



Corporate Presentation

“Unlocking one of the world’s largest and highest-grade Vanadium projects for a new era”



March 2021

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Key Points

- ◆ **World Class** – one of the world's largest vanadium deposits. Total JORC Resource of 662 Mt at 0.77% V₂O₅ (including 188 Mt at 1.23% V₂O₅).
- ◆ **Long life and high-grade mineable resource** – long life open pit mining generates high grade Vanadium concentrate of 1,9-2.2% V₂O₅ post beneficiation with low silica and alumina contents required for downstream processing, which will facilitate the production of >98% V₂O₅ flake using a conventional Salt Roast Leach (“**SRL**”) process.
- ◆ **Contained metal** – the mineral resource contains 244 million tonnes of magnetite @ 2.14% V₂O₅ (in magnetite concentrate), for 5,214,000 tonnes of V₂O₅ based on an average 36.85% in situ magnetite content and using an in-situ 0.45% V₂O₅ cut-off grade.
- ◆ **Potential Flake production** - based on an average V₂O₅ recovery in a SRP of 81%, a total of 2.4 Mt tonnes of Vanadium flake may be produced from the measured and indicated resource.
- ◆ **Processing Strategy** – to innovatively utilise existing processing methodologies to produce battery grade V₂O₅ and high-end Vanadium products, including other elements such as Fe, Ti, Si and Al, which are not currently extracted using conventional processing methods
- ◆ **Scoping Study** – the Project generated a post-tax NPV_{8%} of between US\$359M and US\$401M based on a Vanadium price of US\$6.95/lb, Capex of US\$161.5M to US\$187.9M and average unit cash operating costs of US\$3.07/lb to US\$3.37/lb.
- ◆ **License Granted** – one of the few vanadium resources globally with a mining right granted, which includes environmental approval.
- ◆ **PFS** – initial pit optimization work as part of the PFS has identified the potential to preferentially mine higher grades during initial operations whilst simultaneously unlocking additional medium grade ore for future processing, which has the potential to improve NPV and will form part of the focus for the PFS.
- ◆ **The Bushveld Complex** – within the famous Bushveld Complex, home to some of the richest vanadium deposits in the world.
- ◆ **Infrastructure** – close to existing underutilized processing plants, power and water nearby with proven road & rail options to port.



World Class JORC Resource

- ◆ High grade Mineral Resources drilled to a high level of confidence including Measured, Indicated and Inferred categories.
- ◆ Global Mineral Resource of 662Mt at 0.77% V₂O₅ (0.45% V₂O₅ cut-off).
- ◆ High grade Mineral Resource of 188Mt at 1.23% V₂O₅ (0.9% V₂O₅ cut-off).
- ◆ Includes 68Mt at 1.37% V₂O₅ in a discrete, outcropping massive magnetite layer (LM1A).
- ◆ **The deposit offers the potential to target higher ROM ore V₂O₅ grade Resource areas, which will be targeted for the next round of pit optimisation studies as part of the PFS.**

1. Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (page 15).

Mineral Resource by Category¹

Category	Tonnes (Mt)	Whole Rock V ₂ O ₅ %
Measured	92	0.77
Indicated	284	0.78
Inferred	285	0.77
TOTAL	662	0.77

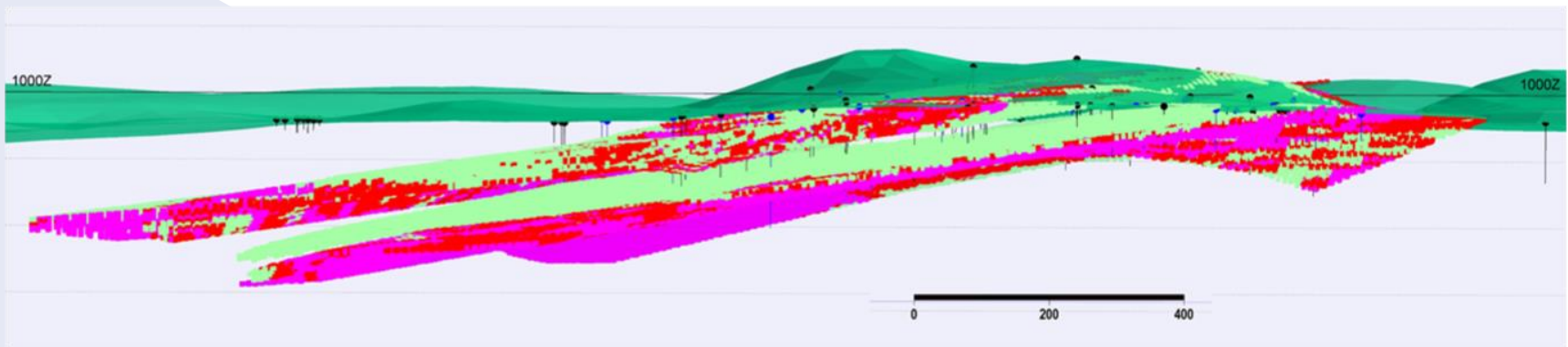
Mineral Resource by Grade¹

V ₂ O ₅ Range	Category	Tonnes (Mt)	Whole Rock V ₂ O ₅ %
> 0.90%	Measured	26	1.22
> 0.90%	Indicated	83	1.24
> 0.90%	Inferred	78	1.22
Sub Total	> 0.90%	188	1.23
0.45%–0.90%	Measured	66	0.59
0.45%–0.90%	Indicated	201	0.59
0.45%–0.90%	Inferred	207	0.60
Sub Total	0.45%–0.90%	474	0.59
TOTAL		662	0.78



