



Pure Minerals Limited

09 February 2018

ASX Announcement

HIGH GRADE DRILL RESULTS AT STEVEN RIDGE AND ISLE PROSPECTS

- **Drilling indicates presence of high grade mineralisation exceeding 30% Mn within zones of thick, continuous mineralisation**
- **Reverse circulation drilling results include:**
 - **BH0068: 3m @ 31.79% Mn within 9m @ 17.93% Mn**
 - **BH0079: 4m @ 33.40% Mn within 12m @ 18.42% Mn**
- **Mineralisation remains open along strike and at up/down dip**

Pure Minerals Limited (ASX: PM1) (“Pure Minerals”, “the Company”) is pleased to announce additional drill results from its first phase of drilling at its 100%-owned Battery Hub manganese project, located in Western Australia’s Gascoyne region. The results are derived from 13 RC drilling holes located at the Steven Ridge and Isle Prospects, located at the eastern half of tenement E09/2217 and immediately west of the Pools Prospect, for which drilling results were published on 24 January 2018 (Figure 1, below).

Pure Minerals has confirmed in drilling that mineralisation extends a further 8.6 km to the northwest of the Pools and Julia prospects, where manganese mineralisation was identified in drilling over a 8.3km strike length. Key statistical highlights of the drilling include:

- Every drill hole except one encountered manganese mineralisation. 15 significant primary intercepts were observed from 12 mineralised holes with a median thickness of manganese mineralisation of 20.0m.
- Holes represent deepest holes to date, suggesting high grades extend below the zone weathering. Mineralisation was identified to a median maximum depth of 40.0m. Mineralisation remains open down-dip, up-dip and along strike.
- 7 of the intercepts included a medium grade core averaging 6.1m thickness with a weighted average grade of 15.32% Mn.
- Drilling at both Isle and Steven Ridge identified high grades exceeding 30% Mn.

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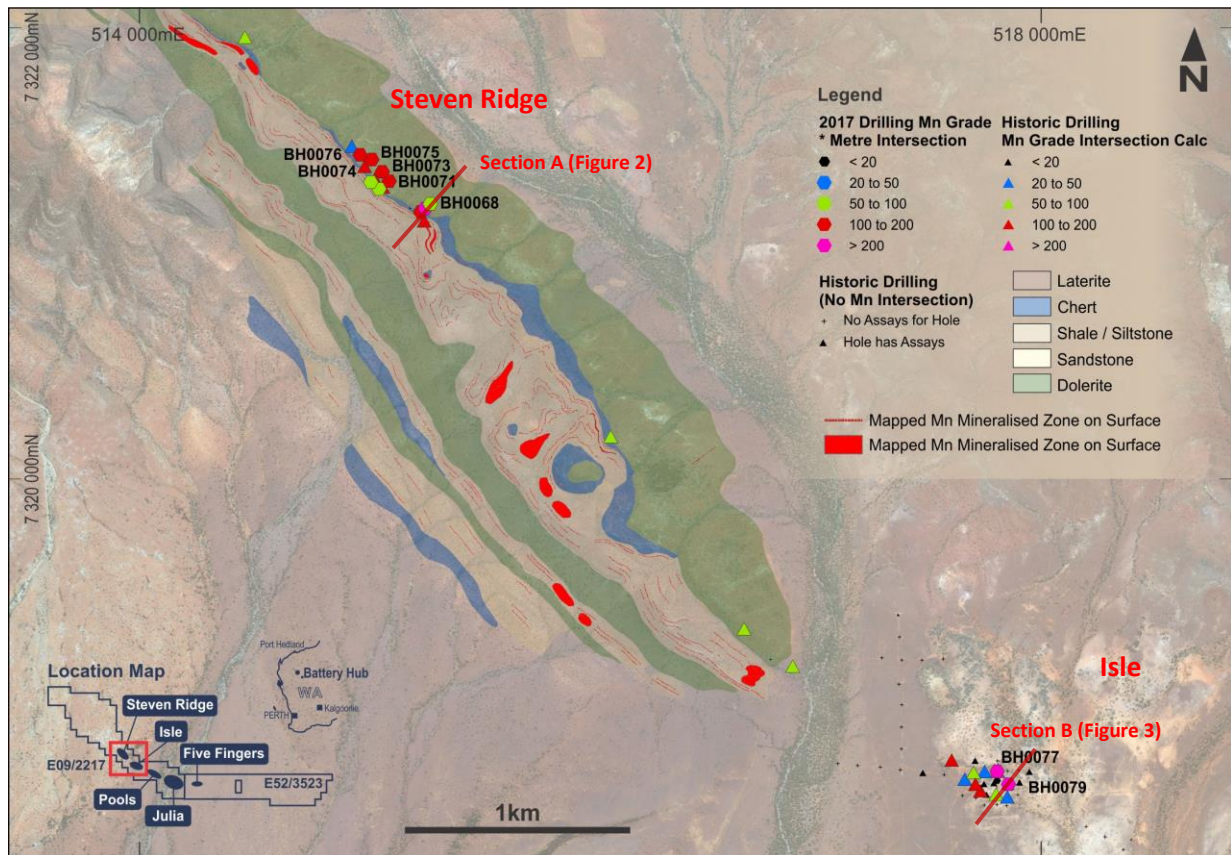


