

Prospective Ore Deposit Geology for Copper Sulphides at Vulcan West: Assay Results

Enterprise Metals Limited (“Enterprise” or “the Company”) (ASX: ENT) advises that assay results have been received for 4 metre composite samples from reverse circulation (RC) drill hole VWRC001, drilled to test the Vulcan West Moving Loop Electromagnetic (MLEM) target at Doolgunna in Western Australia. Peak copper assays up to 4 metres at 1,510 ppm (0.15%) Cu are supportive of Volcanic Massive Sulphide (VMS) prospectivity.

The Vulcan West EM target is a discrete basement conductor located in the volcano-sedimentary stratigraphy of the Narracoota/Karalundi Formations, in a similar stratigraphic position to Sandfire Resources NL's DeGrussa and Monty massive sulphide copper deposits.

RC drill hole VWRC001 was collared at 725047E, 7159404N with a -60 dip on azimuth 150 degrees magnetic. After passing through 12 metres of alluvial cover, the hole penetrated a deep zone of oxidation to 81m downhole, then medium grained dolerite, with weak-medium pervasive chlorite-epidote alteration, along with weak-moderate silicification to ~192m.

The hole then intersected a 64m thick (downhole) zone of alteration consisting of interbedded green-grey shale and **fine-grained dolerite, with red jasper** occurring in or at the boundary with shale. Locally minor pyrite (~0.1-1%) and trace chalcopyrite (~0.1%) were associated with the red jasper. The dolerite showed weak-medium-strong chlorite-epidote alteration.

The hole then entered a 40m thick zone of finely laminated sulphide-rich (~5% - 20%) black shale and minor dolerite. The sulphides were dominantly pyrite and pyrrhotite. At the contact between the altered mafic zone and the sulphidic sediments, one 4m composite sample assayed **1,510ppm Cu** (from 252 metres). The average assays for these two zones are shown below Table 1 and the assays for all intervals are shown in Appendix 1.

Table 1. Average Assay Data for 4 Metre Composite Samples, Alteration & Sulphide Zones

From (m)	Int (m)	Ag ppm	As ppm	Ba ppm	Bi ppm	Cd ppm	Cu ppm	Pb ppm	Zn ppm	Fe %	S %	Mn ppm	Comment Zone
192	64	0.7	2	524	5	4	230	17	109	9.8	0.15	4,304	Altered mafic volcanics
256	40	0.7	20	222	8	2	84	9	59	11.0	2.01	2322	Sulphidic sediments

Sulphide-bearing red jasperite indicates copper prospectivity

The interbedded sulphide-rich shale unit with minor dolerite from 256 to 296m is the likely source of the modelled Vulcan West MLEM anomaly. However, the zone from 192 to 256m which displayed red jasper alteration with associated sulphides (including trace chalcopyrite) is considered to be a potential ore horizon.

Enterprise considers that the mineralised altered mafic volcanic zone overlying the sulphidic sediments may represent the contact between the Narracoota Fm and the underlying Karalundi Fm .

PVC casing was inserted into hole VWRC001 to provide access for down hole electromagnetic (DHEM) surveying in early 2016. The DHEM survey will be used to confirm that the surface MLEM target with a modelled strike length of 380m has been intersected, and will also search for the most conductive zone which potentially contains economic massive sulphides.

Assays for one metre samples from 220m to 296m are still awaited.



Plate 1. RC Drilling Rig at Vulcan West Prospect, December 2015

Dermot Ryan
Managing Director

Competent Persons statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Dermot Ryan, who is an employee of Xserv Pty Ltd and a Director and security holder of the Company. Mr Ryan is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person 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. Mr Ryan consents to the inclusion in this report of the matters based on information in the form and context in which it appears. Mr Ryan and Enterprise Metals Limited confirm that other than the Geophysical Exploration Results presented in this Report, they are not aware of any new information or data that materially affects the information included in the relevant previous Enterprise Metals Limited market announcements relating to the Vulcan Prospect.

