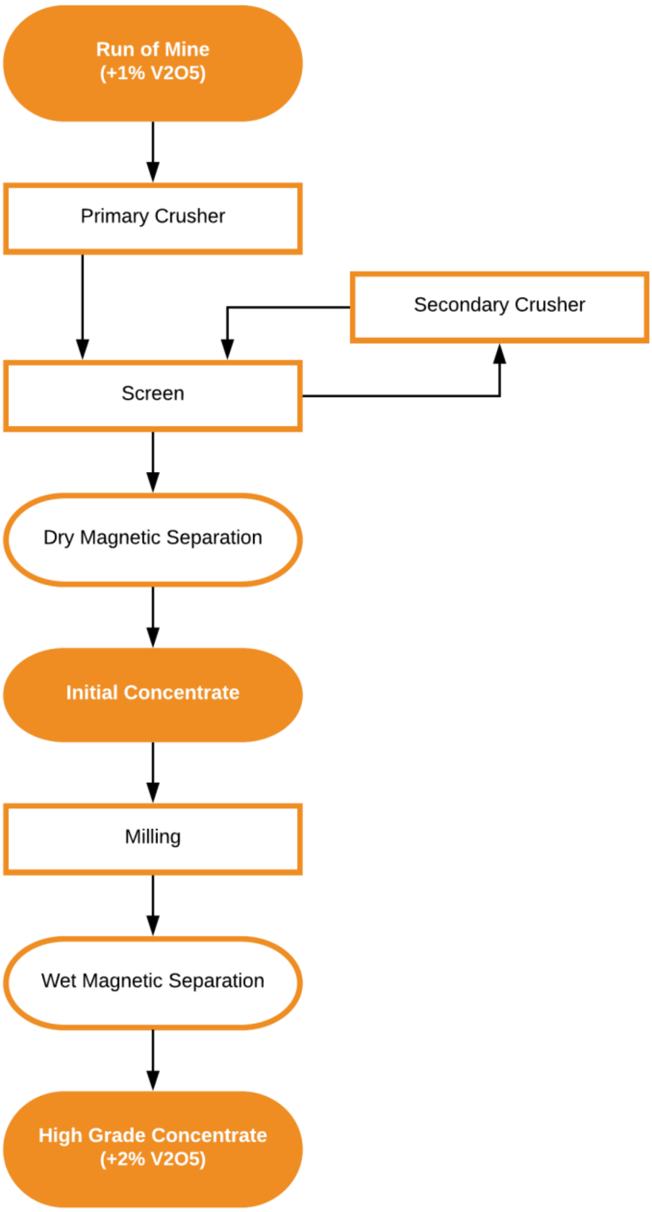

Figure 1. *Schematic process flowsheet for the SPD Project.*

Based on these results and the shallow, high-grade nature of the vanadium mineralisation it is anticipated a low-cost operation can be established, generating early cashflow for the Company. This operation takes advantage of both the high-grade zone of 87Mt at 1.07% V_2O_5 contained within the global Mineral Resource at the SPD Vanadium Project (refer Appendix 1) as well as the amenability to simple beneficiation.

The viability of the near term Phase 1 Production Project will be confirmed in the Company's forthcoming Scoping Study, which is well advanced and only awaiting the completion of an updated Mineral Resource (due in 2 – 3 weeks) and refinement of mining studies based on that Resource. The completion of the testwork reported here has enabled the CAPEX and OPEX for the beneficiation plant to be costed in detail. Once the Mineral Resource is published the Scoping Study will be able to be finalised within weeks.

A bulk sample of whole HQ core from VDD024 (twin of VRC007, refer ASX Announcement 14 February 2019) grading 0.98% V_2O_5 was used for a "cradle to grave" test of the proposed process flowsheet for the SPD Project (Figure 2). The flowsheet is shown as Figure 1. Analysis of two samples taken of the concentrate produced at the end of the process has returned outstanding results as shown in Table 1.

Given the excellent recoveries into concentrate it can be seen essentially the entire vanadium content of the SPD Project falls within the magnetic concentrate. Therefore the testwork results also provide confirmation that whole rock assay results reported by the Company are representative of the recoverable vanadium content across the project. The SPD Project is one of the world's highest grade vanadium deposits on a whole rock and grade in concentrate basis (Figure 3).

