

## Maiden Resource Estimate – Abenab Vanadium Project, Namibia

### Highlights

- JORC Compliant Inferred Resource Estimate 0.86 million tonnes @ 1.25% V<sub>2</sub>O<sub>5</sub><sup>1</sup>
- Exploration Target\* of 1 to 1.5 million tonnes @ 1 to 1.2% V<sub>2</sub>O<sub>5</sub>
- Mineralisation remains open at depth and along strike with regional exploration potential
- Surface Stocks defined 80,000-130,000 tonnes @ 0.8 to 1.5% V<sub>2</sub>O<sub>5</sub> (refer to ASX Release 19 June 2012)
- Superior vanadium concentrates achieved from gravity separation

Avonlea Minerals Limited (ASX: AVZ) (“Avonlea”) is pleased to announce its maiden vanadium resource estimation for Avonlea’s Abenab vanadium prospect, northern Namibia. The maiden resource estimate was completed by Avonlea’s geologists, after the program which comprised of a total of 8 diamond holes for 2597m.

Inferred	Tonnage (tns)	V <sub>2</sub> O <sub>5</sub> %	Zn%	Pb%
TOTAL	854,700	1.25	1.30	2.96

Table I: JORC compliant Inferred Resource

The significance of the maiden resource estimate is apparent when considered in light of the exceptional concentrate grades achieved from simple (low capital intensity) gravity separation procedures for this unique style of mineralisation found at Abenab. The mineralisation is unlike the typical magnetite hosted vanadium deposits around the world.

The “tenor” or vanadium concentrate grade achieved by Avonlea is approximately 18-20% V<sub>2</sub>O<sub>5</sub>; the industry benchmark is up to 3% V<sub>2</sub>O<sub>5</sub>.

The total JORC Inferred resource estimate was interpreted using geological and assay grades with a cut-off of 0.5% V<sub>2</sub>O<sub>5</sub> for the wireframe interpretations. The ore zone modelled ranged from 3-30m wide with good continuity over the strike length of 75m from the current drilling. The ore zones modelled from a series of stacked lenses with the quartz-carbonate host unit. High grades of up to 14.7% V<sub>2</sub>O<sub>5</sub> do occur within the ore zones and a top cut of 7.56% V<sub>2</sub>O<sub>5</sub>, 15.5% Pb and 5.25% Zn was applied in the resource estimation.

<sup>1</sup> Refer to full details of the resource estimate in Table I and Annexure I.

\* This exploration target mineralisation tonnage and grade is conceptual in nature as there has been insufficient exploration completed to define a Mineral Resource in accordance with the JORC Code (2004), and it is uncertain if further exploration will result in the determination of a Mineral Resource.

