



Bushveld Vanadium Project: Feasibility Study Team

Bushveld's Vanadium Project Pre-Feasibility Study (PFS) is being driven by an internal team as well as independent external consultants.

The following individuals comprise the Bushveld internal technical team:

Exploration Manager/Geology	Dr Luke Longridge
Mining Studies	Mr Wally Waldeck
Financial Modelling/Business Case Optimisation & Project Management	Hindsight Corporate Solutions - Mr Ken Greve / Mr Tertius de Villiers
Beneficiation (Concentrator plant)	Mr. Jan Rabe
Processing Infrastructure (Pyrometallurgy)	Mr. John Mangwiro
EIA, WUL, IFC, Social & Labour Plan, Regulatory compliance	Dr. Fred Mphephu

The following companies and Individuals comprise Bushveld external consultants

Processing Infrastructure (Pyrometallurgy)	Hatch Goba
Mining Planning	MSA
Environmental Impact Assessment (EIA) and Mining Right Application	Digby Wells
Geotechnical	Golder Associates Africa
Risk Management	VBKom Projects
Lidar Survey	Premier Group

Summary bio's of the above companies and individuals are provided below:

Bushveld Internal Team

1. Dr Luke Longridge

Luke Longridge is exploration manager for Bushveld Minerals, and has been with the company since 2011. He has an intimate knowledge of all of the company's projects, having managed the planning and execution of various technical work, including drilling, metallurgical testwork and resource estimation, since 2011. Luke obtained BSc Honours (2006) and PhD (2012) degrees from Wits University and has experience in a range of commodities, having worked both in South Africa and abroad, including in Mozambique, Namibia, and Canada.

2. Mr Wally Waldeck

HG (Wally) Waldeck has been actively involved in the field of rock mechanics, mine planning and mine design for the past 40 years. His expertise includes:

- underground mining feasibility studies;
- technical reviews of underground and surface mines; due diligence studies;
- the generation of mineral reserves for projects in gold, platinum, chrome and iron ore mines;
- input into Independent engineer's reports and competent persons' reports;
- mine planning, mine evaluation and mine layouts for projects ranging from large underground base metal mines to small open pit operations;
- short term planning including mining layouts, footwall drive positions and support requirements for stopes and development ends; and
- underground rock mechanics, remnant extraction and stope support investigations.

He has been an independent mining consultant from 2010 to present, and was previously with SRK Consulting from 1989 – 2010 where he was in various roles starting as Principal Mining Engineer to Corporate Consultant.

3. Mr Ken Greve

Ken began his career working for Goldfields from 1987 to 1995 and left as the Head of the Precious Metals Valuation department. He then spent 18 months as a buy side resources analyst at Nedcor Investment Bank, followed by five and half years as an investment banker at JP Morgan in Johannesburg, concentrating on transactions in the resources industry

From 2002 to 2005 he led the corporate finance function at Kumba Resources Limited where he was also a member of its Investment Review Committee. From 2005 to 2008 he was head of the Strategy and Business Development Department at BHP Billiton in Johannesburg, a director of BHP Billiton's South African holding company, a member of the South African Executive Committee of BHP Billiton and Chairman of its Transformation and Empowerment Committee

He was a member of the Richards Bay Minerals board as a BHP Billiton appointee from 2006 to 2011 and co-managed its Black Economic Empowerment Transaction. From 2008 to 2011 he worked for a small boutique corporate finance house, Allan Hochreiter, concentrating on the resources industry

Since 2011, he has been a director and co-owner of Hindsight Financial & Commercial Solutions, a boutique corporate finance firm servicing the energy, logistics and natural resources industries.