***Figure 2**. Magnetic separation drum used in plant simulation testwork.*

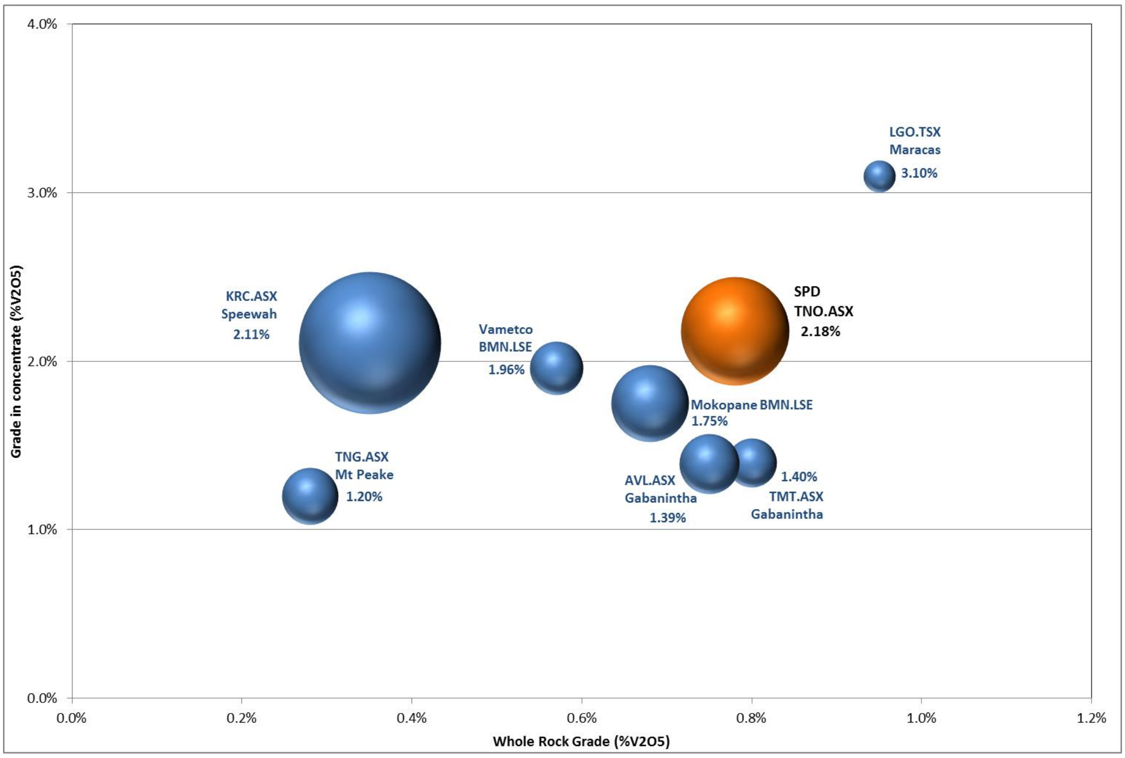

***Figure 3**.* *Global vanadium projects categorised by resource grade and grade in concentrate.*
Label states concentrate grade based on reported testwork. Bubble size denotes tonnage.
Tonnes and grade based on reported total resources, under different reporting regimes due to different host exchanges (JORC, 43-101 or SAMREC). Refer Appendix 4 for details and sources of information.

Background on Vanadium

Current day demand for vanadium arises from its established use in strengthening steel via various alloys. Consumption is currently increasing with the recent implementation of stricter standards on the strength of steel to be used in construction (specifically rebar). The use of vanadium in steel making accounts for over 90% of current vanadium demand in today's market (with the balance supplying chemical usages).

The price for >98% Vanadium Pentoxide (V_2O_5) has remained stable at approx. US$17/lb after starting 2019 at between US$15 - US$16/lb. This followed a substantial increase in price from US$3.50/lb at the start of 2017 to prices above US$30/lb (fob China, source: Metal Bulletin).

The global move towards renewable energy solutions will require a vast increase in energy storage installations. This is forecast to include an increase in the usage of vanadium redox flow batteries (**VRFB**) for large scale energy storage which provides additional longer term demand for vanadium. VRFB technology was developed in Australia and has the following advantages:

- a substantially longer lifespan than most current batteries (up to 20 years),
- being able to hold charge for a substantial time (up to 12 months),
- the ability to discharge 100% of its charge without damage,
- scalability to enable larger scale storage facilities to be constructed, and
- greater chemical stability as only a single element is present in the electrolyte.

These features make VRFBs attractive for industrial facilities or small town sized energy storage requirements. According to research conducted by Lazard (NYSE.LAZ) VRFB's already have a levelised cost of storage that is less than Li-ion battery storage by 26% to 32% on a comparative basis (full report available at https://www.lazard.com/perspective/).

Background on the SPD Vanadium Project

Global vanadium projects are summarised in Figure 3. Currently approximately 85% of the world's vanadium is produced in China, Russia and South Africa. The SPD Vanadium Project is located in one of these producing regions and has the potential to be globally significant based on its tonnage and grade in concentrate (Figure 3).

The SPD Vanadium Project is located in a similar geological setting to the vanadium mining operations of Rhovan (Glencore), Vametco (Bushveld Minerals) and Mapochs in the Gauteng and Limpopo provinces of South Africa (Figure 4). Both the Rhovan and Vametco operations include refining to generate products used in the global steel making industry and aim to develop downstream processing to produce materials used in the battery market.