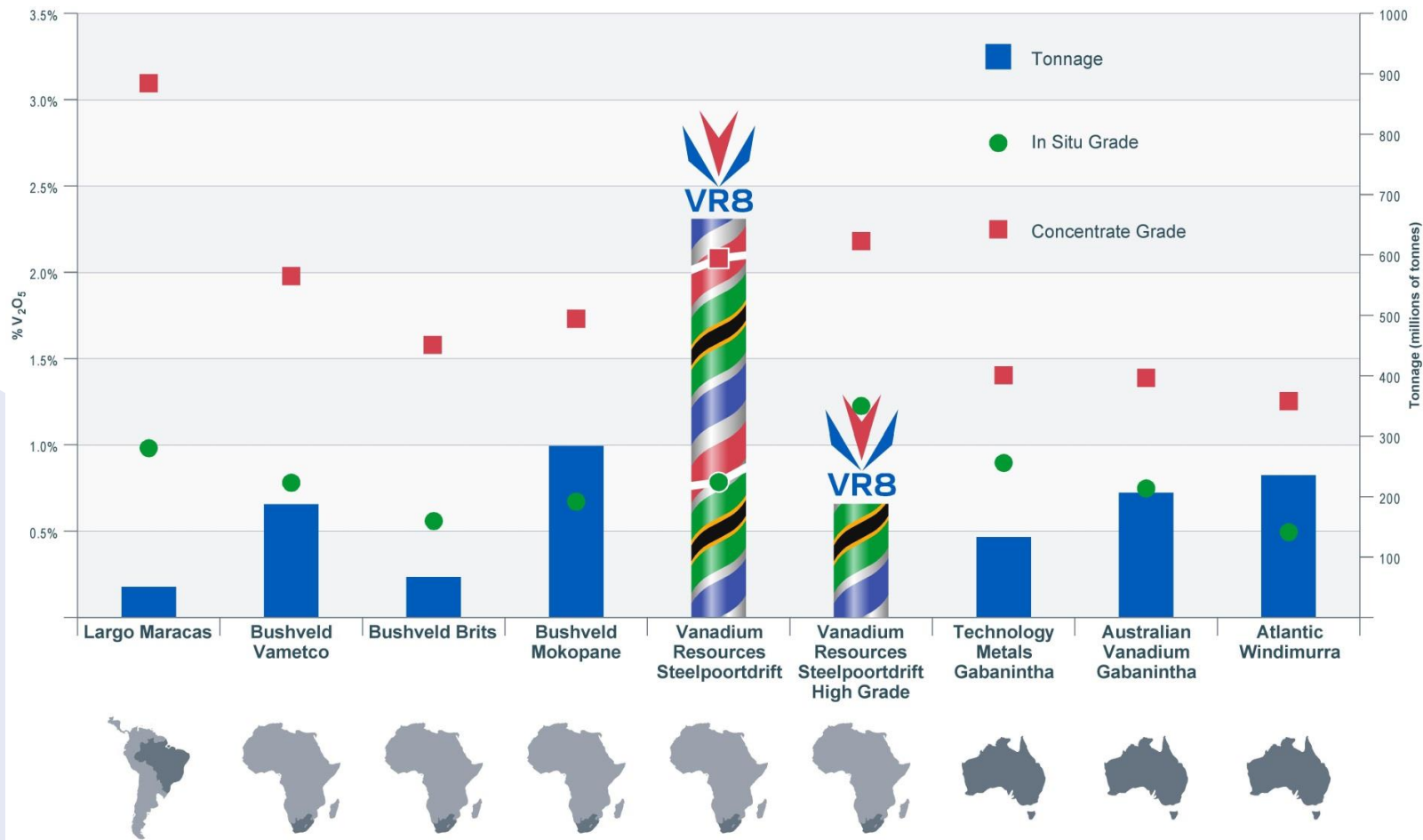
Mineralisation

- ◆ The SPD Project is located in the Bushveld Complex, **one of the most studied geological provinces in the world.**
- ◆ Vanadiferous titanomagnetite layers occur at the same stratigraphic level across the entire complex and can be traced for almost 400 km.
- ◆ Typically, vanadium mineralisation in the Bushveld Complex is typically **higher grade than global peers.**
- ◆ The global resource at SPD is one of the largest and highest grade (in-situ) Mineral Resources within the Bushveld Complex and globally at 188Mt at 1.23% V_2O_5 .
- ◆ Mineralisation outcrops at surface, meaning amenable to open pit mining.
- ◆ Mineralisation dips shallowly ($\sim 10^\circ$) – less waste to mine, **low strip ratios and cheaper mining cost.**
- ◆ Scoping Study has defined initial production target of 48.5Mt which corresponds to 25-year mine life at 1.6Mtpa ROM ore at 0.75% V_2O_5 .





A stand-out amongst all peers



The above chart compares Resources reported under different codes and companies at different stages of development as detailed in ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (pages 13-14). Only Resources with a quoted in situ grade > 0.45% V₂O₅ are shown in figure.

PEER COMPARISON INFORMATION



Company	Contained Metal	Project	Stage	Resource Category	Resource Tonnes	Resource Grade	Concentrate Grade	Information Source
Largo	487k	Maracas	Production	Measured, Indicated & Inferred (43-101)	49.25	0.99	3.10	43-101 Technical Report dated 26/10/2017 largoresources.com/operations/maracas-menchen-mine
Bushveld	1,7M (excl. Mokopane at 2M))	Vametco	Production	Indicated & Inferred	187	0.78	1.98	Competent Persons' Report on the Vametco Vanadium Mine Jan 2020 https://www.bushveldminerals.com/technical-reports/
		Mokopane	Development	Indicated & Inferred	298	0.68	1.75	Mokopane PFS Study Report Jan 2016 bushveldminerals.com/technical-reports/
		Britts	Exploration	Indicated & Inferred	67	0.56	1.58	Competent Persons' Report on the Brits Vanadium Project Jan 2020 https://www.bushveldminerals.com/technical-reports/
Vanadium Resources	5.1M	Steelpoortdrift	Development	Measured, Indicated & Inferred	662	0.77	2.18	ASX Announcement 16 April 2019
TNG	448k	Mt Peake	Development	Measured, Indicated & Inferred	160	0.28	1.20	ASX Announcement 26/03/2013
Ferro-Alloys	165k	Balasausqandiq	Exploration & Development	Indicated & Inferred	24.3	0.68	n.a.	CPR GBM 12 November 2018
Pursuit	560k	Koitelainen Vosa	Development	Inferred	116.4	0.28	2.25	ASX Announcement 06/02/2019
		Airijoki	Development	Inferred	44.3	0.40	1.70	ASX Announcement 08/03/2019
Aust Vanadium	1.53M	Gabainintha	Development	Measured, Indicated & Inferred	208.2	0.74	1.39	ASX Announcement 04/03/2020, 17/03/2020
Technology Metals	1.1M	Gabainintha	Development	Indicated & Inferred	131	0.90	1.36	ASX Announcement 29/03/2019
Atlantic	1.1M	Windimurra	Development	Measured, Indicated & Inferred	235	0.49	1.26	https://atlanticyt ltd.com.au/projects/windimurra/geology-reserves-resources

Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (page 213-14).



Scoping Study confirms viability of SPD

- ◆ Globally competitive opex and capex metrics.
- ◆ Confirms production of vanadium pentoxide utilising conventional SRL processing methods is technically and financially viable.
- ◆ Financial modelling shows substantial value and robust returns with attractive payback and a resilience to low price environments.
- ◆ Low operating and capital expenditures ascribable to high grade nature of vanadium mineralisation, along with access to regional infrastructure and local experience in production of vanadium products.
- ◆ Low operating costs resulting in the project retaining strong margins should prices move to the downside.

SPD - Scoping Study Outcomes ¹	
EBITDA LoM (US\$, pre-tax)	1,756 – 1,900 M
EBITDA per annum (US\$)	71.5 – 77.2 M
NPV ^{8%} (US\$, post-tax)	359 – 401 M
IRR (US\$, pre-tax, 100% equity)	28.8 – 30.7 %
IRR (US\$, post-tax, 100% equity)	26.3 – 28.2 %
IRR (US\$, post-tax, 50:50 equity:debt)	41.4 – 44.7 %
Payback Period	2 – 3 years
Life of Mine (Study Period)	25 years
Life of Mine (Mining schedule)	30 years
Pre-production CAPEX (US\$, incl. contingency)	161.5 - 187.9 M
Sustaining CAPEX LoM (US\$)	14.9 M
Average cash operating costs (US\$/lb V ₂ O ₅)	3.07 – 3.37
Annual V ₂ O ₅ production over LoM	18.7 – 20.8 M lb / 8,518 – 9,451 tonnes

1. Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (page 3).

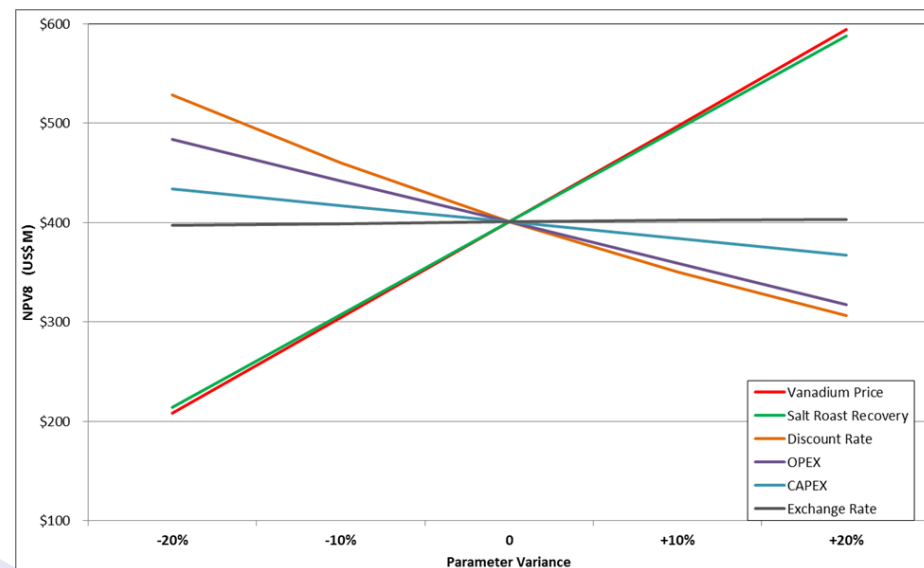


Scoping Study Parameters & Assumptions

- ◆ Compiled by VR8 with the assistance of highly experienced and reputable independent consultants.
- ◆ Completed to an overall +/-35% accuracy.
- ◆ These assumptions will be further tested during the preparation of the PFS.