4. Mr Tertius de Villiers

Tertius is an Executive Director at Hindsight Financial and Commercial Solutions. He is a Chartered Accountant with 12 years' experience, 8 of which involved valuing businesses, structuring transactions and negotiating contracts. Tertius spent 2 years in the BHP Billiton Group treasury. During his treasury stay, which included stints in Johannesburg and The Hague, he worked on US and European Bond placements, as well as on the group's buy-back programme. Tertius returned to South Africa in 2007 and joined the group's Strategy and Business Development department, where he gained experience in valuations and structuring of BEE transactions. In May 2008 Tertius joined Allan Hochreiter, a small corporate finance advisory firm providing M&A advice to various resource companies. In July 2011 he was one of the founding members of Hindsight, where he continued advising the likes of Harmony Gold, Eskom and various junior miners.

5. Mr Jan Rabe

Jan Rabe is an experienced process engineer, with multiple feasibility studies completed under his lead. He has 10 years' experience ranging from Research and Development through pilot plant operation, international plant and lab audits and multiple ore characterisation and process flowsheet development projects in iron ore, coal, bauxite, manganese and fluorspar. He was previously the Director of Processing at Process Engineering Solutions Company (PESCO). Jan has a Bachelor of Engineering (B.Eng) (Honours) degree from the University of Pretoria.

6. Dr. John Mangwiro

John has over 20 years of experience in the mining industry with major and junior miners which include Anglo American; Rio Tinto, Blue Ridge and Umbono Capital. John has assumed executive and leadership roles in the operation of plants; in conducting prefeasibility and feasibility studies; in the commissioning and start-up of green and brown field operations in Africa. John has been involved operation of Ferrochrome production in Zimballoys. He has also participated in the Feasibility Studies of national Smelter with IDC and is well acquainted with the technical and environmental considerations to raise capital for such projects. He has been involved in salt roast at of zircon and has extensive hydrometallurgical operational and research experience in basemetals. He has extensive experience in metallurgical processing of copper and associated by products(PGM); gold; Iron; PGM; Chrome; Manganese; Coal; Phosphate; Lead & Zinc; Magnetite; Uranium, Zirconia; Nickel and other base metals.

John has a PhD from Imperial College in high temperature materials processing for base and ferrous metals and has worked at centres of excellence in pyrometallurgy in UK (NPL), Japan (DKK) and Sweden (KUT).

7. Dr. Fred Mphephu

Fred has over 10 years' experience in the mining industry working for two major mining companies, namely De Beers Consolidated Mines and Xstrata (Glencore). Fred began his career as an Environmental Coordinator for De Beers Consolidated Mines. He was seconded to different mines on a project basis reporting to the Group Environmental Manager. He joined Xstrata Alloys Rhovan Operation which is vanadium mine as an Environmental and Community Specialist in 2006. In 2010, his scope was increased to include the Vantech Operation, vanadium mine which decommissioned in 2004. He was responsible for environmental management and legal compliance, community development, managing the Social and

Labour Plan, sustainability reporting, mining right applications and licence compliance. He was reporting directly to the General Manager of Xstrata Alloys Vanadium Division. Since 2014, he has been a Director and Co-founder of Cort & Fred Consulting Engineers, who offer specialist services on Civil engineering, structural engineering, mining and environmental management.

Fred obtained a B. Environmental Sciences (Honours) degree from University of Venda as well as an MSc and PhD in Environmental Geosciences from Wits University.

Bushveld External Consultants

1. Hatch Goba (www.hatchgoba.co.za)

Hatch is a leading global company with extensive global experience in the minerals and processing industries. The company supplies engineering, project and construction management services, process and business consulting and operational services to the mining, metallurgical, energy and infrastructure industries. Hatch provides an array of services to the mining, mineral processing and metals industry and offers innovative designs of metallurgical processes that have in many cases established the standard for all metallurgical companies. Currently, Hatch has projects under way for 15 of the largest metals companies in the world by capitalization.