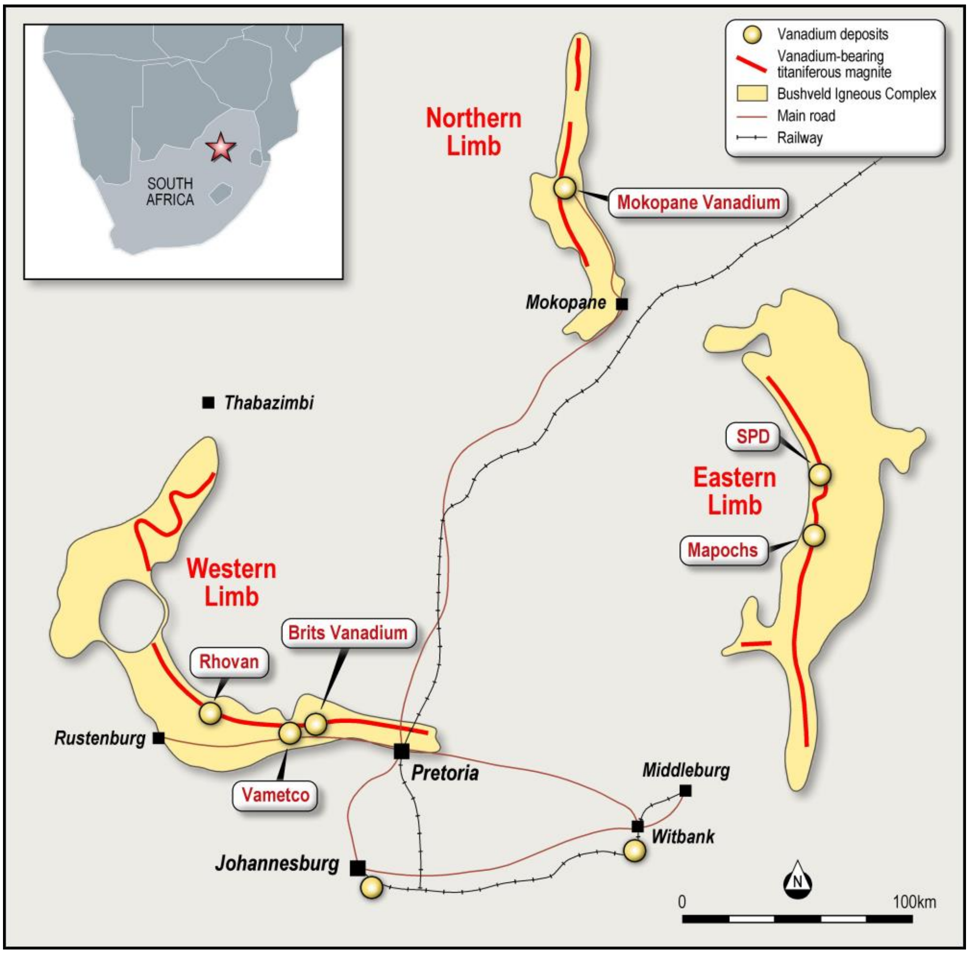

***Figure 4**. Location of the SPD Vanadium Project and other vanadium deposits in the Bushveld Igneous Complex.*

The region around the SPD Vanadium Project contains critical infrastructure such as:

- High voltage power lines and sub stations operated by the state provider ESKOM,
- Water resources including the De Hoop Dam 15km south of the project,
- Rail links,
- Sealed roads around the project area,
- Mining service companies and support business in the immediate area,
- Available skilled workforce within the local community and the region.

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Competent Persons Statement

The information in this announcement that relates to Exploration Results and other technical information relating to drilling, sampling and the geological interpretation derived from the Exploration Results complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**) and has been compiled and assessed under the supervision of Mr Bill Oliver, the Managing Director of Tando Resources Ltd. Mr Oliver is a Member of the Australasian Institute of Mining and Metallurgy and the Australasian Institute of Geoscientists. He 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 JORC Code. Mr Oliver consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in Appendix 3.

The information in this announcement that relates to metallurgical results complies with the JORC Code and has been compiled and assessed under the supervision of Mr Eugene Nel, the Managing Director of ENC Minerals (Pty) Ltd. Mr Nel is a Professional Engineer of the Engineering Council of South Africa, a Recognised Professional Organisation under the JORC Code. He 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 JORC Code. Mr Nel consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to Mineral Resources complies with the JORC Code and has been compiled, assessed and created under the supervision of Mr Kell Nielsen, BSc.(Geology), MSc.(Mineral Econ.) and a Member of the Australasian Institute of Mining and Metallurgy, the Principal of Mannika Resources Group Pty Ltd, a consultant to the Company. Mr Nielsen 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 Persons as defined in the JORC Code. Mr Nielsen is the competent person for the estimation and has relied on provided information and data from the Company, including but not limited to the geological model, database and expertise gained from site visits. Mr Nielsen consents to the inclusion in this announcement of matters based on his information in the form and context in which it appears. The Mineral Resource is based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in Appendix 3.

Disclaimer

Some of the statements appearing in this announcement may be in the nature of forward looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which Tando operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward looking statement. No forward looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Tando's control.

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This announcement is not an offer, invitation or recommendation to subscribe for, or purchase securities by Tando. Nor does this announcement constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

APPENDIX 1: Mineral Resource Statement for the SPD Vanadium Project

Table 1. *SPD Vanadium Project Global Mineral Resource*
(JORC 2012, classified as Inferred, quoted above a 0.45% V_2O_5 cut-off to 200m depth).

Layer	SG	Tonnes (Mt)	Whole Rock V_2O_5%
Upper Layer	3.5	211	0.84
Intermediate Layer	3.1	188	0.55
Lower Layer (disseminated)	3.5	137	0.77
Lower Layer (massive)	3.5	52	1.37
Total		**588**	**0.78**

Table 2. *SPD Vanadium Project Mineral Resource to 100m depth (0.45% V_2O_5 cut-off).*

Layer	Tonnes (Mt)	Whole Rock V_2O_5%
Upper Layer	155	0.84
Intermediate Layer	36	0.55
Lower Layer (disseminated)	70	0.77
Lower Layer (massive)	24	1.30
Total	**364**	**0.77**

Table 3. *SPD Vanadium Project Mineral Resource to 100m depth (0.9% V_2O_5 cut-off).*

Layer	Tonnes (Mt)	Whole Rock V_2O_5%
Upper Layer	55	1.00
Lower Layer (disseminated)	7	0.95
Lower Layer (massive)	24	1.30
Total	**87**	**1.07**

Table 4. *SPD Vanadium Project Mineral Resource to 50m depth (0.9% V_2O_5 cut-off).*

Layer	Tonnes (Mt)	Whole Rock V_2O_5%
Upper Layer	27	1.01
Lower Layer (disseminated)	4	0.93
Lower Layer (massive)	11	1.30
Total	**42**	**1.09**

Notes to Tables 1 - 4:

The Mineral Resource Estimate was completed using the following parameters:

- The SPD Vanadium Resource extends over a strike length of 4000m and has been drilled up to 150m vertically below surface (1100m down-dip);
- Mineralisation is hosted in a series of magnetite bearing layers at the contact between the Upper and Main Zone of the Bushveld Igneous Complex. These layers have been denoted the Upper, Intermediate and Lower Layers with average thicknesses of 19, 14 and 12m respectively. At the base of the Lower Layer there is a marker horizon of massive magnetite (the "MML") which is 1 – 2m thick.
- 64 drillholes (43 RC and 21 diamond core holes) were used in the resource estimate representing a total of 4018.8m of drilling. 22 RC holes and 7 diamond core holes drilled by Tando were included along with 21 RC holes and 1 diamond core hole drilled previously by Vanadium Resources (Pty) Ltd (**Vanres**) and 13 DD holes drilled by Vanadium Technology (Pty) Ltd, a subsidiary of Xstrata (**Vantech**). Drilling was carried out on sections spaced approximately 300m apart, with mineralisation intersected at approximately 150m intervals on section.
- RC drilling by Tando and Vanres was sampled via face sampling hammer, collected by a rig mounted cyclone and split using a riffle. Diamond core drilling by Tando sampled NQ core by splitting the core in half. Historical drilling also sampled diamond core, predominantly BQ size, by sawing in half.
- Samples were analysed at commercial laboratories (SGS, ALS) using pressed disc XRF.
- Quality control protocols for all drilling included the use of certified reference materials (CRMs), blanks and duplicates. For Tando drilling control samples were inserted every 20 samples for RC drilling and every 10 samples for DD drilling.
- All drillholes were surveyed in both South Africa LO29 grid (WGS84 projection) and UTM Zone 35S.
- All holes were vertical. Downhole surveys have been carried out on selected holes to confirm no excessive deviation.
- Geological domains were constructed using a 0.25% V = 0.45% V_2O_5 cut-off grade. Intersections used in the interpretation are listed in Appendix 2.
- 4 wireframe solids were constructed based on the geological interpretation (refer images below: UML = blue, IML = green, LML = red). Samples within the wireframe were composited to 1m intervals.
- Block grades were estimated using interpolation of the 1m composite data by the Ordinary Kriging method. Search ellipses were set based on geostatistics with search distances ranging from 315 to 945m along strike. A first pass search of 315m with a minimum of 14 samples and maximum of 22 samples was used. A second pass search of 473m with a minimum of 10 samples and maximum of 22 samples was then used. A third pass search of 945m with a minimum of 6 samples and maximum of 22 samples was finally used. Refer below for comparison of blocks vs drilling on section.
- The model was constrained to a depth of 200m below surface.
- A Surpac block model was used for the estimate with a block size of 20m X by 20m Y by 5m Z, with sub-blocking to 10mX by 10m Y by 2.5m Z.
- Bulk density values used for mineralisation are detailed in the table above. These were sourced from SG data measurements on core.
- The deposit has been classified as an Inferred Mineral Resource based on data quality and sample spacing. Modelling of other elements (including Fe, Ti, Si, Al, P amongst others) is recommend so that their impact on the economics of the project can be determined. Infill drilling to reduce the reliance on historical drill data, to better delineate geological features such as massive magnetite layers and later structures is recommended to improve the confidence of the model.

These notes should be read in conjunction with the information detailed in the ASX Announcement of 18 Decemeber 2018. The Company is not aware of any new information which materially changes this resource. Phase 2 or infill drilling has been completed and results will be used to update the Mineral Resource.

APPENDIX 2: Significant Drillhole Intercepts from Drilling at the SPD Vanadium Project

HOLE ID	Drill Type	EAST	NORTH	EOH (m)	UNIT	INTERSECTION (whole rock)				(magnetic concentrate)					
						From (m)	Width (m)	V_2O_5 %	TiO_2 %	Mass recovery	V_2O_5 %	TiO_2 %	Fe* %	Al_2O_3 %	SiO_2 %
VRC001	RC	801520	7247155	90	UML	3	**7**	**0.84**	**5.60**	**36%**	**2.17**	**11.7**	**57.0**	**3.94**	**1.86**
					LML	47	35	0.66	4.59	**28%**	**2.11**	**11.7**	**58.5**	**3.32**	**1.84**
					incl.	73	**9**	**1.12**	**7.49**	**47%**	**2.19**	**12.0**	**57.8**	**3.79**	**2.01**
					incl.	80	**2**	**1.62**	**10.2**	**68%**	**2.24**	**12.3**	**57.2**	**3.68**	**1.98**
VRC002	RC	802548	7245002	39		0	**24**	**0.73**	**5.02**	**29%**	**2.16**	**11.3**	**57.1**	**3.53**	**2.63**
					incl.	12	**12**	**1.00**	**6.77**	**41%**	**2.15**	**12.1**	**56.3**	**3.80**	**2.48**
					incl.	22	**2**	**1.72**	**11.2**	**74%**	**2.20**	**12.5**	**57.7**	**3.37**	**1.43**
VRC003	RC	802414	7245050	69		23	35	0.65	4.53	**28%**	**2.15**	**11.5**	**57.5**	**3.37**	**2.53**
					incl.	49	**9**	**1.04**	**6.95**	**45%**	**2.20**	**12.1**	**56.3**	**3.62**	**2.54**
VRC008	RC	802230	7245480	76	UML	23	25	0.68	4.70	**23%**	**2.42**	**8.33**	**58.1**	**3.05**	**3.96**
					incl.	40	**8**	**1.03**	**6.94**	**41%**	**2.32**	**10.6**	**59.4**	**2.91**	**1.65**
VRC010	RC	801600	7245869	134	UML	32	32	0.77	9.86	**37%**	**1.91**	**12.5**	**57.9**	**3.16**	**1.67**
					incl.	44	**7**	**1.15**	**9.15**	**55%**	**1.96**	**12.8**	**58.1**	**3.26**	**1.21**
					&	59	**4**	**0.95**	**6.30**	**40%**	**2.15**	**11.8**	**57.2**	**3.38**	**2.13**
					LML	93	38	0.64	4.45	**27%**	**2.13**	**11.5**	**58.4**	**2.94**	**2.06**
					incl.	123	**8**	**1.11**	**7.50**	**47%**	**2.19**	**12.1**	**58.4**	**3.21**	**1.45**
					incl.	129	**2**	**1.61**	**10.5**	**68%**	**2.20**	**12.6**	**58.5**	**3.08**	**0.98**
VRC004	RC	802503	7245603	46		18	**3**	**0.62**	**3.22**	*Not analysed*					
VRC005	RC	802351	7245271	62		13	37	0.65	4.52						
					incl.	42	**8**	**1.10**	**7.43**						
					incl.	48	**2**	**1.56**	**10.2**						
VRC006	RC	802723	7245283	36		16	2	0.53	3.06	*Not analysed*					
VRC007	RC	802495	7245445	38		0	**1**	**1.31**	**11.1**						
						10	**16**	**0.82**	**5.06**	*Sampled for Metallurgy*					
					incl.	24	**2**	**1.54**	**9.86**						
VRC009	RC	801520	7245793	156	UML	47	54	0.70	5.62	*Sampled for Metallurgy*					
					incl.	61	**7**	**1.06**	**8.36**						
					LML	134	**11**	**0.98**	**6.63**	*Sampled for Metallurgy*					
					incl.	143	**2**	**1.70**	**11.0**						
VRC011	RC	801250		31		*Hole abandoned before target*									
VRC012	RC	801258	7246180	54		42	4	0.59	7.9						
						Redrill of VRC011, also abandoned									
VRC014	RC	802138	7245775	66		25	19	0.56	4.05	*Sampled for Metallurgy*					
					LML	46	**12**	**1.00**	**6.71**						
					incl.	49	**9**	**1.13**	**7.47**						
					incl.	56	**2**	**1.74**	**10.6**						
VRC015	RC	802394	7245898	41		0	9	0.56	4.41	*Sampled for Environmental Study*					
						11	3	0.54	3.89						
						17	2	0.60	4.20						
						22	**9**	**1.06**	**7.09**						