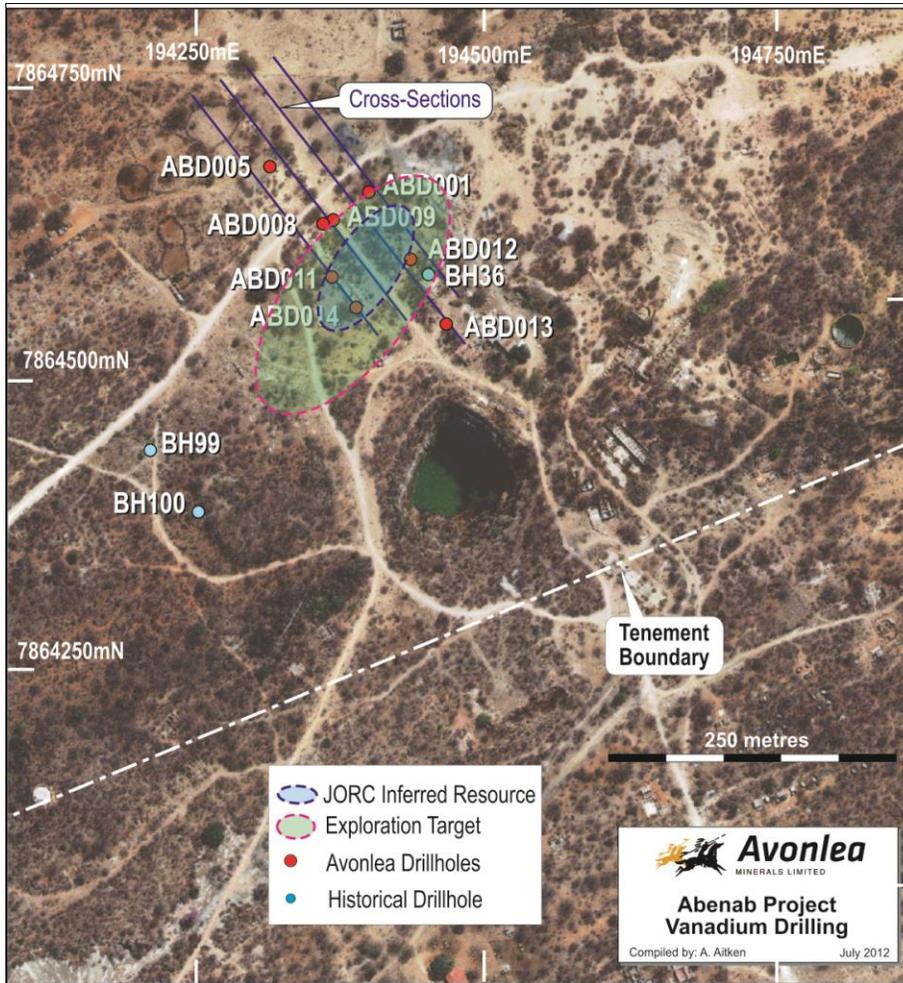


Figure 1: Plan view of the Abenab prospect, including current and historical drill hole locations.

The strike extensions are confined to the quartz-carbonate breccia host that has been defined by Avonlea and historical interpretations. The current mineralisation extends from 80m to ~350m below surface, current drilling has drilled to a depth of 460m.

As announced to ASX on 19 June 2012 Avonlea has also qualified the surface stocks from the historical operations such as the old ROM pad and Tailings Dam (see Figure 2 for location and Table 2 for details). With new metallurgical test work completed on the Tails Dam I bulk sample, wet screen analysis of the samples indicated that 98% is of a size less than 38µm with grades ranging from 0.25-0.35% V<sub>2</sub>O<sub>5</sub>. With this fine particle size the recovery of the vanadium could be completed using centrifugal gravity techniques such as Falcon separators or Kelsey jigs. These options can be further evaluated

from further metallurgical test work to be completed.

The potential to produce a saleable concentrate from the surface stocks can be assessed via the processing of a 1,000kg representative sample transported from Namibia. The aim of the bulk sample is to evaluate the grade of the ROM Pad and also attempt to get a final conceptual flow sheet for the gravity processing plant that is to be used at Abenab. The current flow sheet has involved simple crushing to -1mm with several stages of spiral and wet table gravity separation to produce a very clean concentrate with grades of approximately 18% V<sub>2</sub>O<sub>5</sub>, 40% Pb and 12% Zn. Following the development of the conceptual flow sheet refinement of the CAPEX and OPEX ranges can be evaluated.

	Lower Tonnage	Upper Tonnage	V <sub>2</sub> O <sub>5</sub> %	Pb% <sup>***</sup>	Zn% <sup>***</sup>
ROM Pad	100,000	130,000	0.8-1.5		
Tails Dam I	80,000	100,000	0.25-0.35	1.3-2.0	1.5-2.5

Table 2: Surface Stocks at Abenab with tonnage and grade ranges (\*\*no range of grade for Pb and Zn has been completed for the ROM pad)