Figure 1: Drill Hole Collar Map of the Isle and Steve Ridge prospects, including mapped geology and outcropping manganese mineralisation

The vast majority of mineralisation identified at Steven Ridge is hosted as a strataform layer within an extensive siltstone formation extending the entire >80km strike length at Battery Hub. The layer typically dips approximately 30° to the NE and represents an extension of a similar style of mineralisation identified at the Pools prospect. Isle is hosted in lateritic gravels believed to be derived from strataform mineralisation.

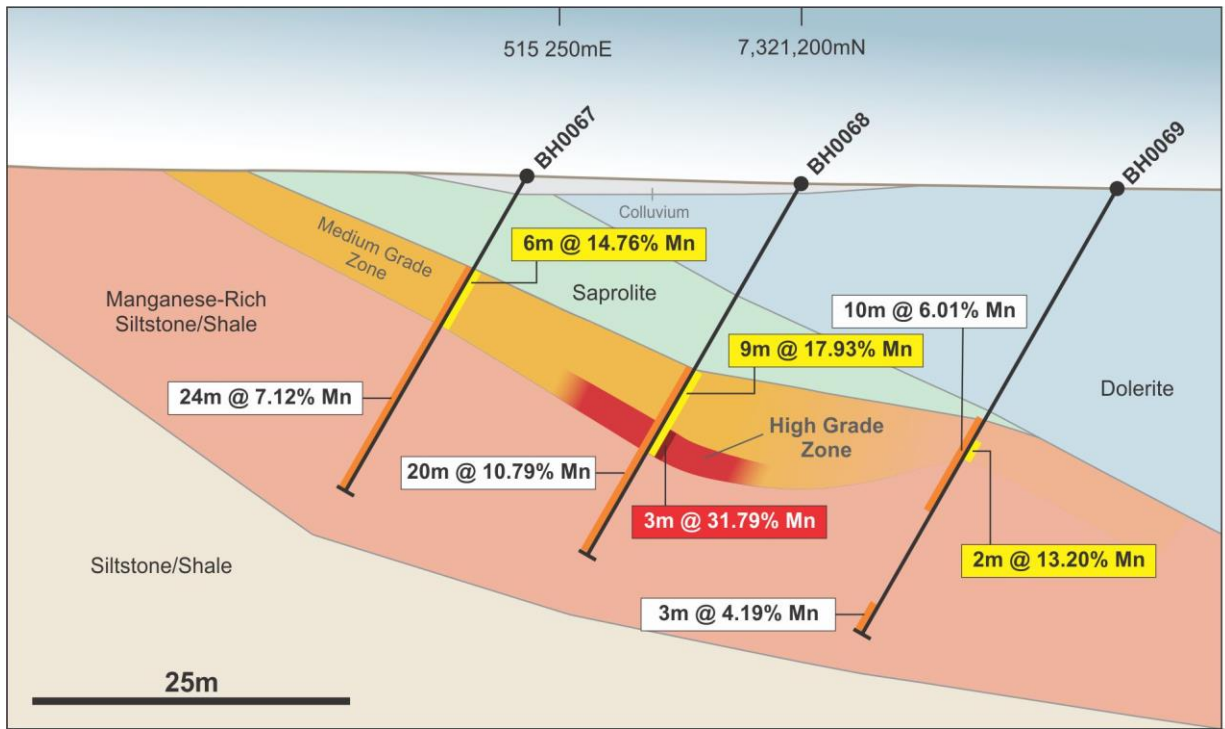


Figure 2: Section A. Cross section of Steven Ridge prospect.

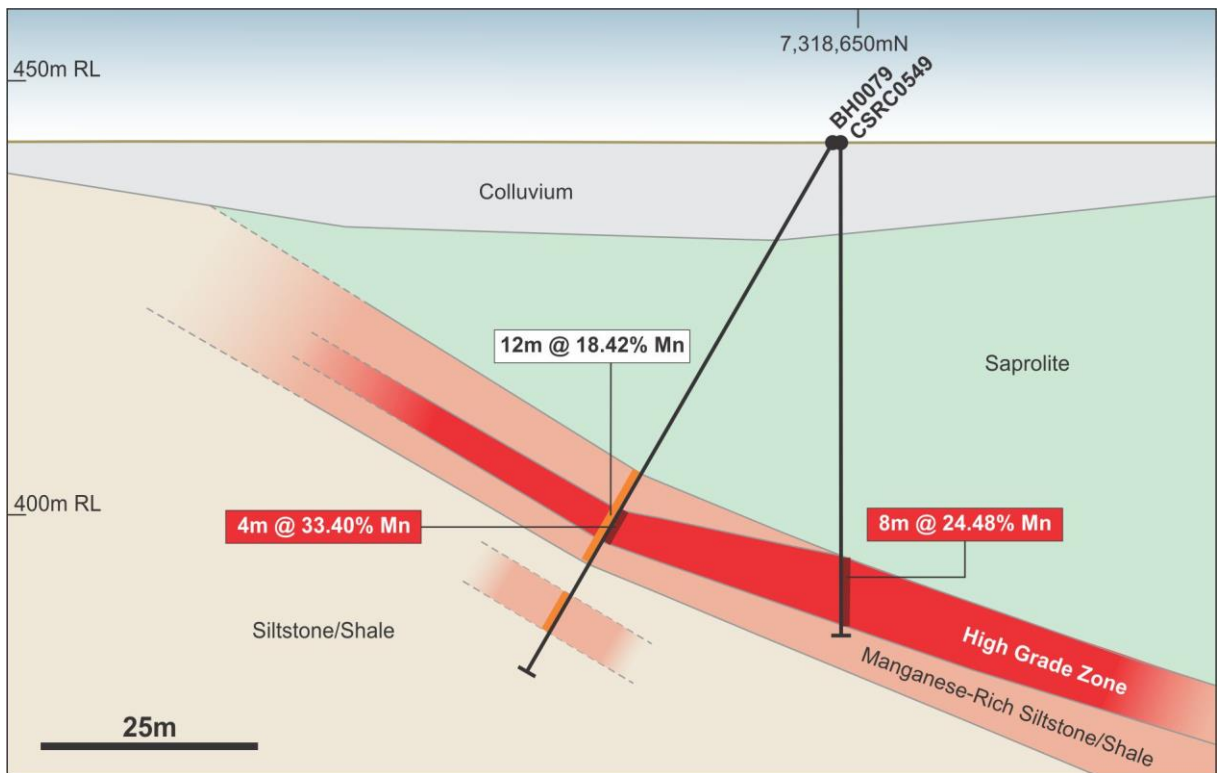


Figure 3: Section B. Cross section of Isle prospect.