2. The MSA Group (www.msagroupservices.com)

The MSA Group is a leading provider of exploration, geology, mineral resource and reserve estimation, mining and environmental consulting services to the mining industry. Established in 1983 The MSA Group has serviced its international client base in more than 40 countries. MSA is the leading provider of mineral exploration services on the African continent. MSA Group's Mining Services division undertakes mining studies in the development of mineral projects during and after exploration activities so as to enhance value throughout the mining value chain. The Mining Studies service offering includes Competent/Qualified Persons Reports, Mineral Resource and Mineral Reserve Estimation, Benchmarking Assessments, Preliminary Economic Assessments and Scoping Studies and Pre- Feasibility Studies. In addition, the division has the experience and expertise to carry out Mineral Asset Valuations, full Due Diligences, Independent Peer Reviews and Technical Audits suitable for investment requirements.

3. Digby Wells (www.digbywells.com)

Digby Wells Environmental is a South African company with international expertise in providing Environmental and Social services to South African and International clients, with the focus predominantly on the Mineral Resources and Energy sectors in Africa. Digby Wells employs a large team of professional consultants and administrative staff to provide a comprehensive Environmental and Social service– a 'one-stop shop' – to its clients to satisfy all their specified needs with respect to the biophysical and human environment.

Digby Wells has extensive experience in providing services to South African and International clients, with the focus predominantly on the Mineral Resources and Energy sectors in Africa. This international experience, extending to the Americas, Europe, the CIS countries and Asia, means a wide range of projects have been undertaken to both in-country specific requirements and international standards such as the Equator Principles, and International Finance Corporation (IFC) and World Bank Group Guidelines. Services are provided over the entire life cycle of an operation from early engagement prior to exploration, securing of exploration rights in the specific jurisdiction, services during the exploration phase, pre-feasibility study,

definitive feasibility study, construction, operational phase, closure planning and implementation as well as post closure monitoring.

Services are continuously developed and new services added as the client and industry requirements dictate.

4. Golder Associates Africa

Golder Associates is an employee-owned international group of consulting companies, specialised in providing geotechnical engineering, environmental, and earth science services for natural resource and civil engineering projects. Founded in Canada in 1960, Golder Associates employs close to 8000 individuals in over 150 offices throughout North America, Europe, Austral-Asia, South America and Africa.

The lead on the project is Carl Fietze, who has 15 years of practical experience in geomechanics, engineering geology and hydrogeology aspects of open pit and underground mining. His emphasis is in the application of these tools and the development of geomechanical models for mine design. Carl has managed and carried out design work on large open pit projects in copper, iron ore, coal and uranium including the Moatize Coal Project for VALE, the Simandou Iron Ore Project for Rio Tinto, Husab Uranium Project for Swakop Uranium and the Kansanshi Copper Project for FQM. Carl has also carried out extensive geotechnical underground work in South Africa, Botswana, Zambia and the DRC, including the evaluation of the geotechnical aspects for sub-level opening stoping, sub-level caving, bord and pillar mining methods.

5. VBKom Projects

VBKom Projects is a professional and specialist Project and Risk Management service provider for the mining and capital intensive industries.

VBKom Projects has delivered various mining project management, risk management and simulation services to clients including BHP Billiton, Sasol, Bigen Africa, ThyssenKrupp, DRA, African Rainbow Minerals among others. Their risk consultants are internationally qualified and accredited with local and international risk authorities, and can advise on strategic or enterprise risk, project, tactical and technical risk, as well as operational / site risk.

6. Premier Group

Premier Group offers integrated survey services to the mining, engineering and environmental sectors in Southern Africa. Their expertise includes:

- Aerial Surveys(aerial photography and digital geo-referenced orthophotos)
- Mapping (photogrammetry / 3D mapping, topographical mapping, statutory mine plans, pit and stockpile volumetric calculations, digital terrain models, and contouring)
- Surveys (mining surveys, GPS ground surveys, survey control establishment, borehole collar surveys, precise levelling surveys, slope monitoring, ground based laser scanning, exploarion and planning surveys)
- Other Products and Services (legal appointments, survey project management, data management, CAD editing, GIS data acquisition, 3D modelling and acquisition, environmental rehabilitation and monitoring)