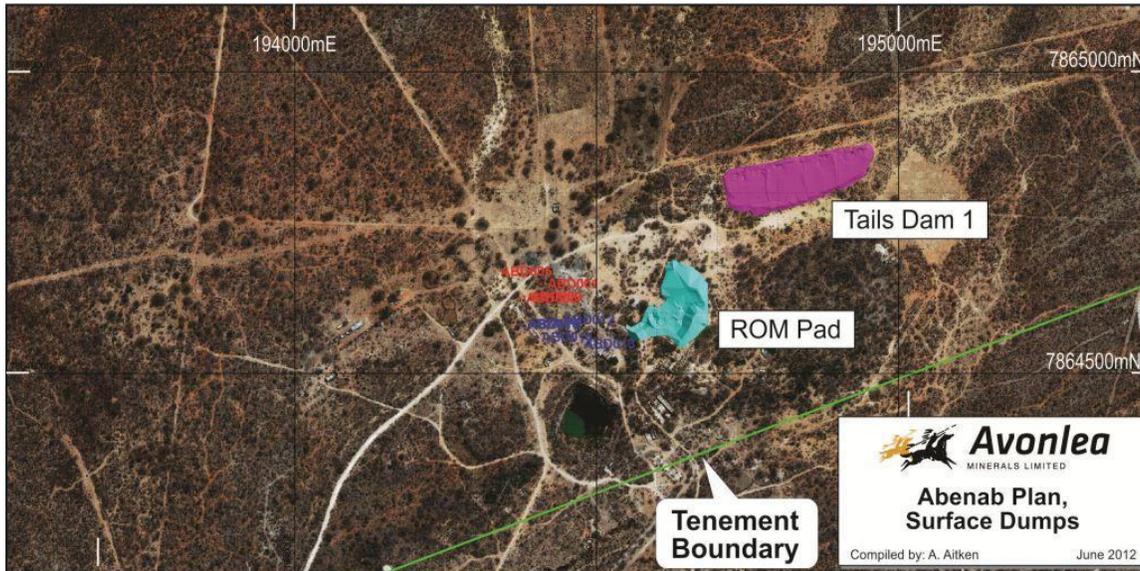


Figure 2: Plan view of the Abenab prospect showing the location of ROM Pad and Tails Dam 1 with respect to AVZ drilling and historical open pit

Managing Director David Riekie said:

*“A maiden resource estimate and significant Exploration Target from the near mine diamond drilling program, has been an important milestone for Avonlea. It serves to emphasise the emerging potential of the project and its scalability.*

*With additional regional and near surface exploration of mineralisation, the breccia host zone offers further potential. Coupled with the anticipated demand for the use of high purity vanadium for the green energy battery storage solutions, Avonlea is well placed to capitalise on its exceptional vanadium concentrate characteristics.*

*In the prevailing market, projects that offers superior head grade, low capital intensity by way of simple crush and gravity separation and a peerless end vanadium concentrate, should start to resonate with investors and potential key strategic partners alike.”*

Yours Faithfully

**David Riekie**  
**MANAGING DIRECTOR**

**About Avonlea**

Avonlea Minerals Limited (ASX: AVZ) is an Australian publicly listed exploration company based in Perth, Western Australia. It operates with a board experienced in African exploration and corporate matters.

AVZ through its local subsidiaries in Namibia has accumulated an exciting portfolio of Exclusive Prospecting Licences (EPL's). The company has applied for EPL's covering 9,500sq km (1,625kms remain pending) and are considered prospective for Specialty Minerals (Vanadium & Tin), Rare Earth Elements and Precious and Base Metals.

AVZ announced in December 2011 details of a JORC compliant Fe inferred Resource estimate of 693 million tonnes at 24% Fe from its Ondjou Prospect; drilling is continuing to expand on this base. In addition the company has released details of the potential Exploration Target size of its prospect of between 2 to 3.4Bt (20 – 30%+ Fe) from this and its other Fe prospects.\*

\*This exploration target mineralisation tonnage and grade is conceptual in nature as there has been insufficient exploration completed to define a Mineral Resource in accordance with the JORC Code (2004), and it is uncertain if further exploration will result in the determination of a Mineral Resource.