Key Parameters / Assumptions ¹	
General / Economic	
Discount Rate	8%
Vanadium Price for +98% V ₂ O ₅ flake product (US\$/lb)	6.95
Exchange Rate (ZAR : USD)	16
Mining / Production	
Average LoM Strip Ratio	0.42
Processing Rate	1.6 Mtpa
LoM Production Target	48.5 Mt
Average V ₂ O ₅ grade mined (diluted)	0.75%
Recovery into concentrate (mass)	32%
Recovery into concentrate (V ₂ O ₅)	90%
Recovery from concentrate to V ₂ O ₅ flake	81.5%
Average concentrate grade (V ₂ O ₅)	2.03%
Mining / Production	
LoM average mining costs (\$/lb V ₂ O ₅ produced)	\$0.56
LoM average concentrator costs (\$/lb V ₂ O ₅ produced)	\$0.52
LoM average salt roast costs (\$/lb V ₂ O ₅ produced)	\$1.45
General and admin costs (\$/lb V ₂ O ₅ produced)	\$0.54
Royalty	2%
Tax rate	28%

Sensitivity to historical V ₂ O ₅ prices	US\$4.50	US\$5.50	US\$6.00	US\$6.95	US\$8.60	US\$10.0
NPV ^{8%} US\$M (OPEX = US\$3.07/lb)	61	199	269	401	629	825
NPV ^{8%} US\$M (OPEX+10% = US\$3.37/lb)	20	158	227	359	587	781



1. Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020.



Capex

- ◆ The pre-production capex is 185.7M including a 15% contingency (as shown below).
- ◆ Capex estimate for the process plant was based on assumptions and parameters outlined in the Scoping Study.

Area	US\$M	%
Mine Site, Pre-Strip & Stockpile	14.0	9%
Processing Plant	80.6	50%
Tailings Dam	30.0	19%
Site Infrastructure, Utilities & Services	14.7	9%
Construction / Support / Equipment / Consumables	18.2	11%
Financing Costs	4.0	3%
Sub Total	161.5	
Contingency (15%)	24.2	
Total	185.7M	
Sustaining Capex	14.9	

Operating Costs

- ◆ The Project has an estimated C1 cash cost (at mine gate) of US\$3.07/lb V₂O₅ (as shown below).
- ◆ Operating costs have been presented as a range to provide an appropriate level of accuracy for the study.

Area	US\$/t ROM	US\$/lb V ₂ O ₅
Mining	5.2-5.7	0.42-0.46
Benefication	6.4-7.0	0.52-0.57
Salt Roasting Plant	17.8-19.6	1.45-1.60
G&A, Environmental & Social	6.6-7.2	0.54-0.59
Sub Total	35.9-39.5	2.93-3.22
Royalties	0.3	0.14
Total	36.2-39.8	3.07-3.37

Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (page 26-28).



Pit Optimisation towards PFS indicates:

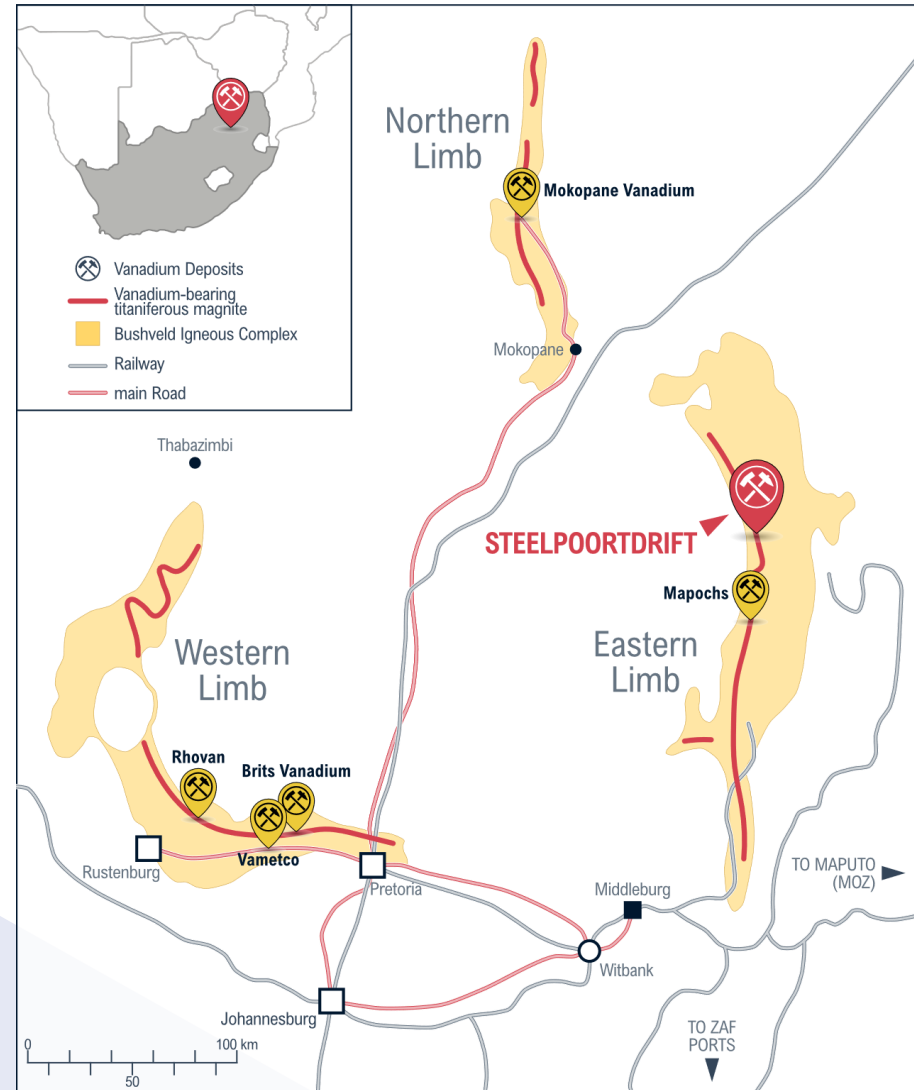
- ◆ High V₂O₅ grade magnetite can preferentially be mined at the 2020 Scoping Study mine design throughput of 1.6Mtpa without changing any of the Scoping Study assumptions
- ◆ Significantly increased output of final V₂O₅ flake product from downstream processing
- ◆ Medium grade ore currently classified as waste holds the potential to become feed for later life of mine periods
- ◆ Prospect that future processing of medium grade ore (mined with high grade ore) are to be available for processing at zero mining cost in later life of mine periods
- ◆ Flexibility in:
 - ◆ considering various processing options and product streams during the initial base case life of mine period of 25 years, or
 - ◆ to retain medium grade ore to support a subsequent life of mine, or
 - ◆ to consider a greater throughput than the design base case of 1.6Mt in order to benefit from the Resource present at Steelpoortdrift
- ◆ As a result, the potential exists to:
 - ◆ increase the net present value of the project
 - ◆ unlock a range of other processing strategies
 - ◆ lower operational expenditure of Vanadium production capacity

Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (page 26-28).