					incl.	**28**	**3**	**1.45**	**9.40**						
VRC016	RC	801990	7245688	90		**0**	**11**	**0.84**	**5.80**	*Analyses pending*					
					incl.	**6**	**4**	**1.00**	**7.12**						
					UML	44	20	0.57	4.03						
					LML	**74**	**10**	**1.17**	**7.83**						
					incl	**81**	**3**	**1.71**	**11**						
VRC017	RC	802033	7245403	93		**0**	**18**	**0.80**	**5.72**						
					incl	**0**	**4**	**1.16**	**8.75**						
					incl	**14**	**4**	**0.94**	**6.78**						
					UML	49	19	0.56	4.3						
					LML	**76**	**12**	**0.98**							
					incl	**79**	**9**	**1.12**	**7.55**						
					incl	**85**	**3**	**1.46**	**9.42**						
VRC018	RC	802203	7245863	56	UML	15	14	0.60	4.31						
					LML	**36**	**11**	**0.89**	**5.98**						
					incl	**39**	**7**	**1.09**	**7.25**						
VRC019	RC	802289	7245855	41	UML	5	10	0.60	4.38						
					LML	**24**	**11**	**0.98**	**6.45**						
					incl	**27**	**8**	**1.15**	**7.66**						
					incl	**33**	**2**	**1.65**	**10.5**						
VRC020	RC	802333	7246231	56	UML	15	18	0.55	3.64						
					LML	**37**	**5**	**1.14**	**6.82**						
					incl	**40**	**2**	**1.42**	**8.70**						
VRC021	RC	802185	7246300	86	UML	47	19	0.53	3.86	*Analyses pending*					
					LML	**73**	**8**	**0.93**	**5.82**						
					incl	**79**	**1**	**1.73**	**11.1**						
VRC022	RC	802242	7246395	116	UML	56	25	0.56	3.89						
						88	4	0.53	3.15						
					LML	**94**	**15**	**0.99**	**6.25**						
					incl	**95**	**8**	**1.11**	**7.24**						
					incl	**107**	**2**	**1.44**	**8.85**						
VRC023	RC	802066	7246301	86	UML	5	8	0.75	5.50						
					IML	47	13	0.57	4.20						
					LML	**69**	**9**	**1.09**	**7.40**						
					incl	**76**	**2**	**1.57**	**10.0**						
VRC035	RC	801646	7247189	76	IML	33	16	0.57	4.06						
					LML	**57**	**12**	**0.97**	**6.46**						
					incl	**66**	**2**	**1.61**	**10.7**						
VRC036	RC	802436	7245563	26	IML	0	2	0.91	7.23						
					LML	**9**	**10**	**0.99**	**6.60**						
					incl	**16**	**3**	**1.37**	**8.89**						
VRC037	RC	802366	7245723	36	IML	1	10	0.60	4.38						
					LML	**17**	**10**	**0.95**	**6.38**						
					incl	**25**	**2**	**1.59**	**10.1**						