The information in this report that related to Exploration Results, Exploration Targets, Mineral Resources or Ore Reserves is based upon information compiled by Mr Alex Aitken a member of the Australian Institute of Geoscientists. Mr Alex Aitken is a full time employee of the company. Mr Aitken has sufficient experience which is relevant to the style and mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent persons as defined in the 2004 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Aitken has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Annexure I

Criteria	JORC Code Assessment Criteria
<i>Drilling techniques.</i>	<ul style="list-style-type: none"> <li>A combination of HQ and NQ core drilling from surface was utilised</li> </ul>
<i>Drill sample recovery.</i>	<ul style="list-style-type: none"> <li>Sample recovery was logged by AVZ geological team. Good recovery was encountered in 80% of the drilling.</li> </ul>
<i>Logging.</i>	<ul style="list-style-type: none"> <li>Detailed lithological and structural logging was carried out by AVZ geologists to a high standard utilising a company standard protocols.</li> <li>Lithology, alteration, mineralisation and structure were captured in the logging</li> </ul>
<i>Sub-sampling techniques and sample preparation.</i>	<ul style="list-style-type: none"> <li>Drill core samples have been ½ and ¼ core sampled from HQ and NQ core.</li> <li>Sample intervals are within 0.3m to 1.2m with an average of 1m.</li> <li>Drill core was cut on site by AVZ personnel with samples confined by geological boundaries from logging as assigned by AVZ geologists</li> </ul>
<i>Quality of assay data and laboratory tests.</i>	<ul style="list-style-type: none"> <li>All samples were submitted to Genalysis- Canning vale for analysis. Samples were submitted to Genalysis –Walvis Bay, Namibia for initial sample preparation and then transported to Canning Vale.</li> <li>Samples were analysed for V, Pb, Zn, S, Cu, As using ICP/MS/OS methods</li> <li>QAQC was analysed from samples submitted to laboratory and found to be sufficient for the resource estimation</li> <li>Standards were routinely submitted with all assay batches</li> </ul>
<i>Location of data points.</i>	<ul style="list-style-type: none"> <li>Drill hole collars were located either by DGPS or GPS with sufficient accuracy for this study.</li> </ul>
<i>Geological interpretation.</i>	<ul style="list-style-type: none"> <li>Geological interpretation has been conducted in the software package Micromine with sectional and plan interpretation based on geological and grade data.</li> <li>Interpretation was conducted by AVZ geologists</li> <li>Interpretation was guided by geological logging with mineralisation contained within the quartz-carbonate breccia as descloisite mineralised breccias and veins</li> </ul>
<i>Dimensions.</i>	<ul style="list-style-type: none"> <li>The geological resource is confined to an area approximately 125m by 160m, with 4 stacked lens of mineralisation from 3-30m thick zones.</li> <li>Resource block model has extents to adequately cover the known mineralisation</li> <li>Drill holes are approximately 25m x ~50m spaced, on 25m section lines</li> </ul>
<i>Estimation and modelling techniques.</i>	<ul style="list-style-type: none"> <li>Mineral resource estimation has been conducted using Inverse Distance Weighting Power 2 with a search ellipse based on geological and grade continuity.</li> <li>Four interpolation passes were conducted on the data with Pass 1 using a 12.5m radius, Pass 2 25m radius, Pass 3 37.5m radius and Pass 4 50m radius</li> <li>Interpolation passes 1 to 4 were utilised for resource classification</li> <li>Interpolation was validated via comparison to raw drill assays, composite assay data and a separate Inverse Distance Weighting Power 3 block model</li> <li>Interpolation of V2O5, Pb, Zn and Bulk Density was performed on composited data and high grade values cut</li> </ul>
<i>Cut-off parameters.</i>	<ul style="list-style-type: none"> <li>Statistical analysis indicated a high grade cut to be used for V2O5(7.56%), Pb(15.5%), Zn(5.25%) grades</li> </ul>
<i>Bulk density.</i>	<ul style="list-style-type: none"> <li>Bulk density was measured for the samples from ABD008 with a total of 253 samples, using the 'immersion' method.</li> <li>This data was utilised to calculate bulk density for the resource estimation utilising the formula, Bulk Density= 0.0011*(V2O5%+Pb%+Zn%)+2.8029</li> </ul>
<i>Classification.</i>	<ul style="list-style-type: none"> <li>Mineral Resource classification has been completed in accordance with the JORC Code (2004)</li> <li>The classification of mineral resources was completed by AVZ geologists and was based on the drill hole spacing, geological interpretation and representativeness of all assay data</li> </ul>
<i>Audits or reviews.</i>	<ul style="list-style-type: none"> <li>A review of all available historical data has been conducted by AVZ geologists with only the drill log for BH36 located. Assays and intervals along with geology has been utilised along with the AVZ data collected and has a positive correlation with the known mineralisation and geology</li> </ul>