Appendix 1. Vulcan West, Assay Data for 4 Metre Composite RC Samples

From	To	Au	Ag	As	Ba	Bi	Cd	Cu	Pb	Zn	Fe	S	Mn
(m)	(m)	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	Detect	0.005	0.5	2	5	5	1	1	2	2	0.01	0.01	2
0	4	0.009	<0.5	5	379	<5	1	39	24	71	5.4	<0.01	1090
4	8	<0.005	<0.5	10	191	8	2	55	22	31	9.1	<0.01	454
8	12	<0.005	<0.5	15	383	11	3	76	33	50	14.6	0.01	626
12	16	0.011	<0.5	7	93	16	3	81	14	51	14.2	0.01	424
16	20	<0.005	<0.5	3	64	15	3	94	13	41	15.3	<0.01	499
20	24	<0.005	<0.5	7	27	13	3	103	11	52	13.8	<0.01	445
24	28	<0.005	<0.5	8	78	15	3	135	13	35	12.6	0.03	1,188
28	32	<0.005	<0.5	11	309	11	2	204	11	61	13.6	<0.01	3,331
32	36	<0.005	<0.5	11	192	13	2	254	10	81	14.1	<0.01	2,597
36	40	<0.005	<0.5	7	106	9	2	226	9	130	11.7	<0.01	1,439
40	44	<0.005	<0.5	2	85	10	3	36	11	99	11.3	<0.01	1,815
44	48	<0.005	<0.5	2	42	13	2	40	9	64	13.9	<0.01	1,632
48	52	0.011	<0.5	2	64	7	3	46	10	65	10.1	<0.01	2,020
52	56	<0.005	<0.5	3	69	<5	3	24	9	64	10.7	<0.01	2,121
56	60	<0.005	<0.5	<2	57	11	3	22	9	66	10.9	<0.01	1,941
60	64	<0.005	<0.5	4	61	5	3	50	8	72	10.8	0.06	1,773
64	68	<0.005	<0.5	<2	83	6	3	15	9	79	10.8	<0.01	2,031
68	72	<0.005	<0.5	9	53	<5	4	270	17	91	10.4	<0.01	2,070
72	76	<0.005	<0.5	6	76	8	3	48	10	87	11.6	<0.01	2,583
76	80	<0.005	<0.5	6	59	<5	3	31	8	89	11.3	<0.01	2,654
76	80	<0.005	<0.5	5	51	7	3	23	10	79	10.1	<0.01	2,308
80	84	<0.005	<0.5	7	49	<5	3	31	10	66	8.8	<0.01	1,720
84	88	<0.005	<0.5	<2	38	8	4	20	9	78	10.9	<0.01	2,192
88	92	<0.005	<0.5	5	33	7	4	10	10	71	10.7	<0.01	2,179
92	96	<0.005	<0.5	<2	44	9	4	19	12	89	12.2	<0.01	2,564
96	100	<0.005	<0.5	<2	87	<5	3	11	10	63	9.5	<0.01	2,395
100	104	<0.005	<0.5	<2	95	<5	3	12	9	80	8.8	<0.01	1,804
104	108	<0.005	<0.5	<2	152	<5	3	7	9	74	8.7	<0.01	1,898
108	112	<0.005	<0.5	<2	151	<5	3	6	9	76	9.1	<0.01	2,105
112	116	<0.005	<0.5	<2	211	6	3	8	9	74	8.5	<0.01	1,948
116	120	<0.005	<0.5	<2	234	<5	2	5	10	81	8.2	<0.01	2,027
120	124	<0.005	<0.5	2	165	10	3	8	9	81	8.3	0.02	2,062
124	128	<0.005	<0.5	<2	156	<5	2	5	9	64	7.3	<0.01	1,974
128	132	<0.005	0.7	<2	196	<5	2	3	7	62	7.3	<0.01	2,112
132	136	<0.005	<0.5	<2	206	<5	2	3	8	72	7.8	<0.01	2,143
136	140	<0.005	<0.5	<2	213	6	2	9	8	66	8.5	0.01	2,337
140	144	<0.005	<0.5	<2	339	7	3	7	8	74	8.8	0.04	2,392
144	148	<0.005	<0.5	<2	94	8	3	14	12	74	9.4	<0.01	2,003
148	152	<0.005	<0.5	<2	40	<5	4	13	10	67	10.5	<0.01	1,902
152	156	<0.005	<0.5	6	46	9	4	13	8	67	10.7	<0.01	1,883
152	156	<0.005	<0.5	6	39	8	4	16	10	69	10.9	<0.01	1,932

