



ASX Announcement

Gabanintha Project Update

AVL commences detailed metallurgical test work

Highlights:

- **AVL has appointed Bureau Veritas Laboratories to conduct detailed metallurgical test work under the supervision of Wood Group consultants**
- **Initial financial modelling underway for Gabanintha project development.**
- **Final environmental base line surveys completed. Reporting of survey outcomes for flora, fauna, stygofauna and troglofauna anticipated as precursor to EIA process.**
- **China marketing strategy with Mastermines underway with conference attendance and roadshow planned for November 2017.**
- **Vanadium demand and price surging in China and globally as steel market pressure and rising interest in energy storage applications increases.**

Australian Vanadium Limited (ASX:AVL, “the Company” or AVL”) is pleased to announce an update on the work underway at its flagship Gabanintha vanadium project in Western Australia.

AVL is advancing Gabanintha towards feasibility and production. The current Mineral Resource includes a distinct massive magnetite high-grade zone of 92.8 Mt at 0.96% V₂O₅, consisting of Measured Mineral Resource of 10.2Mt at 1.06% V₂O₅, Indicated Mineral Resource of 4.8Mt at 1.04% V₂O₅, and Inferred Mineral Resource of 77.8Mt at 0.94% V₂O₅.

Importantly, previous metallurgical work has shown Gabanintha’s high grade ore can produce a high-yield, high-grade magnetic concentrate, placing the project in a leading position globally to be the next hard rock vanadium producer (see ASX Announcement dated 7 December 2015: Outstanding metallurgical results)

Appointment of process laboratory and commencement of detailed test work.

On 4 October 2017, the Company announced the appointment of internationally recognised consultants Wood Group (formerly AMEC Foster Wheeler) to manage the detailed program which

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Projects:

Gabanintha – Vanadium
Blesberg- Lithium/Tantalum/Feldspar
Northanna Hill –Uranium/Vanadium
Coates – Vanadium



● GABANINTHA ● PERTH
● PORT HEDLAND ● PORT GERALDTON

aims to determine the nature of the mineralised domains present in the resource at Gabanintha.

The Company is pleased to announce that Bureau Veritas Laboratories has been appointed to conduct the detailed work under AVL engineer's supervision and Wood Group management.

The samples have been selected from PQ and HQ drill core of the massive high grade magnetite horizon at Gabanintha (See Figure 1):

- 10 composite samples of completely unoxidised (fresh) material, grading between 0.89% V_2O_5 and 1.39% V_2O_5
- Individual metres contain up to 1.49% V_2O_5 with an average 1m grade of 1.10% V_2O_5
- 9 composite samples of partially oxidised (transition) material grading between 0.52% V_2O_5 and 1.57% V_2O_5
- Individual metres contain up to 2.22% V_2O_5 with an average 1m grade of 1.10% V_2O_5
- 5 composite samples of oxide material grading between 1.01% V_2O_5 and 1.41% V_2O_5
- Individual metres contain up to 1.48% V_2O_5 with an average 1m grade of 1.22% V_2O_5



Figure 1. An image of high grade massive magnetite PQ (83mm diameter) core from Gabanintha

The work being conducted includes geometallurgical characterisation, mineralogy, comminution, gravity and magnetic separation testwork. Silica reduction will also be investigated.

The detailed test work has commenced, with analysis and reporting expected in January 2018.

Following the testwork program completion, the Company and its consultants will analyse flowsheet concepts and determine preferred options. Following the completion of the flowsheet definition phase the company will commence;

- A mining study, including pit optimisation and a preliminary economic assessment of an initial mine schedule.
- Incorporation of metallurgical test results and mining study results into a pre-feasibility study for development of a concentrate plant at Gabanintha.
- Completion of a scoping study review of a full-scale vanadium processing facility.

Initial financial modelling is underway for Gabanintha project development

Concurrent with the metallurgical test work program, the technical team at AVL is collating and preparing preliminary economic data. This information is drawn from analysis of previous work by AVL and industry analysis. The purpose is to identify key project parameters that can drive operating and capital cost. These preliminary models can then be refined with data flowing from the metallurgical work and subsequent flowsheet analysis.

Previous work has indicated that the vanadium Mining and processing is driven by a number of key parameters. These include;

- Mining Cost (\$)
- Stripping Ratio (Waste to Ore)
- The vanadium feed grade of ore to the comminution and beneficiation plant (CMB) (% V_2O_5)
- The mass yield of ore to concentrate (%)
- Concentrate quality (% V_2O_5 and % SiO_2)
- Power cost (\$/kWh)
- Water availability, consumption and recovery (m^3 /ton of feed)
- Cost of transportation (\$/t.km)
- Reagent costs (\$)

On the basis of previous work, Gabanintha presents a strong case for processing with an indicative high mass yield to concentrate and high concentrate quality.

Capital costs at Gabanintha can be significantly reduced by the optimisation of the parameters above.