## Annexure 2

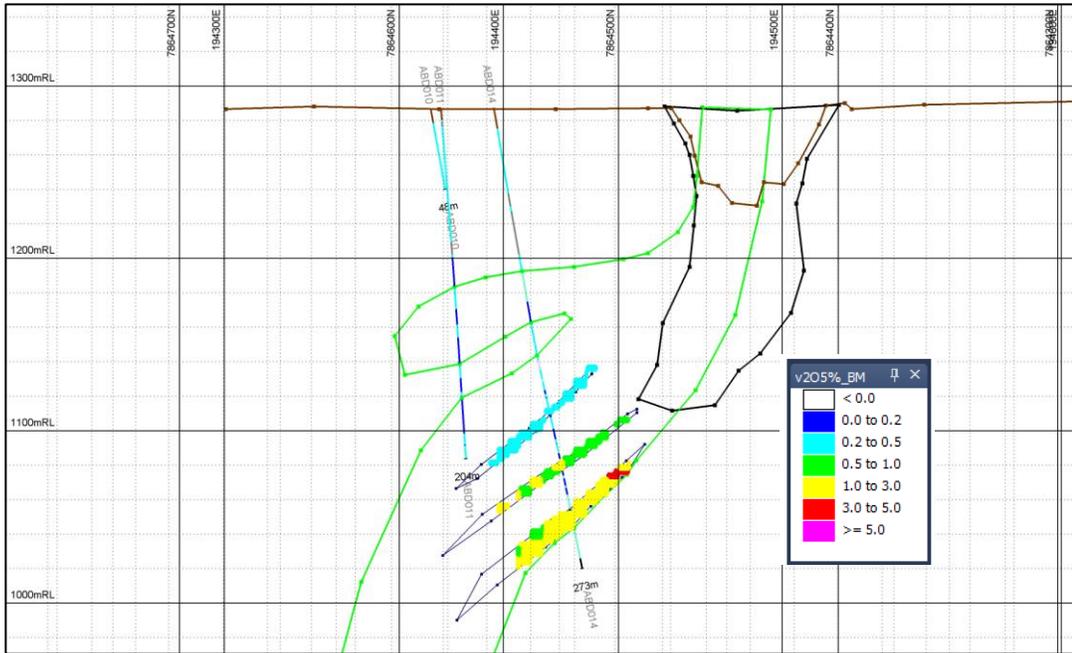


Figure 3 Cross section of Inferred Resource holes ABD011 and ABD014, Green outline = breccia host, brown= surface topography, black= historical mined area.