From	To	Au	Ag	As	Ba	Bi	Cd	Cu	Pb	Zn	Fe	S	Mn
(m)	(m)	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
	Detect	0.005	0.5	2	5	5	1	1	2	2	0.01	0.01	2
156	160	<0.005	<0.5	8	48	10	4	41	9	71	10.7	0.07	1,781
160	164	0.005	0.8	7	88	<5	2	103	6	71	8.7	0.02	1,744
164	168	<0.005	0.8	7	80	<5	2	97	10	71	7.7	0.01	1,683
168	172	<0.005	1	11	87	<5	2	111	12	68	7.9	0.02	1,711
172	176	<0.005	0.9	10	127	5	2	98	5	75	7.7	0.02	1,606
176	180	<0.005	0.7	7	93	<5	2	88	6	78	8.1	0.04	1,603
180	184	<0.005	0.7	3	104	<5	3	96	8	84	8.6	0.05	1,849
184	188	<0.005	0.8	4	1,184	<5	2	18	11	52	6.5	0.01	3,593
188	192	<0.005	0.6	5	1,629	<5	2	36	15	78	6.8	0.02	5,417
192	196	<0.005	1.6	<2	729	11	3	201	48	128	8.7	0.08	11,932
196	200	<0.005	2.1	3	1,024	<5	3	71	29	107	9.5	0.17	16,928
200	204	<0.005	1	<2	699	<5	4	53	18	100	8.8	0.11	6,609
204	208	<0.005	<0.5	<2	725	<5	5	59	20	130	11.1	0.16	3,139
208	212	<0.005	<0.5	<2	917	<5	5	52	18	126	10.5	0.12	2,181
212	216	<0.005	<0.5	<2	852	<5	5	58	18	124	10.6	0.14	2,354
216	220	<0.005	1.1	<2	1,403	8	4	56	24	116	9.1	0.1	6,892
220	224	<0.005	0.8	4	734	<5	3	223	20	105	10.0	0.18	5,824
224	228	<0.005	<0.5	<2	263	13	4	232	12	104	11.7	0.23	2,297
228	232	<0.005	<0.5	<2	230	9	4	259	10	111	11.3	0.15	1,872
228	232	<0.005	<0.5	<2	277	6	4	219	9	116	12.0	0.16	1,947
232	236	0.034	<0.5	2	238	<5	4	167	12	104	10.6	0.23	2,020
236	240	<0.005	0.5	<2	374	6	3	132	4	84	9.0	0.03	1,826
240	244	<0.005	<0.5	<2	266	<5	2	167	10	73	8.2	0.03	1,605
244	248	<0.005	0.8	3	113	<5	2	172	16	78	8.0	0.05	1,691
248	252	<0.005	0.7	<2	40	5	3	280	8	95	8.9	0.19	2,000
252	256	0.007	0.6	15	30	<5	3	1,510	12	144	9.3	0.38	2,050
256	260	0.022	<0.5	4	109	13	2	95	4	57	13.7	1.49	2,234
260	264	0.014	<0.5	4	193	14	2	77	4	51	14.5	1.28	1,745
264	268	0.013	1.1	4	49	9	2	75	4	28	13.0	2.68	1,748
268	272	0.015	1.1	17	142	9	2	140	13	50	10.9	3.77	1,692
272	276	0.01	0.6	20	345	<5	3	110	15	89	9.9	2.23	1,923
276	280	<0.005	<0.5	61	374	<5	4	55	14	117	8.3	0.14	1,630
280	284	0.019	<0.5	8	161	7	1	35	2	47	11.1	1.1	2,605
284	288	0.089	1	6	75	7	2	81	4	34	13.8	3.76	1,918
288	292	0.007	1.1	39	474	7	2	126	10	55	10.0	3.42	3,462
292	296	<0.005	0.9	40	301	6	<1	42	15	59	4.9	0.18	4,258
296	300	<0.005	<0.5	57	707	<5	2	54	12	97	6.9	0.06	2,278
300	304	<0.005	0.7	5	287	<5	2	67	5	83	6.3	0.03	2,233
304	308	0.007	<0.5	3	476	<5	2	41	4	84	6.5	0.1	1,719
304	308	0.008	0.7	3	438	<5	2	42	5	83	6.4	0.11	1,759
308	312	0.014	1.1	<2	731	<5	2	57	5	72	5.8	0.05	2,167
312	316	<0.005	1.5	3	159	<5	<1	16	<2	40	2.5	0.03	2,855
316	321	<0.005	0.9	<2	40	<5	<1	22	<2	42	3.0	0.03	2,585

Note: Altered mafic zone in green, pyritic sediments in blue. Trace chalcopyrite recognised in chips at 253m.