Located in the Bushveld Complex

- ◆ Steelpoortdrift Vanadium Project (“**SPD**” or “**Project**”) is part of a geologically unique igneous complex endowed with deposits of PGEs, chromium, vanadium and magnetite.
- ◆ This world-renowned mining location is host to several mining operations and multiple major mining companies are active in the area.
- ◆ Other Mines in the Bushveld Complex:
 - **Bushveld Minerals** – Vametco Vanadium Mine, Mokopane Vanadium Project.
 - **Xstrata** – Rhovan Vanadium Mine.
 - **Anglo American**
Twickenham PGE Mine, Modikwa PGE Mine, Kroondal PGE Mine, Bokoni PGE Mine, Mogalakwena PGE Mine, Polokwane Smelter, Waterval Smelter.
 - **African Rainbow** – Modikwa PGE Mine, Two Rivers PGE Mine.
 - **Sibanye Stillwater** Marikana PGE Mine.
 - **Impala Platinum** Rustenburg PGE Mine.
 - **Samancor** Tubatse Chrome Operations, Mooinooi.



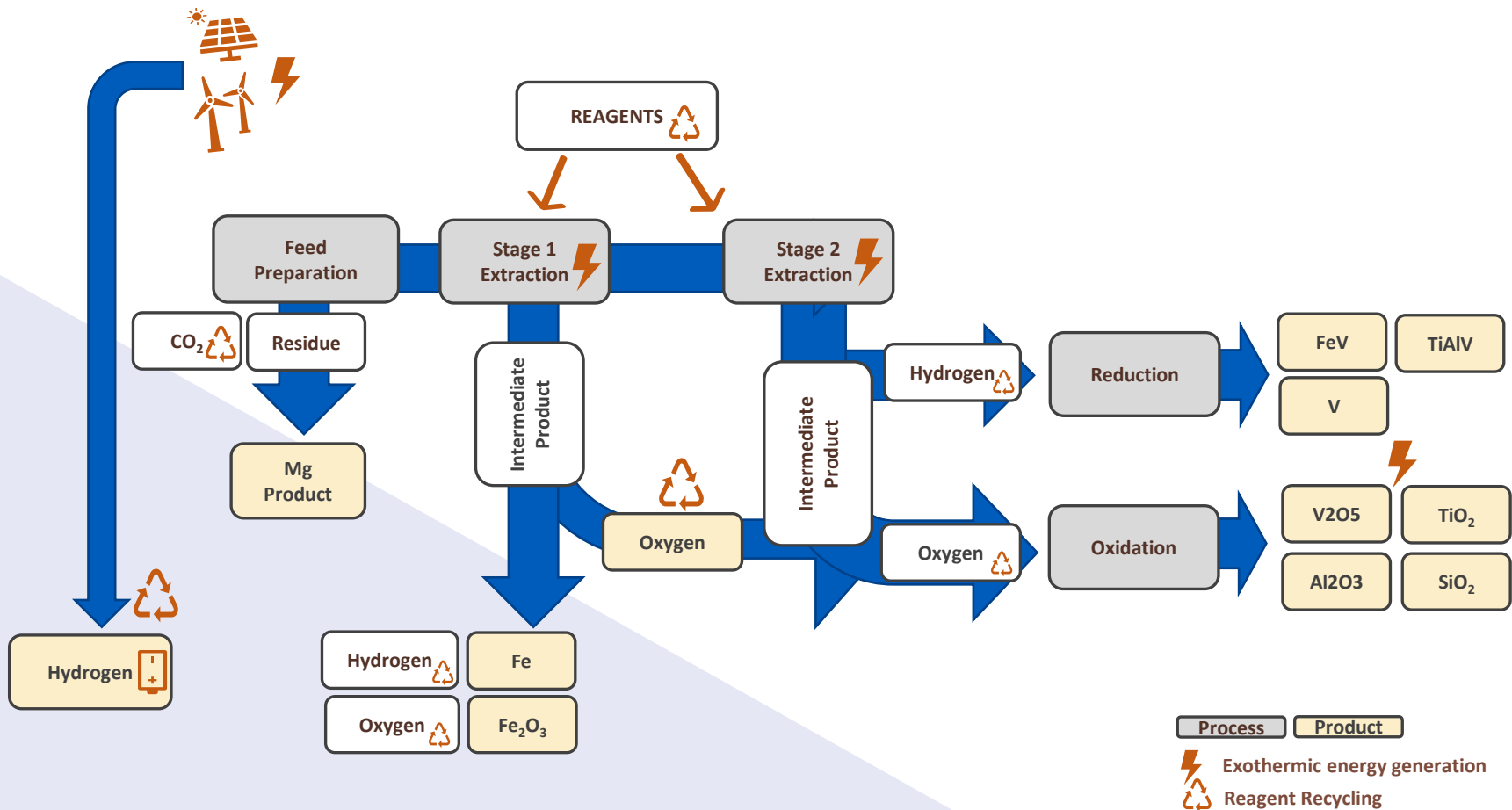


PROCESSING STRATEGY

- ◆ Studies (PFS and DFS) towards utilising the conventional salt roast method will continue as the company's preferred processing methodology.
- ◆ The processing strategy enables:
 - Diverse processing options to be considered, thereby possibly replacing existing processing methods and/or allowing concurrent processing and/or enabling further refinement of products produced by conventional methods
 - elevated levels of automation, recycling and commercial scalability
 - energy independence
- ◆ The processing strategy is carbon-efficient and has hydrogen- and, power-generating proficiencies that envisages:
 - zero CO₂ emissions by converting CO₂ into saleable metal carbonate products
 - “in-process” re-utilisation of energy by harvesting excess energy during multiple exothermic stages
 - the provision power generation through the production of hydrogen
 - methodologies aimed at reduction of overall emissions, including reductantless iron extraction, and moderate reductant processing of Vanadium, Titanium, Aluminium and Silicon products
 - a significant reduction in the emissions footprint for VR8's existing salt roast process
 - zero waste water or effluent discharge
- ◆ Studies conducted include investigation to treat waste from the Salt Roast process and remediate waste from other vanadium tailings storage facilities globally