VRC038	RC	802347	7246469	110	UML	20	26	0.55	3.91						
					IML	64	20	0.73	4.93						
					incl	**79**	**5**	**1.16**	**7.71**						
					LML	**86**	**20**	**1.20**	**6.93**						
					incl	**91**	**7**	**1.48**	**9.14**						
VRC039	RC	802086	7246095	81	UML	0	15	0.72	5.18						
					IML	50	16	0.56	4.05						
					LML	73	8	0.89	6.14						
VRC040	RC	801838	7247307	31	LML	**17**	**11**	**0.99**	**6.59**						
					incl	**25**	**2**	**1.67**	**10.8**						
VRC041	RC	801666	7247021	71	IML	35	14	0.57	4.11						
					LML	**57**	**11**	**0.94**	**6.25**						
					incl	**65**	**2**	**1.64**	**10.5**						
VRC042	RC	801885	7246967	76	IML	35	16	0.64	3.61						
					LML	**59**	**11**	**1.07**	**6.13**						
					incl	**67**	**3**	**1.55**	**9.66**						
VRC043	RC	801942	7246831	96	UML	0	24	0.86	6.35						
					incl	**0**	**14**	**0.98**	**7.51**						
					IML	66	13	0.55	4.18						
					LML	**79**	**12**	**1.08**	**7.25**						
					incl	**86**	**5**	**1.29**	**8.41**						
					incl	**87**	**2**	**1.62**	**10.9**						
VRC044	RC	802078	7246785	90	UML	0	12	0.74	5.05						
					incl	8	3	1.01	6.92						
					IML	50	15	0.58	4.16						
					LML	**76**	**10**	**0.99**	**6.62**						
					incl	**83**	**2**	**1.55**	**10.2**						
VRC045	RC	801948	7246620	141	UML	19	41	0.78	6.52						
					incl	**35**	**10**	**1.17**	**9.17**						
					IML	94	19	0.56	4.03						
					LML	**121**	**12**	**0.96**	**6.42**						
					incl	**130**	**3**	**1.43**	**9.14**						
VRC046	RC	801751	7246552	136	UML	20	40	0.77	6.43						
					incl	**35**	**9**	**1.17**	**9.26**						
					IML	95	16	0.57	4.18						
					LML	**121**	**10**	**1.01**	**6.88**						
					incl	**129**	**2**	**1.72**	**11.2**						
VRC047	RC	801863	7247402	16	LML	0	**12**	**0.99**	**6.74**						
					incl.	3	**9**	**1.13**	**7.67**						
					incl.	10	**2**	**1.70**	**10.8**						
VRC048	RC	802040	7247179	9	LML	0	**4**	**1.35**	**8.80**						
VRC049	RC	802126	7247096	11	LML	0	**8**	**1.35**	**6.99**						
VRC050	RC	801707	7247413	56	LML	43	**10**	**1.01**	**6.81**						
					incl.	50	**3**	**1.34**	**8.51**						

VRC051	RC	801829	7247675	66	IML	30	15	0.62	2.88						
VDD001	DD	801358	7246865	135	UML	21	**34**	**1.03**	**5.92**	**41%**	**2.32**	**10.0**	**57.6**	**3.74**	**2.61**
					LML	108.6	**8.5**	**1.02**	**6.64**	**42%**	**2.00**	**10.2**	**51.0**	**3.85**	**3.31**
VDD002	DD	802477	7245218	56.8	LML	3.8	**19.6**	**0.60**	**4.22**						
VDD003	DD	802040	7245103	131.7	UML	*UML sampled for Metallurgy*									
VDD003	DD	802040	7245103	131.7	LML	78	13.2	0.62	3.63						
					LML	94	**10.1**	**0.89**	**6.10**						
					incl	97	**7.1**	**1.04**	**7.07**						
VDD004	DD	802634	7245063	25		*Sampled for Metallurgy*									
VDD005	DD	802400	7245603	29		*Sampled for Metallurgy*									
VDD006	DD	802185	7245045	101.8	UML	2.9	**14.2**	**0.82**	**5.84**						
					LML	51	33.7	0.67	6.64						
					incl.	77.3	**7.6**	**1.17**	**7.90**						
					incl.	82.6	**2.4**	**1.63**	**10.5**						
VDD007	DD	801760	7245770	134.6	UML	16.00	37.0	0.74	6.26						
					LML	111.5	12.0	0.97	6.51						
					incl.	121.3	2.3	1.72	11.0						
VDD008	DD	801590	7245680	140.7	UML	39.4	32.4	0.78	6.53						
					incl.	55	**5.6**	**1.28**	**9.84**						
					LML	119.5	**9.1**	**0.93**	**6.24**						
					incl.	122.5	**6.0**	**1.34**	**7.43**						
					incl.	127.6	**2.5**	**1.58**	**10.1**						
VDD009	DD	801890	7245698	119.6	UML	1.5	**14.9**	**0.99**	**7.67**						
					incl.	1.5	**7.0**	**1.21**	**9.81**						
					LML	89.8	**9.9**	**1.06**	**7.19**						
					incl.	93.1	**6.6**	**1.16**	**7.72**						
					incl.	97	**2.7**	**1.60**	**10.3**						
VDD010	DD	801831	7245486	119.7	UML	0	29.9	0.78	6.94						
					incl.	18.9	**6.0**	**1.27**	**9.97**						
					LML	98.4	**11.7**	**0.96**	**6.56**						
					incl.	103.7	**6.4**	**1.49**	**10.1**						
					incl.	107.4	**2.7**	**1.57**	**10.2**						
VDD013	DD	802059	7245262	91.8	UML	3.4	**5.4**	**1.19**	**9.18**						
					LML	78.0	**9.8**	**1.00**	**6.75**						
					incl.	80.0	**7.8**	**1.11**	**7.51**						
					incl.	85.5	**2.3**	**1.58**	**10.2**						
VDD014	DD	802204	7245358	66.3	LML	55.8	**6.0**	**1.14**	**6.76**						
					incl.	59.5	**2.3**	**1.49**	**9.38**						
VDD015	DD	802333	7245126	62.6	LML	50.4	**11.2**	**0.97**	**4.19**						
					incl.	53.4	**8.2**	**1.12**	**7.57**						
					incl.	59	**2.6**	**1.55**	**9.98**						
VDD016	DD	801835	7245220	128.8	UML	17.3	**26.7**	**0.82**	**7.27**						
					incl.	32.3	**7.1**	**1.16**	**9.30**						
					IML	48.1	**4.0**	**0.93**	**6.46**						