About the First Phase Drilling Program and Future Plans

The 79 hole, 2,880m reverse circulation drilling program, completed in early December 2017, tested for shallow (less than 60m depth) manganese mineralisation with bulk tonnage potential at the Julia, Pools, Isle and Steven Ridge prospects, all located within tenement E09/2217. An additional objective was to confirm historic drilling for which no physical records remain.

More than 1,500 samples, comprising 413 composite samples and 1,125 one-metre split samples, were submitted to ALS Global laboratory in Wangara, Western Australia, for assay testwork in December 2017.

Pure Minerals will commence preliminary metallurgical test work designed to determine the propensity for the various forms of mineralisation to be beneficiated or converted into a downstream product such as Electrolytic Manganese Dioxide.

For and on behalf of the Board,

Mauro Piccini
Company Secretary

Competent Persons Statement

The information in this report that relates to Exploration Results complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and has been compiled and assessed under the supervision of Mr Kell Nielsen BSc (Geol.), MSc (Mineral Econ.), a consultant to Pure Minerals Limited and director of Mannika Resources Group Pty Ltd. Mr Nielsen is a Member of the Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Nielsen consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears. The Exploration Results are based on standard industry practises for drilling, logging, sampling, assay methods including quality assurance and quality control measures as detailed in Appendix B.