JORC Code, 2012 Edition – Table 1 report for ASX Release 29 January 2016

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary																																																																								
<i>Sampling techniques</i>	<ul style="list-style-type: none"> • Drilling at Vulcan West in 2015 was sampled at 1m intervals. • A 1-2kg sample of each metre interval was obtained from cone splitter and collected in a calico bag, and remainder of each 1 metre sample (30-45Kg) was collected into a green polythene bag. 																																																																								
<i>Drilling techniques</i>	<ul style="list-style-type: none"> • Drilling was by Reverse Circulation (RC) technique with face sampling hammer of nominal 140 mm hole diameter, with booster and auxilliary air (2400cfm at 850 psi) to maximize recovery and minimize wet samples. 																																																																								
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> • Sample recoveries were not recorded, but recoveries were assessed visually by height of samples in green plastic polythene bags. • Recoveries were deemed to be excellent. 																																																																								
<i>Logging</i>	<ul style="list-style-type: none"> • Geological logging is qualitative and quantitative. • Individual 1m samples were each logged for lithology, mineralisation, grainsize, texture, oxidation, weathering, colour and by visual observation of a handful of washed drill cuttings (~2mm - 12mm in size) collected by sieve from individual 1m drill samples (~30kg -45kg) collected in green polythene bags from drill rig cyclone. • After logging, washed reference drill chips of every 1m interval were retained in a plastic chip tray. • Entire RC hole VWRC001 (EoH 321m) was lithologically logged. 																																																																								
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> • 1 metre samples were collected from cone splitter into calico bags. • 84 x 4 metre composite samples were collected from entire hole using a PVC spear into each 1 metre green polythene bag and were dispatched to laboratory for sample preparation and assay. • 36 x 1 metre samples were also collected and dispatched to laboratory for sample preparation and assay. 																																																																								
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> • 4 metre composite samples and a selection of 1 metre samples were transported to the Minanalytical Laboratory by enterprise personnel. • Sample preparation by Method SP 1000 (<1kg sort, dry and pulverize) • Assaying by Method MA4010. (34 element ICP-OES Package) • <i>Elements and Detection Limits (ppm & %)</i> <table border="1" style="margin-left: 20px; border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Ag</td><td style="padding: 2px;">0.5ppm</td><td style="padding: 2px;">Co</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Mo</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Sr</td><td style="padding: 2px;">1ppm</td></tr> <tr> <td style="padding: 2px;">Al</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">Cr</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Na</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">Te</td><td style="padding: 2px;">2ppm</td></tr> <tr> <td style="padding: 2px;">As</td><td style="padding: 2px;">2ppm</td><td style="padding: 2px;">Cu</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Ni</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Ti</td><td style="padding: 2px;">0.01%</td></tr> <tr> <td style="padding: 2px;">Ba</td><td style="padding: 2px;">5ppm</td><td style="padding: 2px;">Fe</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">P</td><td style="padding: 2px;">20ppm</td><td style="padding: 2px;">Tl</td><td style="padding: 2px;">10ppm</td></tr> <tr> <td style="padding: 2px;">Be</td><td style="padding: 2px;">0.5ppm</td><td style="padding: 2px;">K</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">Pb</td><td style="padding: 2px;">2ppm</td><td style="padding: 2px;">V</td><td style="padding: 2px;">2ppm</td></tr> <tr> <td style="padding: 2px;">Bi</td><td style="padding: 2px;">5ppm</td><td style="padding: 2px;">La</td><td style="padding: 2px;">20ppm</td><td style="padding: 2px;">S</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">W</td><td style="padding: 2px;">1ppm</td></tr> <tr> <td style="padding: 2px;">Ca</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">Li</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Sb</td><td style="padding: 2px;">2ppm</td><td style="padding: 2px;">Zn</td><td style="padding: 2px;">2ppm</td></tr> <tr> <td style="padding: 2px;">Cd</td><td style="padding: 2px;">1ppm</td><td style="padding: 2px;">Mg</td><td style="padding: 2px;">0.01%</td><td style="padding: 2px;">Sc</td><td style="padding: 2px;">1ppm</td><td></td><td></td></tr> <tr> <td style="padding: 2px;">Ce</td><td style="padding: 2px;">20ppm</td><td style="padding: 2px;">Mn</td><td style="padding: 2px;">2ppm</td><td style="padding: 2px;">Sn</td><td style="padding: 2px;">5ppm</td><td></td><td></td></tr> </table> • Gold by Method FA50AAS. (50gm fire assay, AAS finish) detection limit 0.005ppm. • For scout drilling of this nature, the Company relies on laboratory blanks and duplicates for QA/QC. 	Ag	0.5ppm	Co	1ppm	Mo	1ppm	Sr	1ppm	Al	0.01%	Cr	1ppm	Na	0.01%	Te	2ppm	As	2ppm	Cu	1ppm	Ni	1ppm	Ti	0.01%	Ba	5ppm	Fe	0.01%	P	20ppm	Tl	10ppm	Be	0.5ppm	K	0.01%	Pb	2ppm	V	2ppm	Bi	5ppm	La	20ppm	S	0.01%	W	1ppm	Ca	0.01%	Li	1ppm	Sb	2ppm	Zn	2ppm	Cd	1ppm	Mg	0.01%	Sc	1ppm			Ce	20ppm	Mn	2ppm	Sn	5ppm		
Ag	0.5ppm	Co	1ppm	Mo	1ppm	Sr	1ppm																																																																		
Al	0.01%	Cr	1ppm	Na	0.01%	Te	2ppm																																																																		
As	2ppm	Cu	1ppm	Ni	1ppm	Ti	0.01%																																																																		
Ba	5ppm	Fe	0.01%	P	20ppm	Tl	10ppm																																																																		
Be	0.5ppm	K	0.01%	Pb	2ppm	V	2ppm																																																																		
Bi	5ppm	La	20ppm	S	0.01%	W	1ppm																																																																		
Ca	0.01%	Li	1ppm	Sb	2ppm	Zn	2ppm																																																																		
Cd	1ppm	Mg	0.01%	Sc	1ppm																																																																				
Ce	20ppm	Mn	2ppm	Sn	5ppm																																																																				
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> • Primary sample and lithological data was collected using a set of standard Excel templates and re-entered into laptop computers. • No external laboratory checks have yet been carried out. • Assaying of 1m samples will provide a check on 4m sample assays. 																																																																								