PROCESSING STRATEGY





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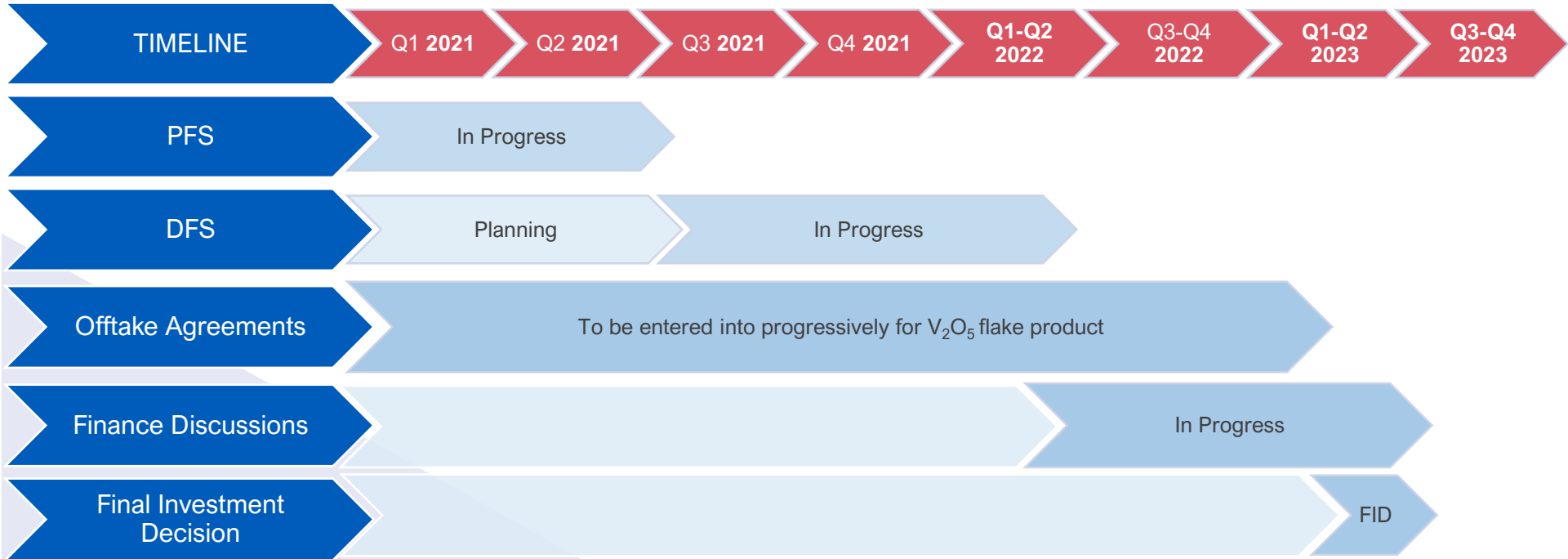
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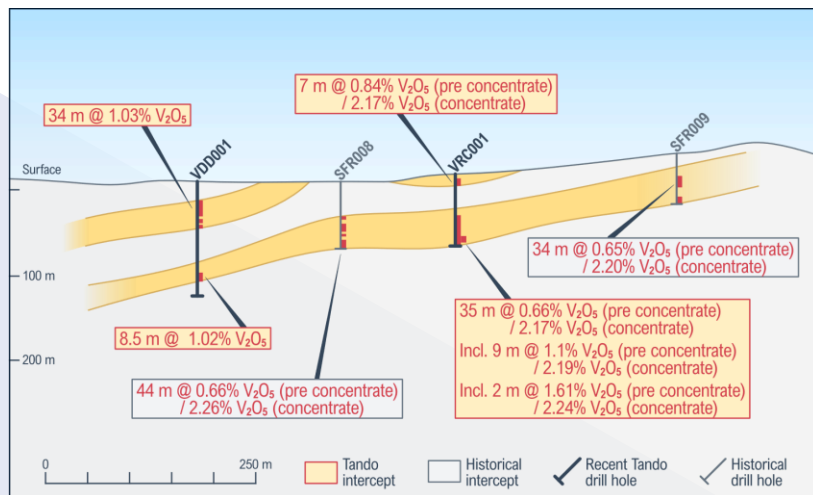
ADDITIONAL INFORMATION





High Grade Drill Results

- ◆ Mineral Resource includes 188Mt at 1.23% V₂O₅ from surface.
- ◆ High-grade drill results from surface.
- ◆ Thick zones of mineralisation, make the deposit amenable to large scale open pit mining.



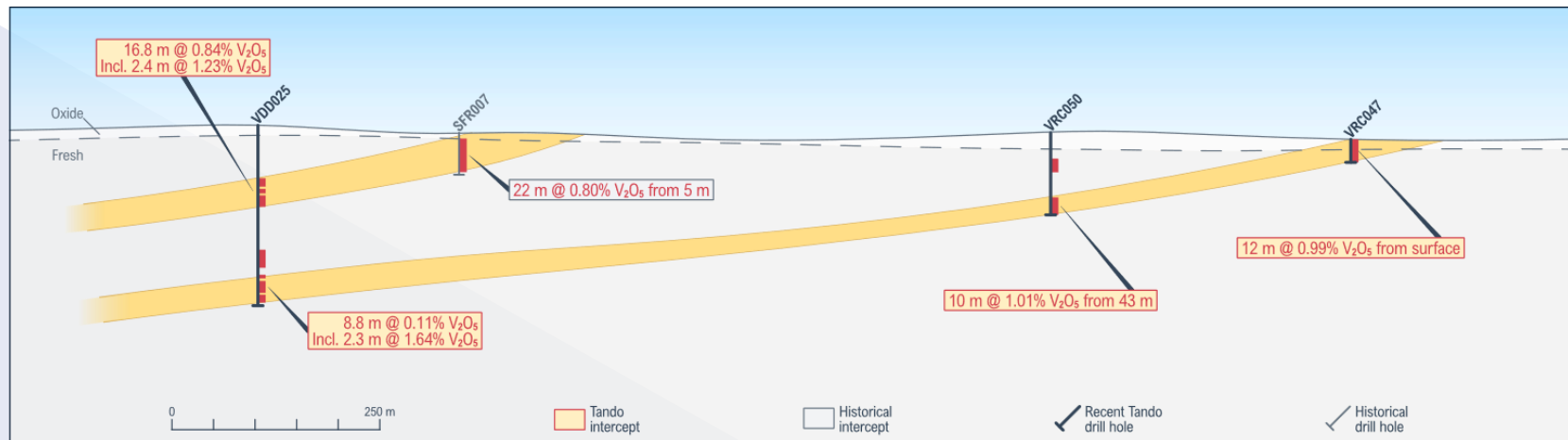
- ◆ 18m at 0.80% V₂O₅ from 0m (VRC017) incl. 4m at 1.16% V₂O₅
- ◆ 14m at 0.98% V₂O₅ from 0m / surface (VRC043)
- ◆ 34m at 1.03% V₂O₅ from 22m (VDD001)
- ◆ 12m at 1.00% V₂O₅ from 12m (VRC002) incl. 2m at 1.72% V₂O₅
- ◆ 10m at 1.17% V₂O₅ from 35m (VRC045)
- ◆ 9m at 1.06% V₂O₅ from 22m (VRC015) incl. 3m at 1.45% V₂O₅
- ◆ 11m at 0.99% V₂O₅ from 17m (VRC040) incl. 2m at 1.67% V₂O₅
- ◆ 11m at 0.98% V₂O₅ from 24m (VRC019) incl. 8m at 1.15% V₂O₅ from 27m incl. 2m at 1.65% V₂O₅ from 33m
- ◆ 10m at 0.99% V₂O₅ from 9m (VRC036)
- ◆ 10m at 0.95% V₂O₅ from 17m (VRC037) incl. 2m at 1.59% V₂O₅ from 6m

* Refer ASX Announcements 12 Oct 2018, 25 Oct 2018, 28 Nov 2018 & 16 Jan 2019



Excellent Oxide Zone Results

- ◆ Mineralisation outcrops or subcrops across project, with weathering < 10m.
- ◆ Amenable to open pit mining with an initial 25-year mine life defined.
- ◆ Unlike many deposits, weathered mineralisation behaves no differently to fresh mineralisation in processing tests to date.
- ◆ Concentrate results from both mineralisation sources contain identical V_2O_5 contents. ⁽¹⁾



¹ Refer ASX Announcement 5 August 2019.