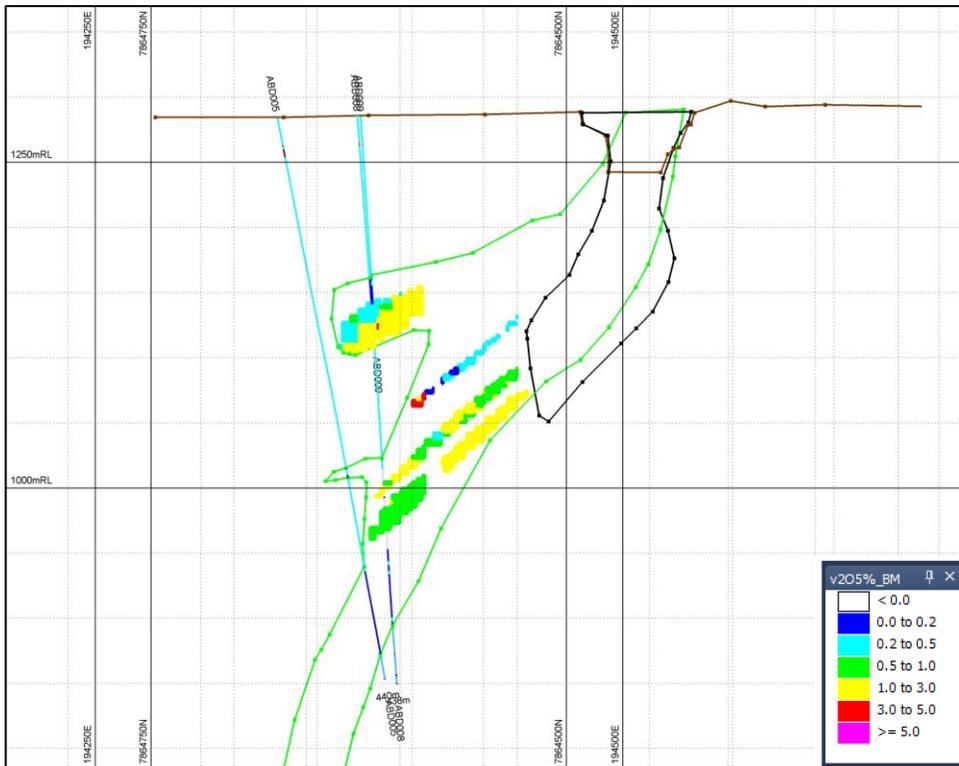


Figure 4 Cross section of Inferred Resource holes ABD005, ABD008 and ABD009, Green outline = breccia host, brown= surface topography, black= historical mined area.