<i>Location of data points</i>	<ul style="list-style-type: none"> • Drill site surveyed by a modern hand held GPS unit with an accuracy of 5m which is sufficient accuracy for the purpose of compiling and interpreting the results of scout RC drill hole. • Topographic control is by NASA Shuttle Radar Topography Mission (SRTM). The grid system is MGA GDA94 Zone 50.
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> • No additional sample compositing was used apart from the standard 4m composite sampling.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • RC drill hole orientation was determined from modelling of MLEM data, and was planned to intersect EM feature orthogonally.
<i>Sample security</i>	<ul style="list-style-type: none"> • Clear mark up and secure packaging to ensure safe arrival and accurate handling at assay facility. Samples delivered to laboratory by Enterprise personnel.
<i>Audits or reviews</i>	<ul style="list-style-type: none"> • Logging of chips at site was regularly reviewed by 2nd geologist.

JORC Code, 2012 Edition – Table 1 report for ASX Release 29 January 2016

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> • Vulcan West is wholly within Enterprise's 100% owned, granted Exploration Licence 52/2049. The tenement is on the Department of Parks & Wildlife (DPaW) owned Doolgunna Pastoral Lease. • The tenement sits within the Yugunga-Nya Native Title Claim. • E52/2049 expires on 26 October 2018. The tenement is in good standing and there are no existing impediments to exploration or renewal at expiry date.
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> • No prior exploration by other parties at Vulcan West.
<i>Geology</i>	<ul style="list-style-type: none"> • E52/2049 covers an interval of the Goodin Fault, a major reactivated reverse fault that separates siliciclastic and mafic units of the Yerrida Group in the south, from mafic Narracoota Formation volcanics of the Bryah Group to the north. • The principal exploration targets are Volcanic Hosted Massive Sulphides (VHMS) and sediment hosted massive sulphide base metal (copper/zinc) deposits.
<i>Drill hole information</i>	<ul style="list-style-type: none"> • No prior drilling. Refer Table 1 of this Report for VWRC001 collar information.
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> • No data aggregation methods employed at this date.
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> • Not material, as from visual observation, no economic mineralisation intersected to date.
<i>Diagrams</i>	<ul style="list-style-type: none"> • Appropriate map and cross section will be prepared when all assays are available.
<i>Balanced reporting</i>	<ul style="list-style-type: none"> • The accompanying document is considered to be a balanced report with a suitable cautionary Note.

<i>Other substantive exploration data</i>	<ul style="list-style-type: none">• Details of Moving Loop Electromagnetic Survey which defined drill target are: Loop size: 200m x 200m Line spacing: 400m with selective 200m infill lines Station Spacing: 100m (50% overlap most moves) Frequency: 0.5 Hz minimum Transmitter: VTX-100 Max Current/Voltage: 100 Amp/ 500 Volts Receiver: EMIT SMARTem24 Sensor: EMIT Smart Fluxgate or Fluxgate Line Lengths: ~4.8km
<i>Further work</i>	<ul style="list-style-type: none">• Assaying of selected 1 metre samples.• Down Hole Electromagnetic Surveying (DHEM) by contractors.• Modelling and interpretation of DHEM data by consultants.• Follow up RC and/or diamond core drilling if appropriate.