Pit Optimisation Studies & Mine Design

- ◆ Optimum pit shell #RF2 generated an in-pit Mineral Resource of 53Mt at 0.75% V₂O₅ (391kt of contained V₂O₅).
- ◆ The analysis included dilution of a 0.5m skin of waste added to the Resource.
- ◆ Overall slope design assumptions based on a preliminary review of geological structure, rock mass and pit design parameters.
- ◆ While no geotechnical work has been completed to date, a detailed geotechnical study will be completed as part of the PFS which will be incorporated into the overall slope design for the pit design.
- ◆ A conceptual pit design was developed using pit shell #RF2, which generated 48.5Mt of ore mineralisation and 18.3Mt of waste material, resulting a strip ratio of 0.47 : 1 (waste : ore) over the life of mine.
- ◆ Of the 48.5Mt of potential ROM ore mill feed, 43.3Mt is contained within the Measured and Indicated Resource classifications.
- ◆ The total potential mill feed of 48.5Mt represents only 7% of the total Mineral Resource.

Optimum Pit Shell¹

Shell ID	Mineralised Tonnes (Mt)	Waste Tonnes (Mt)	Strip Ratio	LoM at 1.6Mtpa (yrs)	Contained Tonnes of V ₂ O ₅ % (kt)
RF2	85	25	0.30	53	439

In-pit Mineral Resource (Shell RF2)¹

Category	Tonnes (Mt)	Diluted Grade (V ₂ O ₅ %)	Tonnes V ₂ O ₅ in magnetite (kt)
Measured	18	0.78	140
Indicated	30	0.75	225
Inferred	4	0.66	26
TOTAL	53	0.75	391

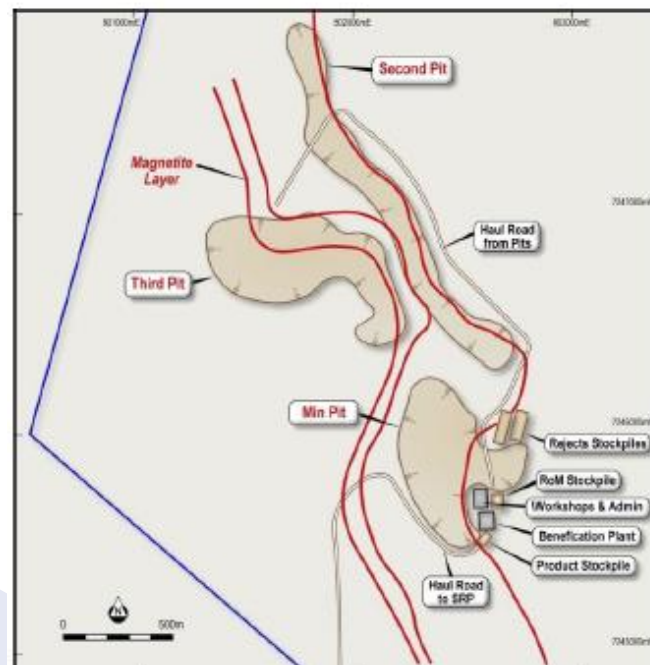
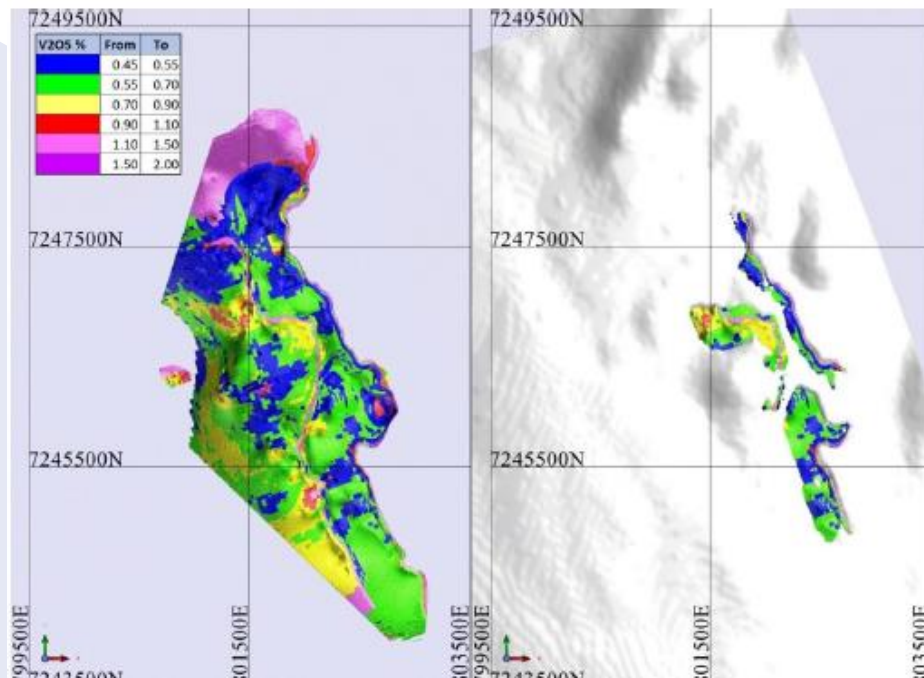
1. Source: ASX Announcement titled "Scoping Study Confirms Viability of V₂O₅ Production", 23 September 2020 (pages 17-18).



Conceptual Pit Design & Site Layout

- ◆ The optimum pit shell #RF2 and conceptual design represent only a small part of the overall total Mineral Resource (as shown below).
- ◆ This highlights the potential:
 - for the life of the operation to extend well past the 30-year life of mine; and
 - to increase the ROM ore V_2O_5 grade particularly during the early years of operations – this has the potential to reduce the tonnage of ore required to be mined to achieve the same V_2O_5 product rates (and improve NPV).

Mineral Resource (LH), Pit Shell #RF2 (Mid) & Site Layout (RH)¹



1. Source: ASX Announcement titled "Scoping Study Confirms Viability of V_2O_5 Production", 23 September 2020 (pages 19-20).



Concentrate Test Results – Beneficiation

- ◆ Testwork undertaken by SGS and Mintek confirmed that a simple beneficiation process was well suited to the SPD ore body which showed concentrate grades of 2.2% V_2O_5 .
- ◆ Various phases of concentrate testwork optimised both vanadium content and reduction of silica and alumina.
- ◆ This analysis showed consistent vanadium content throughout the mineralised intervals, with low levels of silica and alumina.

Testwork	V_2O_5 %	TiO_2 %	SiO_2 %	Al_2O_3 %	Fe %
March 2019	2.2	12.0	3.2	4.8	54.6
June 2020	2.2	12.3	1.2	3.4	58.3



Source: ASX Announcement titled “Scoping Study Confirms Viability of V_2O_5 Production”, 23 September 2020 (page 21).



Concentrate Test Results – Salt Roast Leach

- ◆ Testwork undertaken by Mintec demonstrated that the SRL method was well suited to the extraction of vanadium from concentrate.
- ◆ The SLR process was able to successfully produce +98% V_2O_5 flake from a 2.2% V_2O_5 concentrate, with an average recovery of 81.5%.
- ◆ Scoping Study testwork led by Mr Les Ford, one of the world's foremost experts in the production of vanadium.
- ◆ The SRL process uses proven technology and used in other vanadium operations in the Bushveld Complex and globally.

Source: ASX Announcement titled "Scoping Study Confirms Viability of V_2O_5 Production", 23 September 2020 (page 21-22).



Process Design

- ◆ The processing facility will consist of:
 - a mineral concentrator and associated services and utilities; and
 - a separate SRL processing plant to produce +98% V_2O_5 flakes.
- ◆ **Concentrator**
 - METS South Africa (Pty) Ltd (“**METS**”) designed the concentrator facility using its experience in design and construction of similar facilities in South Africa – resulting in the Capex being able to be costed at a robust level.
 - The design included three stage crushing following by dry magnetic separation to reject coarse waste material, then ball milling of the upgrade material with wet magnetic separation to produce a refined concentrate of 2.2% V_2O_5 .
 - Construction period of 9 to 12 months.
- ◆ **SRL Plant**
 - The capex estimates for the SRL plant was based on quotes of key items of equipment sourced directly from the equipment suppliers and manufacturers.
 - ENC Minerals built up costs for civils, structural steel, piping and pipework derived from a database of costs derived from similar facilities in South Africa in consultation with METS and Les Ford.
 - Costs sourced from direct quotes made up ~55% of the total construction and installation cost estimate.
 - Construction period of 24 months.