					LML	116	**8.5**	**0.96**	**6.56**						
					incl.	122.2	**2.3**	**1.65**	**10.5**						
VDD017	DD	802208	7244911	110.6	UML	7.7	**11.8**	**1.06**	**8.55**						
					incl.	10.9	**5.7**	**1.37**	**11.0**						
					IML	30.3	**4.0**	**0.92**	**7.00**						
					LML	94.4	**7.7**	**1.03**	**6.79**						
					incl.	100.1	**2.0**	**1.23**	**7.54**						
VDD018	DD	802197	7245189	74.6	UML	1.3	**6.7**	**0.78**	**5.29**						
					LML	62.0	**11.0**	**1.00**	**6.59**						
					incl.	67.0	**6.0**	**1.15**	**7.62**						
					incl.	70.3	**2.7**	**1.58**	**10.1**						
VRC024	RC	800846	7246321	21		*Assay results pending*									
VRC025	RC	800847	7246331	21		*Assay results pending*									
VRC026	RC	800850	7246348	16		*Assay results pending*									
VRC027	RC	800857	7246362	10		*Assay results pending*									
VRC028	RC	800829	7246339	21		*Assay results pending*									
VRC029	RC	800835	7246354	16		*Assay results pending*									
VRC030	RC	800824	7246353	21		*Assay results pending*									
VRC031	RC	800809	7246346	16		*Assay results pending*									
VRC032	RC	800796	7246343	11		*Assay results pending*									
VRC033	RC	800822	7246366	11		*Assay results pending*									
VRC034	RC	800876	7246347	24		*Assay results pending*									
VDD011	DD	800842	7246335	77.6		*Assay results pending*									
VDD012	DD	801075	7246405	65.3		*Assay results pending*									
VDD019	DD	801265	7246164	132.6		*Assay results pending*									
VDD020	DD	801460	7246107	147.2		*Assay results pending*									
VDD021	DD	801387	7246415	128.8		*Assay results pending*									
VDD022	DD	801660	7246064	158.6		*Assay results pending*									
VDD023	DD	801603	7246802	113.7		*Assay results pending*									
VDD024	DD	802500	7245459	26.6		*Sampled for Metallurgy – Results reported in this announcement*									
VDD025	DD	801370	7247216	119.1		*Assay results pending*									
VDD026	DD	801998	7245697	86.7		*Sampled for Metallurgy*									
VDD027	DD	802344	7246441	131.7		*Assay results pending*									
VDD028	DD	800835	7246354	10.3		*Sampled for Metallurgy*									
VDD029	DD	800835	7246357	8.6		*Sampled for Metallurgy*									
VDD030	DD	801816	7247515	38.7		*Assay results pending*									
VDD031	DD	801829	7246816	98.3		*Assay results pending*									
VDD032	DD	802767	7246077	90.8		*Assay results pending*									

Notes:

- All coordinates are in UTM Zone 35S (WGS 84).
- All holes are vertical (-90 dip).
- Shaded results denotes results reported in this announcement
- Results should be read in conjunction with the data provided in Appendix 3.

APPENDIX 3.

The following Tables are provided to ensure compliance with the JORC Code (2012 Edition) requirements for the reporting of Exploration Results at the SPD Vanadium Project.

Section 1: Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg 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.*	Diamond core drilling using NQ sized core. RC drilling using 5 ¼" face sampling hammer.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	RC drilling and the core sampled at 1m intervals except where these are adjusted for geological features (core only). Core for assay purposes is cut in half, with all core being photographed for reference. Core for metallurgy is sampled as full core. RC drilling will be split on site using a riffle splitter.
	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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.	All aspects of the determination of mineralisation are described in this table. Diamond core drilling and RC drilling using these methods are considered appropriate for sampling the vanadiferous titanomagnetite unit which hosts the mineralisation. All of the drill samples have been sent to a commercial laboratory for crushing, pulverising and chemical analysis by industry standard practises.
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 of standard tube, depth of diamond tails, face-sampling bit or other type, whether core is orientated and if so, by what method, etc).*	Diamond drilling uses HQ and NQ2 core sizes. Coring was from surface using HQ. Core was changed to NQ2 when ground conditions were competent. All diamond core is stored in industry standard core trays labelled with the drill hole ID and core interval. RC drilling uses face sampling hammer and 5 ¼" bit sizes.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond drill core recovery is being recorded as a percentage of measured recovered cores versus drilled distance. Recoveries have been high to date. RC drill samples are weighed to give a quantitative basis to estimation of recovery.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Diamond drilling - coring only changed to NQ2 when ground conditions were competent. RC – consistent drilling technique, cleaning of cyclone.
	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 relationship observed between recovery and grade. There is no known or reported relationship in historical drilling between sample recovery and grade.

Criteria	JORC Code explanation	Commentary
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.*	Diamond drill core and RC drill chips are being geologically logged for the total length of the hole. Logging is recording lithology, mineralogy, alteration, veining, structure, mineralisation and weathering. Logs are coded using the company geological coding legend and entered into Excel worksheets prior to being loaded into the company database. All core is being photographed with images to be stored on the company server. Logging is appropriate and sufficiently detailed to support Mineral Resource estimates.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging of chips and diamond core is both qualitative (eg. colour) and quantitative (eg. minerals percentages).
	The total length and percentage of the relevant intersections logged.	100% of all drilling to date by the Company has been logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Sampling for all diamond core samples will be undertaken on split core, halved via a core saw, except metallurgical samples which use full core.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	RC drilling will be sampled dry and split through a riffle splitter.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sampling techniques for both diamond drilling and RC drilling are of consistent quality and appropriate.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	To ensure representivity core was taken from the same side of the hole each time, with field duplicates taken and inserted. Certified Reference Materials (CRMs) were selected to be similar in chemistry to the mineralisation being targeted.
	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.	One field duplicate is collected per 20 samples in addition to laboratory duplicates which were also reported.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The material and sample sizes are considered appropriate given the magnetite unit being sampled.
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 samples were sent to ALS Johannesburg, an ISO accredited commercial laboratory, for preparation and whole rock analysis. All samples were analysed by XRF fusion for Al2O3, As, Ba, CaO, Cl, Co, Cr2O3, Cu, Fe, K2O, MgO, Mn, Na2O, Ni, P, Pb, S, SiO2, Sn, Sr, TiO2, V, Zn and Zr as well as loss on ignition. Davis Tube analysis was carried out by SGS Laboratories Johannesburg, an ISO accredited commercial laboratory. Davis Tube analysis carried out at magnetic field of 1000G with magnetic and non-magnetic fractions analysed by XRF fusion for Fe, TiO2, V2O5, P2O5, SiO2, Al2O3, CaO, Cr2O3, MgO, MnO, Na2O, K2O and loss on ignition. Samples of products from metallurgical testwork, such as those reported in this announcement, were also analysed at SGS Laboratories Johannesburg by XRF fusion.
	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.	Hand held assay devices have not been reported.