Appendix A: Drill Hole Data

Hole_ID	Location Co-ordinates			Total Depth m	Dip deg	Azimuth deg	Depth	Depth	Interval m	Mn %	MnO %	Al2O3 %	Fe2O3 %	SiO2 %	P2O5 %		
	East	North	RL				From m	To m									
Steven Ridge Prospect																	
BH0067	515,247	7,321,183	470.26	34.00	-60°	225°	10.0	34.0	24.0	7.12	9.20	6.47	25.77	47.59	0.22		
<i>incl.</i>							10.0	16.0	6.0	14.76	19.06	5.57	28.15	33.10	0.17		
BH0068	515,268	7,321,198	469.42	40.00	-60°	225°	20.0	40.0	20.0	10.79	13.93	5.70	28.26	39.95	0.18		
<i>incl.</i>							20.0	29.0	9.0	17.93	23.14	4.48	34.89	23.49	0.13		
<i>incl.</i>							26.0	29.0	3.0	31.79	41.04	3.51	19.42	18.38	0.11		
BH0069	515,290	7,321,218	468.99	48.00	-60°	225°	25.0	35.0	10.0	6.01	7.76	6.35	31.12	42.68	0.26		
<i>incl.</i>							27.0	29.0	2.0	13.20	17.04	5.68	33.79	29.48	0.22		
<i>and</i>							45.0	48.0	3.0	4.19	5.41	6.64	24.45	50.95	0.26		
BH0070	515,108	7,321,319	480.61	46.00	-60°	225°	17.0	46.0	29.0	4.88	6.29	6.20	26.46	47.07	0.27		
<i>incl.</i>							17.0	20.0	3.0	5.94	7.67	6.02	33.63	39.57	0.23		
<i>and</i>							32.0	46.0	14.0	5.96	7.69	6.28	24.89	47.22	0.25		
BH0071	515,063	7,321,285	481.36	28.00	-60°	225°	3.0	28.0	25.0	4.64	5.99	6.54	26.06	48.35	0.25		
<i>incl.</i>							3.0	8.0	5.0	6.42	8.29	6.72	31.37	36.17	0.20		
<i>and</i>							10.0	15.0	5.0	6.07	7.83	5.82	24.04	44.58	0.26		
<i>and</i>							20.0	25.0	5.0	5.42	7.00	6.76	24.07	52.44	0.26		
BH0072	515,027	7,321,315	482.33	22.00	-60°	225°	2.0	15.0	13.0	5.32	6.86	6.56	29.39	43.23	0.20		
<i>incl.</i>							2.0	7.0	5.0	6.77	8.74	7.48	35.43	34.72	0.17		
BH0073	515,077	7,321,361	480.79	46.00	-60°	225°	21.0	46.0	25.0	6.94	8.95	6.38	28.98	42.50	0.26		
<i>incl.</i>							21.0	38.0	17.0	7.68	9.92	6.25	29.03	41.28	0.25		
<i>and</i>							43.0	46.0	3.0	9.51	12.28	6.14	27.88	35.81	0.22		
BH0074	514,989	7,321,368	480.78	28.00	-60°	225°	2.0	28.0	26.0	5.31	6.85	6.56	26.15	47.73	0.23		
<i>incl.</i>							3.0	9.0	6.0	8.50	10.97	6.42	30.61	35.94	0.19		
BH0075	515,031	7,321,415	478.53	46.00	-60°	225°	22.0	25.0	3.0	7.36	9.50	6.68	37.56	34.26	0.16		
<i>and</i>							30.0	46.0	16.0	6.89	8.90	6.34	26.51	45.65	0.26		
BH0076	514,979	7,321,437	479.07	40.00	-60°	225°	11.0	40.0	29.0	6.42	8.28	6.35	26.94	45.46	0.24		
<i>incl.</i>							27.0	30.0	3.0	13.07	16.87	5.68	25.13	38.08	0.26		
Isle Prospect																	
BH0077	517,805	7,318,704	442.94	76.00	-60°	180°	30.0	76.0	46.0	5.23	6.76	14.79	46.48	18.09	0.19		
<i>incl.</i>							47.0	52.0	5.0	10.47	13.52	13.91	39.14	16.85	0.17		
<i>and</i>							70.0	76.0	6.0	11.61	14.99	14.20	39.42	16.16	0.11		
BH0078	517,805	7,318,663	442.95	70.00	-60°	180°	<i>No significant Intercept</i>										
BH0079	517,855	7,318,647	442.75	70.00	-60°	180°	44.0	56.0	12.0	18.42	23.78	10.05	41.10	9.04	0.11		
<i>incl.</i>							49.0	53.0	4.0	33.40	43.11	7.51	25.27	4.02	0.09		
<i>and</i>							60.0	65.0	5.0	3.77	4.87	12.26	58.92	15.02	0.10		

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JORC Code, 2012 Edition – Table 1 report template

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i> <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> <i>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i> 	<p>Drilling was conducted using Reverse Circulation (RC) Drilling utilising a face sampling hammer. Samples were collected over one metre intervals as measured by the progress of the drill pipe in comparison with the mast. Samples were split on the rig into a smaller split sample contained within a sealed bag and a larger bulk sample that was either stored in a plastic bag or bucketed onto the ground using a rotary cone splitter attached to the rig</p> <p>Sampling equipment was cleaned at regular intervals and the end of each rod to maintain clean and representative samples.</p> <p>No tools were used</p> <p>Each metre was geological logged and where manganese was logged within the hole, the one metre split samples were collected and sent for analysis. From the remaining samples parts of the hole where one metre splits were not collected, smaller samples were collected from up to 5 individual metres of the bulk samples using a scoop and composited to form a new sample.</p> <p>Routine QAQC samples were inserted in the RC sample strings at the rate of 4 samples for every 100, comprising Mn standards (CRM's or Certified Reference Materials). RC field duplicate samples were taken at a rate of one every fifty samples.</p> <p>In regard to drilling completed prior to Pure Minerals involvement in the project, no information regarding the practices and quality of sampling, assaying and drilling completed by the previous operator of the project has yet to be verified or assessed by Pure Minerals.</p>
Drilling techniques	<ul style="list-style-type: none"> <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type,</i> 	<p>Drilling was completed by Reverse Circulation (RC) drilling using a face sampling hammer bit.</p> <p>Drilling was conducted by a modern truck mounted rig (Schramm 660WS) utilising a maximum 2,250cfm at 1000psi of onboard</p>