Infrastructure

◆ Freight

- The Project is located near the town of Steelpoortdrift in the Limpopo Province of South Africa and well served with national highways.
- Established unsealed roads provide access into and across the Project area and will be upgraded – this will enable haulage of product to the plant site or to customer, railhead or port.
- Rail infrastructure is located near the Project with sidings at Steelpoortdrift, Burgersfort (Apiesdoring) and Roosenekal.

◆ Power

- The Scoping Study has assumed the use of grid power with the state electricity supplier Eskom.
- Alternative power solutions will be considered if the application process with Eskom is expected to be delayed.

◆ Water

- The De Hoop dam is located 15km from the Project and raw water pipelines run adjacent to the Project.
- The Company has also applied for a Water Usage license from boreholes as an alternative water source.

◆ Tailings & Waste Management

- The beneficiation process will contain solely waste rock and no reagents or harmful materials.
- The SRL plant has incorporated a dewatering facility to remove water from residues for re-use as process water. The residues will be stockpiled away from drainage systems.

◆ Environmental, Community & Permitting

- Tenure comprises a single, granted Mining Right which expires September 2048.
- The Company will need to prepare its application for a Water Usage License to enable use of water in processing and mining as well as the creation of stockpiles on the Project – an application will be submitted once detailed site layout plans are completed.



Regional Infrastructure Advantage



ESKOM sub station, 12km from project



Platinum refinery in Bushveld Complex N of Steelport



De Hoop Dam 15km from project



Lion Ferrochrome Smelter (Xstrata) in Steelport



Steelport Rail Siding 30km from project



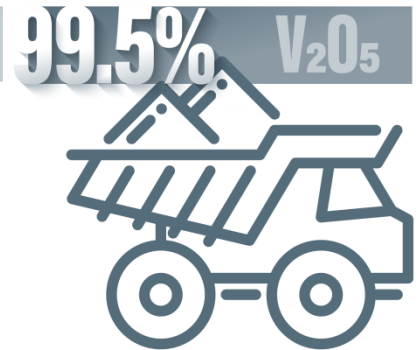
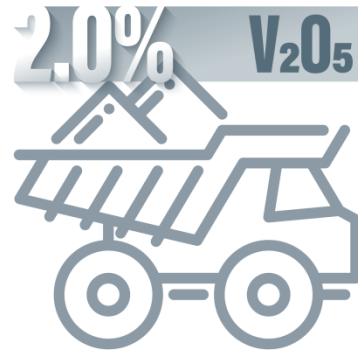
Existing Port Access



- ◆ Existing and proven transport from the Steelpoortdrift resource.
- ◆ Road or rail options.



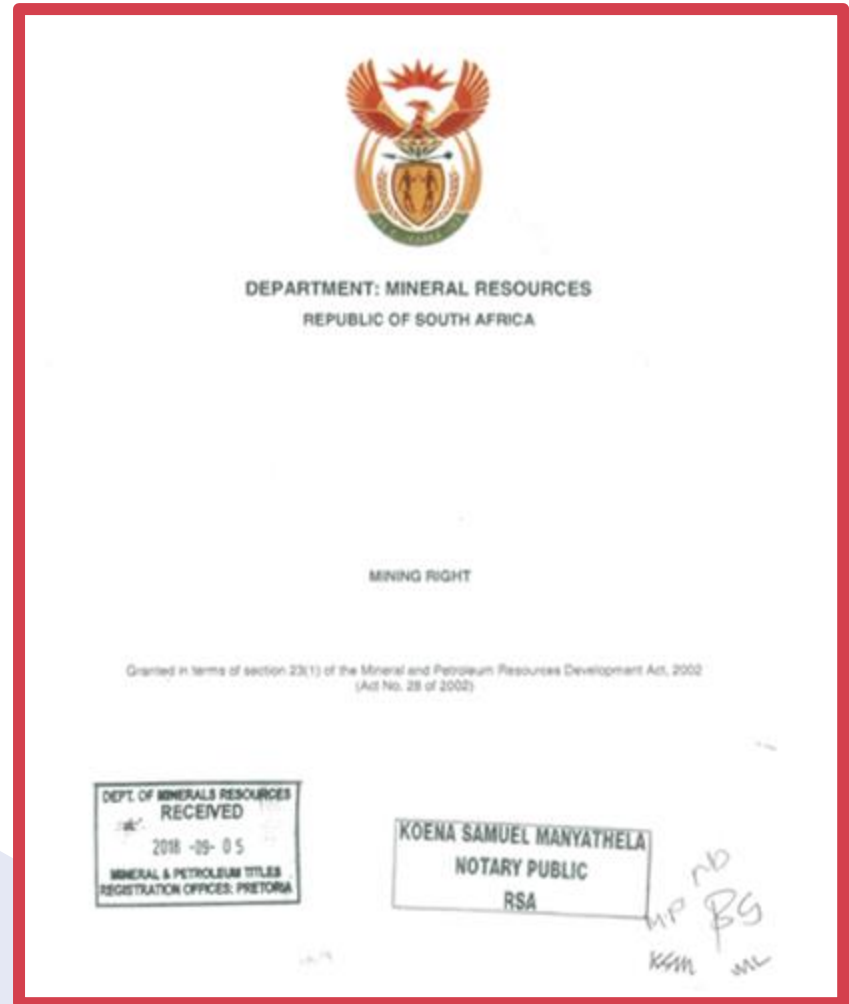
Port to... China
20 DAYS





Permitting

- ◆ The Project is covered by a granted Mining Right.
- ◆ The Mining Right remains in force until September 2048.
- ◆ The Mining Right includes approval of the Environmental Management Plan and Social & Labour Plan for the Project.
- ◆ Approvals in-place:
 - Mining Right
 - Environmental Management Plan
 - Social and Labour Plan





Community Relations Matter



- ◆ Vanadium Resources has maintained a positive relationship with local communities since project inception.
- ◆ A dedicated local community relations officer has been involved in the project since March 2018.
- ◆ Recent community meetings reaffirmed the communities' support for the project.
- ◆ Social and Labour Plan has been Approved as part of the granting of the mining lease.
- ◆ VR8 is committed to facilitating and supporting a Social Investment Plan (“**SIP**”) for the local communities.



Real Mining Experience

South African based directors Nico van der Hoven and Jurie Wessels were responsible for the establishment and development of Bauba Resources Ltd, an active chrome mining company in the Bushveld Complex.

- ◆ Both have hands-on, local, experience in exploration, mining, beneficiation and shipping to export markets that will be invaluable in progressing the project.
- ◆ Nico brings skills with exposure to marketing and selling of chrome products, including negotiating offtake agreements.
- ◆ Nico has co-founded and operated 5 chrome mines in South Africa in the last 25 years.





Access to Specialist Skills

Les Ford — Lead Consultant



Les has over 40 years of experience constructing, developing and producing vanadium projects and is regarded as one of the world's foremost experts in vanadium. Les began his career at Highveld Steel and Vanadium's Vanchem plant that used material from the same geological setting to that of Steelpoortdrift at its operations in Witbank in South Africa to produce steel and a suite of vanadium products. Later in his career Les was responsible, respectively as technical director and as managing director, for the development and construction of producing vanadium mines for Largo Resources in Brazil and for Vantech (formerly Xstrata, now Glencore). He was also intimately involved with the redesign of the Windimurra Vanadium plant in Australia and of Glencore's Vantech operations in South Africa.