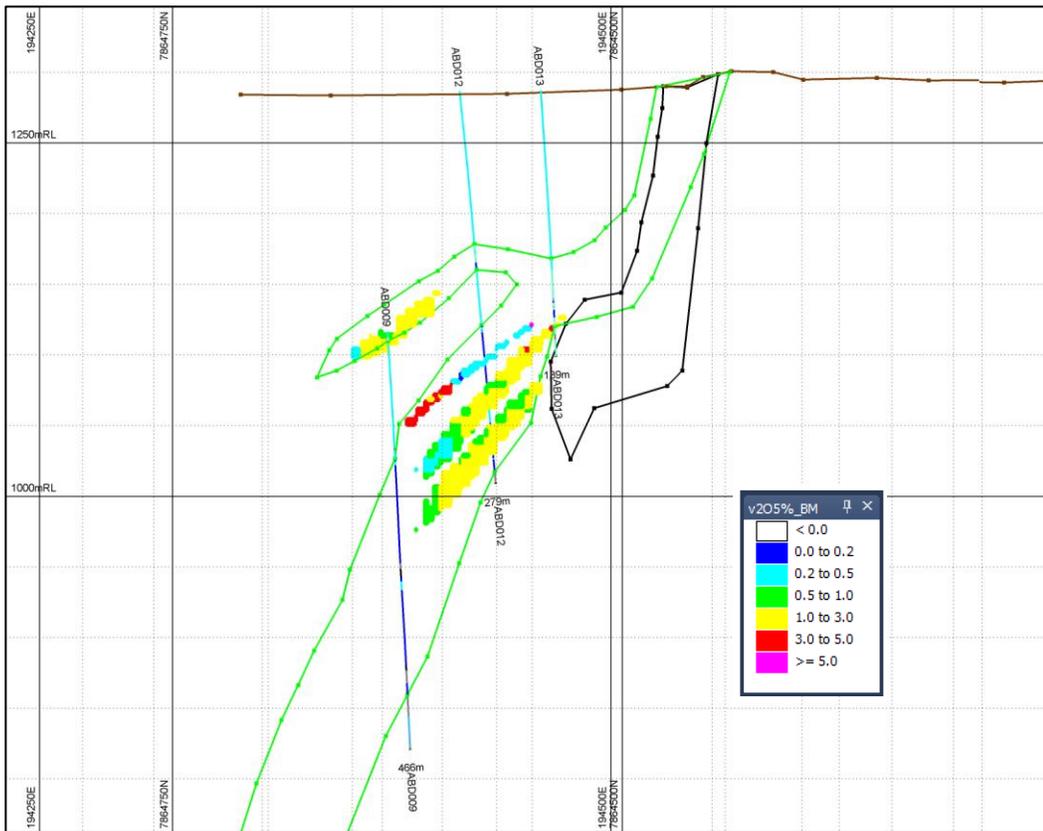


Figure 5 Cross section of Inferred Resource holes ABD009, ABD012 and ABD013, Green outline = breccia host, brown= surface topography, black= historical mined area.

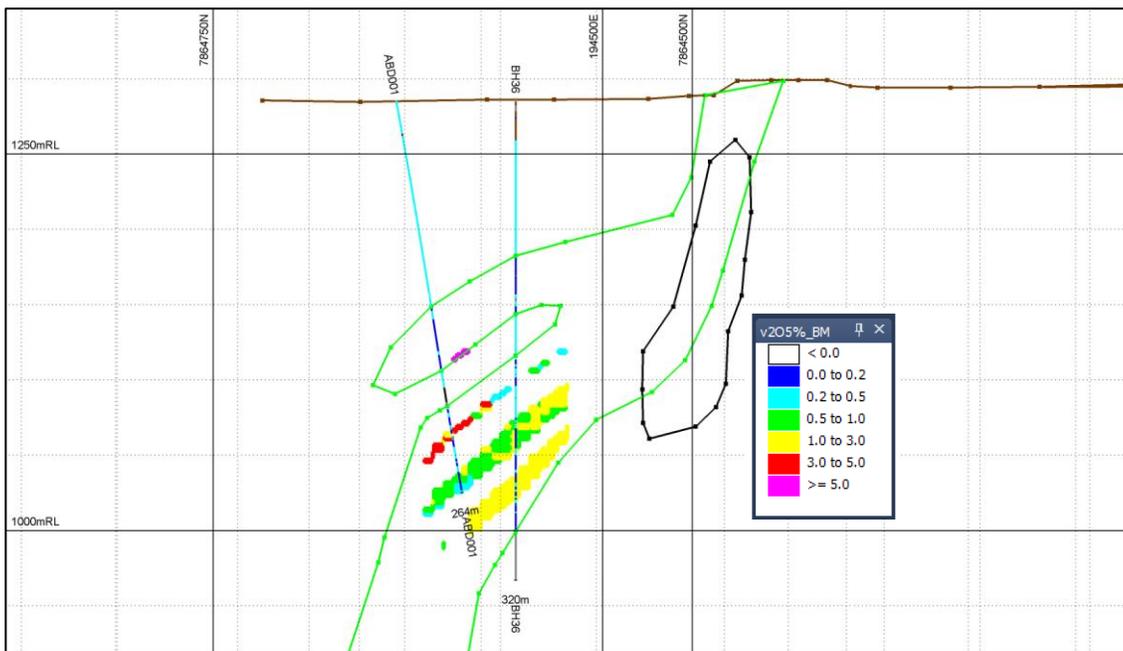


Figure 6 Cross section of Inferred Resource, holes ABD001 and BH36, Green outline = breccia host, brown= surface topography, black= historical mined area.