Criteria	JORC Code explanation	Commentary
	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.	For RC drilling QA/QC samples are inserted every 10 samples. These alternate between a CRM & blank, and a field duplicate. For diamond core drilling QA/QC samples, being a CRM and a blank, are inserted every 20 samples. CRM are sourced from an accredited source and are of similar material to the mineralisation being sampled. QA/QC samples are checked following receipt of each assay batch to confirm acceptable accuracy and precision.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Assay results and intersections have been reviewed by independent geological consultants.
	The use of twinned holes.	Twinned holes are being drilled as part of the drilling programme.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is collected in the field and entered into Excel worksheets prior to being loaded into a database managed by an independent consultant. All core is being photographed with images to be stored on the company server.
	Discuss any adjustment to assay data.	Analytical result for V converted to V_2O_5 by multiplying by 1.785.
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.*	Location data has been recorded by handheld GPS (±5m accuracy on easting and northing) and will be regularly checked by survey by a licensed surveyor. Drillhole deviation for drilling is being measured via in-rod surveys during drilling.
	Specification of the grid system used.	The grid system for the SPD Vanadium Project is UTM Zone 35 S (WGS 84 Datum).
	Quality and adequacy of topographic control.	Good, based on recent survey.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Drilling to date over the SPD Vanadium Prospect is on approximately 150m - 300m centres east-west and 300m -450m centres north-south over the mineralised body.
	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.	Data spacing is deemed sufficient to establish geological and grade continuity to establish a mineral resource estimate, this was estimated under the SAMREC Code which is not JORC compliant but is a "foreign resource" as defined in the ASX Listing Rules..
	Whether sample compositing has been applied.	No sample compositing has been applied.
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.*	The majority of the drilling at the SPD Vanadium Project is inclined to the north-east which is considered appropriate given the regional and local geological stratigraphy.
	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.	To date, orientation of the mineralised domain has been favourable for perpendicular drilling and sample widths are not considered to have added a significant sampling bias.
Sample security	*The measures taken to ensure sample security.*	Samples are stored at a secure yard. Samples are then delivered to the assay laboratory in Johannesburg by

Criteria	JORC Code explanation	Commentary
		representatives of the Company.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	No independent audits have been undertaken.

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	*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 SPD Project comprises a Mining Right covering the farm Steelpoortdrift 365 KT.
	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 tenure is in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Project has previously been explored for magnetite-hosted Fe-V-Ti deposits.
Geology	*Deposit type, geological setting and style of mineralisation.*	Vanadium mineralisation at the SPD Project is located close to the contact between the Upper Zone and Main Zone of the Bushveld Igneous Complex and adjacent to the Steelpoort Fault. Mineralisation is hosted in two layers, the Upper Magnetite Layer (UML) and Lower Magnetite Layer (LML), which dip shallowly (10-12deg) to the west.
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:* • *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.*	Refer Appendix 2.
	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.	Not applicable, information has been included.
Data aggregation methods	*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.*	All results > 0.5% V_2O_5 have been averaged weighted by downhole length, and inclusive of a maximum of 2m internal waste. Davis Tube results are reported for the same intervals as the whole rock analyses.
	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.	High grade intervals > 1% V_2O_5 and 1.5% V_2O_5 have also been reported. No internal waste used for these.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values are being used for reporting exploration results.
Relationship between	*These relationships are particularly important in the*	Downhole lengths reported, true widths not known

Criteria	JORC Code explanation	Commentary
mineralisation widths and intercept lengths	*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 (eg 'down hole length, true width not known').*	at this time.
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.*	Appropriate diagrams are shown in the text.
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.*	All results > 0.5% V_2O_5 included.
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.*	Exploration data is contained in previous ASX Announcements.
Further work	*The nature and scale of planned further work (eg 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.*	As detailed in the text results are awaited from recent drilling to enable update of Mineral Resources. In addition metallurgical testwork and pit optimisation studies are in progress.

APPENDIX 4: Data and sources for Peer Comparison (Figure 3)

Company	Project	Stage	Resource Category	Resource Tonnes	Resource Grade	Concentrate Grade	Information Source
Largo LGO.TSX	Maracas	Production	Measured, Indicated & Inferred (43-101)	49.25	0.99	3.10	43-101 Technical Report dated 26/10/2017 http://www.largoresources.com/operations/maracas-menchen-mine
Bushveld BMN.LSE	Vametco	Production	Indicated & Inferred	142	0.57	1.96	https://www.bushveldminerals.com/bushveld-vametco/ ; https://www.bushveldminerals.com/presentations/
	Mokopane	Development	Indicated & Inferred	285	0.68	1.75	Mokopane PFS Study Report Jan 2016 https://www.bushveldminerals.com/technical-reports/
TNG TNG.ASX	Mt Peake	Development	Measured, Indicated & Inferred	160	0.28	1.20	ASX Announcement 26/03/2013
King River KRR.ASX	Speewah	Development	Measured, Indicated & Inferred	4,712	0.30	2.11	ASX Announcement 02/11/2018 21/03/2018
Australian Vanadium AVL.ASX	Gabanintha	Development	Measured, Indicated & Inferred	176	0.77	1.40	ASX Announcement 26/09/2018
Technology Metals TMT.ASX	Gabaninth	Development	Indicated & Inferred	120	0.8	1.39 – 1.49	ASX Announcement 21/06/2018 21/06/2018