Criteria	JORC Code explanation	Commentary
	<i>whether core is oriented and if so, by what method, etc).</i>	<p>air capacity that was increased and boosted when required using a Sullair 1,350cfm 350psi / 1,150cfm 500psi auxiliary compressor and a Hurricane 1000psi Booster</p> <p>In regards to drilling completed prior to Pure Minerals involvement in the project, no information regarding the practices and quality of sampling, assaying and drilling completed by the previous operator of the project has yet to be verified or assessed by Pure Minerals.</p>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i> 	<p>Drill samples were logged for poor recovery and moisture</p> <p>Water injection was used as required to maximise recovery and maintain sample integrity</p> <p>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred has not been assessed at this stage of the project.</p>
<i>Logging</i>	<ul style="list-style-type: none"> <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i> 	<p>All RC chips were geologically logged. Including, lithology, veining, oxidation and weathering are recorded in the geology table of the drill hole database.</p> <p>RC logging is qualitative and descriptive in nature, the geologists collected chip trays and these were photographed at the completion of the hole</p>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> 	<p>No drill core collected, not applicable</p> <p>One Metre RC samples were sub-sampled using a rig mounted cone splitter to produce original split samples of approximately 3kg weight, a standard industry practice. Composite samples using a scoop of up to 5m were taken from parts of the holes where one metre split samples were not submitted for assay</p> <p>The splitter was routinely cleaned at the end of each drill rod (6m) or as needed if damp material clung to the splitter.</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled. 	<p>Duplicate samples were collected using a scoop from the RC bulk samples to assess the sampling precision</p> <p>Sample size assessment was not conducted, though the sampling method and size used was typical for this type of mineralisation</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	<p>RC samples were prepared and assayed at NATA accredited ALS Minerals laboratory in Perth.</p> <p>RC samples were weighed, dried, and pulverized in total to nominal 85% passing 75 micron (Method PUL23), then a portion was collected for analysis by fused disc XRF using lab method ME-XRF26s a Manganese ore speciality analysis</p> <p>No testing of the ore was completed by PM1 in the field</p> <p>In addition to the Company QAQC samples included within the batches, the laboratory includes its own CRM's, blanks and duplicates with every batch.</p>
Verification of sampling and assaying	<ul style="list-style-type: none"> The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data. 	<p>Drill assays were documented by external consultants to Pure Minerals from Mannika Resources Group Pty Ltd and Omni GeoX Pty Ltd on behalf of Pure Minerals</p> <p>Some historic holes were twinned in order to assess their suitability in defining a JORC compliant resource</p> <p>All assay data was received in electronic format from ALS, checked and verified by Pure Minerals and merged into a proprietary database.</p> <p>Assay results were reported as oxides, in the case of Mn, MnO was divided by 1.291 to obtain the compound value (Mn)</p>
Location of data points	<ul style="list-style-type: none"> Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. 	<p>All collars were located using a handheld GPS for easting and northing. An elevation was assigned to the collar using SRTM data obtained from Geoscience Australia</p> <p>All work has been conducted in UTM grid (MGA94 Zone 50).</p> <p>The accuracy of the collar locations is approximately +/- 5m</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> Quality and adequacy of topographic control. 	<p>The dip of the hole was set by the driller using a protractor attached to the drill mast, with the azimuth of the hole being set by the geologist utilising a compass. The holes are of yet to be surveyed downhole.</p> <p>The quality and adequacy of topographic control is not known.</p>
Data spacing and distribution	<ul style="list-style-type: none"> Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied. 	<p>Drilling has been based on varying section lines to gain an understanding of the requirements for a resource estimation</p> <p>Data spacing and distribution of the holes has yet to be determined if sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure.</p> <p>Sample compositing has been completed outside of the logged mineralisation; Where the composite samples are found to contain elevated levels of Mn, the one metre RC splits shall be collected for analysis</p>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. 	<p>Where possible drill lines are oriented approximately at right angles to the currently interpreted strike of known mineralisation.</p> <p>No bias is considered to have been introduced by the existing sampling orientation.</p>
Sample security	<ul style="list-style-type: none"> The measures taken to ensure sample security. 	<p>Samples were collected, secured and sent in closed polyweave sacks via either a registered transport company, or were hand delivered directly to the laboratory.</p>
Audits or reviews	<ul style="list-style-type: none"> The results of any audits or reviews of sampling techniques and data. 	<p>As this is part of a first pass programme for Pure Minerals, no audits or reviews have been conducted at this stage</p>

Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land	<ul style="list-style-type: none"> Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint 	<p>Results reported are from the Isle and Steve Ridge Prospects which are wholly located with E09/2217</p>

Criteria	JORC Code explanation	Commentary
<i>tenure status</i>	<p><i>ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></p> <ul style="list-style-type: none"> <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i> 	<p>The Battery Hub Project is comprised of two exploration licences E09/2217 and E52/3523 that are wholly owned by Pure Manganese Pty Ltd, a wholly owned subsidiary of Pure Minerals Limited with a total combined area of 724.43 km². There are no joint ventures or other agreements in place.</p> <p>Exploration licences 09/2217 and 52/3523 fall wholly within the Wajarri Yamatji (WC2004/010) Native Title Claimant (NTC) group. The Yamatji Marlpa Aboriginal Corporation (YMAC) is the Native Title Representative Body (NTRB) for the NTC..</p>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<p>The Battery Hub Project has had previous exploration completed by Aztec Mining Company, Rio Tinto Exploration, BHP and Aurora Minerals. The majority of exploration was completed by Aurora Minerals which included soil and rock chip assays and 509 holes of reverse circulation drilling.</p>
<i>Geology</i>	<ul style="list-style-type: none"> <i>Deposit type, geological setting and style of mineralisation.</i> 	<p>The primary exploration target at the Battery Hub Project is manganese mineralisation associated with specific stratigraphic units and laterites with other targeted minerals including graphite, copper, zinc and other base metals.</p> <p>Geological information is included in the attachment.</p>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <i>easting and northing of the drill hole collar</i> <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> <i>dip and azimuth of the hole</i> <i>down hole length and interception depth</i> <i>hole length.</i> <i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is</i> 	<p>All information is included in Appendix 1.</p>

Criteria	JORC Code explanation	Commentary
	<p><i>the case.</i></p>	
Data aggregation methods	<ul style="list-style-type: none"> <i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i> <i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i> <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<p>Weighted average techniques were used for the calculation of intersections</p> <p>Intersections were calculated using a low-grade cut-off or trigger value of 3% Mn with internal waste included to report a greater than 5% Mn intersection</p> <p>No metal equivalents have been used</p>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <i>These relationships are particularly important in the reporting of Exploration Results.</i> <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</i> 	<p>Drilling was inclined at -60 degrees to assess the ridge lines and the results may not represent a true thickness of the material.</p> <p>Due to this only the down hole length of the mineralisation and not the true width of the material has been reported</p>
Diagrams	<ul style="list-style-type: none"> <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i> 	<p>Maps and appropriate sections are included in this announcement.</p>
Balanced reporting	<ul style="list-style-type: none"> <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i> 	<p>All results are tabulated in Appendix 1 and shown on figures in this announcement.</p>
Other substantive exploration data	<ul style="list-style-type: none"> <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and</i> 	<p>Substantive historical data is summarised in previous announcements by Pure Minerals (and Aurora Minerals) and is being reviewed as part of the exploration of the Battery Hub Project. These include historical drilling results, an XTEM survey</p>

Criteria	JORC Code explanation	Commentary
	<i>method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	and preliminary metallurgical test results of samples
<i>Further work</i>	<ul style="list-style-type: none"> <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	As detailed in the Report.