METS South Africa (Pty) Ltd (SA)
Process design and costing



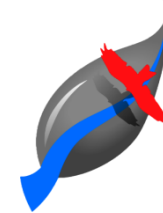
ENC Minerals (Pty) Ltd (SA)
Design and management of metallurgical test-work



Sound Mining (Pty) Ltd (SA)
Engineering, mine planning and design



Red Kite Consulting (Pty) Ltd (SA)
Environmental management and consulting



Geoactiv (Pty) Ltd (SA)
Geology, exploration and drilling



GEMECS (Pty) Ltd (SA)
Database management, resource modelling

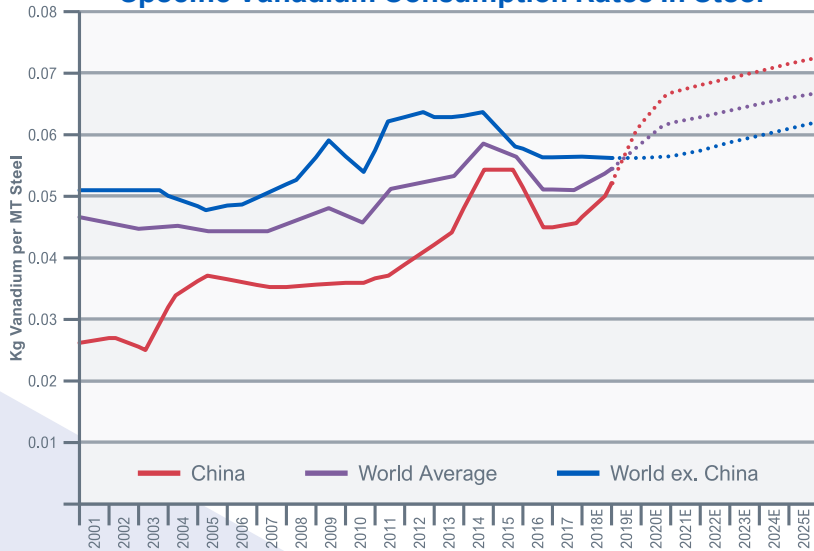


Mining Plus Pty Ltd (AU)
Resource modelling, mine planning and design

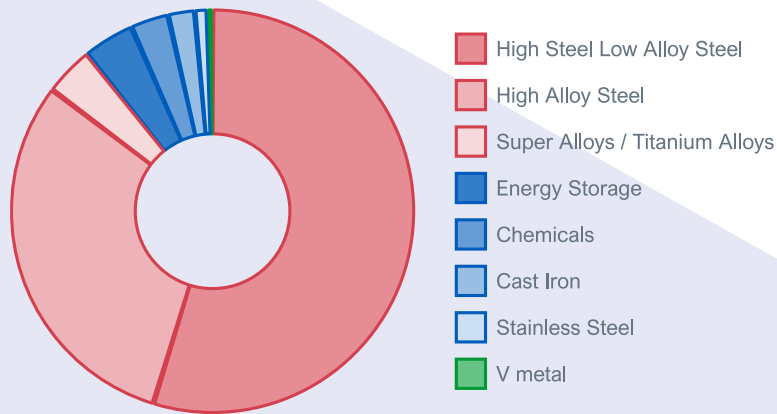




Specific Vanadium Consumption Rates In Steel



- ◆ Inventories low, additional demand will impact pricing as witnessed during 2018.
- ◆ Falls from the 2018 high suggest that low pricing will be maintained at higher levels than historical lows and remain commercially strong.



Vanadium (V₂O₅) Price Chart



Source: TTP Squared, Metal Bulletin

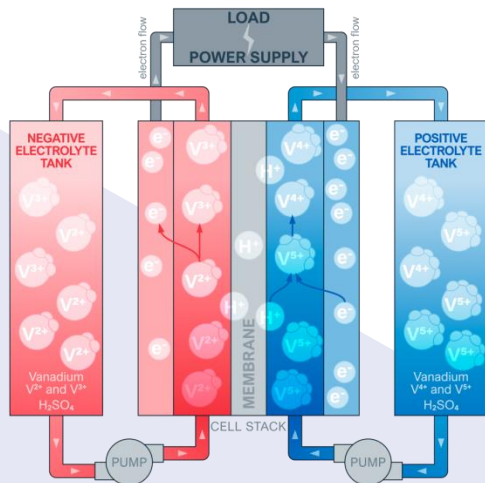


- ◆ Over 90% of the current demand for vanadium arises from its use to strengthen steel and alloys.
- ◆ Demand increasing due to more stringent regulations in China for rebar and other steel products used in construction. While implementation has been slower than expected, inspections are set to continue during 2019.
- ◆ China recently has perfected the manufacture of high-performance alloys resulting in strong growth in the sector.
- ◆ Supply of new lightweight alloys increasing in the aerospace industry. All new Boeing Dreamliner 787 and Airbus A350 now incorporate vanadium in light weight alloys up to 100 tons per aircraft.





- ◆ Forecasters expect over 1,200GW of battery capacity to be added between today and 2050, with approx. 600GW before 2025. ¹
- ◆ VRFBs forecast to represent between 15 and 25 % of battery capacity.
- ◆ Could add up to 10,000mtV of demand into an already undersupplied market. ²



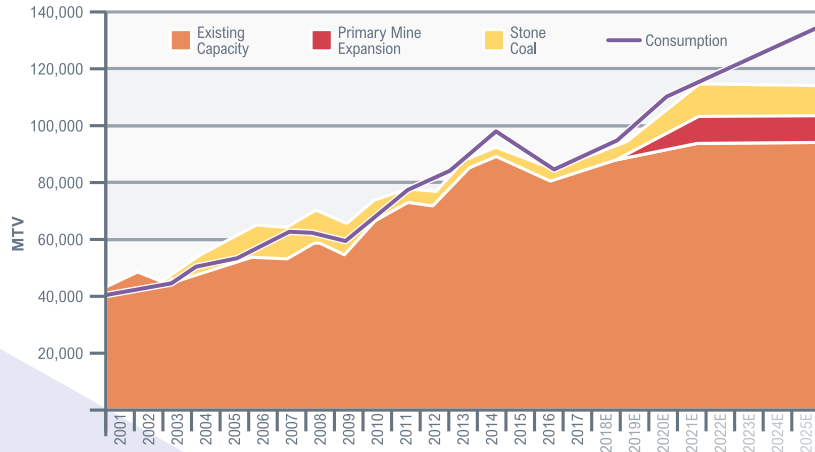
¹ BloombergNEF, New Energy Outlook 2018; International Energy Agency, World Energy Outlook 2018

² Noack et. al, 2016. Techno-economic modelling of RFB Systems (Energies 2016, 9, 627) Vanadium Flow Batteries: An In Depth Analysis. EPRI, Palo Alto, CA: 2007.1014836

Dalian City, China has signed a syndicated loan agreement to fund the first stage of a 200/800MWh vanadium battery. The first stage of the project is planned to be 100/400MWh and estimated to be complete by mid 2020.



Vanadium Production by Raw Material



- ◆ Over 85% of the world's vanadium is produced from China, Russia and South Africa.
- ◆ Chinese domestic production is largely from polluting sources (stone coal) or low-grade resources.
- ◆ Stringent implementation of Chinese environmental standards place serious doubts on the future of many Chinese stone coal resources.
- ◆ South Africa has become a major recipient of mining investment by major Chinese mineral and metal suppliers. A combination of higher grade and lower opex bodes well for quality undeveloped resources.