Due to the requirements of the ASX and the JORC code, reporting of financial results can only be released when the Company has both Measured Resources and a pre-feasibility level study.

Final environmental base line work completed

The Company has finalised baseline Level 2 Studies at Gabanintha for;

- Flora and vegetation (dry and wet season completed)
- Terrestrial fauna (dry and wet season)
- Subterranean Fauna (wet season completed, trap deployment completed, trap collection underway)

Final reporting on all aspects of the work is anticipated by early 2018. The identification of any significant stygofauna and troglofauna species is a critical path item for planned project development.

Once these areas of project impact are clear, the development of Environmental Impact Assessments (EIA) can be undertaken. These areas will be defined clearly by the mining and processing component of the pre-feasibility study.

Detailed hydrology (ground water) studies will be initiated once process parameters and areas of impact are finalised.

China focused Materials' Marketing

The Company recently appointed Mastermines as a mining materials promotion and marketing consultancy with an experienced China-focused team. Mastermines will provide AVL with an active approach towards Chinese investment in the future, as the Company seeks to develop interest in Gabanintha and markets for its potential products, as a steel additive and for an ever-widening range of energy storage related applications.

Mastermines has aggressively commenced activity in China, providing materials and contact information for AVL at the recent ferro alloy summit held in Zhejiang at the end of October 2017.

Mastermines will conduct an introductory roadshow on behalf of AVL during November 2017. The Mastermines team will visit three cities and hold introductory meeting with companies including electrolyte producers, research institutes, battery manufacturers and steel producers.

Vanadium Demand and Pricing Surges in September and October

The vanadium price, as indicated by the traded prices of Ferro-Vanadium (FeV) and Vanadium Pentoxide (V_2O_5) has been rising consistently from a long term low since December 2015 (US\$2.58/lb V_2O_5). Prices reached highs of over US\$10/lb V_2O_5 in October but have since pulled back to above the long term average price. In early October, pricing of around US\$7.60/lb V_2O_5 were quoted. (Source Metal Bulletin, Vanitec)

Vanadium supply has been developing a structural deficit over a number of years, stemming from a combination of low prices, loss of production in South Africa and erosion of existing stockpiles. This has resulted in the price rises since 2015 and as new, low-cost capacity is not easy or fast to bring to market, it is the Company's view that the vanadium market will be strong for several years to come.

This long term view on bullish pricing and demand in the dominant steel sector, coupled with the growing markets for vanadium in energy storage, are strong positive indicators for the ongoing evaluation of Gabanintha, with its unique characteristics and location.

For further information, please contact:

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Competent Person Statement — Mineral Resource Estimation

The information in this report that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Brian Davis (Consultant with Geologica Pty Ltd). Mr Davis is a shareholder of Australian Vanadium Limited. Mr Barnes and Mr Davis are members of the Australasian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specifically, Mr Barnes is the Competent Person for the estimation and Mr Davis is the Competent Person for the database, geological model and site visits. Mr Barnes and Mr Davis consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The information is extracted from the report entitled “Significant vanadium resource upgrade at Gabanintha” released to ASX on 5 September 2017 and is available on the company website at www.australianvanadium.com.au.

The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resource or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the competent person’s findings are presented has not been materially modified from the original market announcement.

Appendix 1 - Mineral Resource estimate by domain and resource classification using a nominal 0.4% V₂O₅ wireframed cut-off for low grade and nominal 0.7% V₂O₅ wireframed cut-off for high grade (total numbers may not add up due to rounding)

Zone	Classification	Mt	V ₂ O ₅ %	Fe %	TiO ₂ %	SiO ₂ %	Al ₂ O ₃ %	LOI %
HG	Measured	10.2	1.06	41.6	12.0	11.6	8.6	4.2
	Indicated	4.8	1.04	41.9	11.5	12.0	8.0	3.6
	Inferred	77.8	0.94	41.2	10.7	12.7	7.9	3.3
	Sub-total	92.8	0.96	41.3	10.9	12.6	8.0	3.4
LG 2-5	Measured	-	-	-	-	-	-	-
	Indicated	20.5	0.52	24.3	7.1	27.9	17.6	8.4
	Inferred	61.8	0.50	26.2	7.0	26.9	16.1	7.2
	Sub-total	82.4	0.51	25.7	7.0	27.2	16.5	7.5
Trans 6-8	Measured	-	-	-	-	-	-	-
	Indicated	-	-	-	-	-	-	-
	Inferred	4.5	0.66	28.4	7.2	24.5	16.6	8.4
	Sub-total	4.5	0.66	28.4	7.2	24.5	16.6	8.4
Total	Measured	10.2	1.06	41.6	12.0	11.6	8.6	4.2
	Indicated	25.4	0.62	27.7	7.9	24.9	15.8	7.5
	Inferred	144.1	0.75	34.4	9.0	19.2	11.7	5.2
	Sub-total	179.6	0.75	33.8	9.0	19.6	12.1	5.4