Substantial maiden vanadium Resource further strengthens economic outlook for Montepuez graphite project

Result highlights potential to produce Vanadium Pentoxide as a by-product from the project's graphite tailings, generating an additional source of revenue

Highlights

- **Montepuez maiden vanadium Mineral Resource of 34.6Mt @ 0.25% for 86Kt of contained Vanadium Pentoxide (V_2O_5) comprising:**
    - **Elephant Deposit: Inferred Mineral Resource of 18.4Mt @ 0.24% V_2O_5**
    - **Buffalo Deposit: Inferred Mineral Resources of 16.2Mt @ 0.25% V_2O_5**
- **Graphite Mineral Resources at Buffalo stand unchanged at 42.6Mt, with a grade of 9.5% TGC at a 2.5% TGC cut-off** (see 18 October 2018 ASX announcement)
- **Graphite Mineral Resources at Elephant stand unchanged at 76.9Mt, with a grade of 7.3% TGC at a 2.5% TGC cut-off** (see 16 July 2018 ASX announcement)

Battery Minerals Limited (ASX: BAT) is pleased to report highly favourable results from preliminary metallurgical testwork aimed at assessing the potential for vanadium to be extracted from the tailings which will be produced at the Company's Montepuez Graphite Project in Mozambique.

This preliminary work has allowed Battery Minerals to classify the vanadium content of its graphite deposits at Montepuez as an Inferred Mineral Resource, providing the Company with the confidence to continue working to determine the economic potential of producing a Vanadium Pentoxide by-product from the project's plant tailings stream.

While a commercial study of the viability has not yet been completed, preliminary testwork indicates potential to beneficiate the tailings from Montepuez to produce a vanadium concentrate.

"The addition of a Vanadium Mineral Resource and the potential for a V_2O_5 by-product is highly promising given the current positive outlook for the vanadium market. There is strong current demand from traditional sectors of the market and positive signs for the energy storage sector," Battery Minerals Managing Director Jeremy Sinclair said.

"The Company will continue studies to understand how value from the vanadium might be extracted while remaining focussed on the primary objective of developing the graphite operations."

The reported V_2O_5 Mineral Resource is shown in Table 1 and a summary of the V_2O_5 concentrate is shown in Table 2.

Table 1 – Montepuez April 2019 Inferred V_2O_5 Mineral Resource Estimate (4.3% TGC Cut-off, above Ore Reserve pit design)

Deposit, type	Inferred Mineral Resource	
	Tonnage Mt	V_2O_5 %
Elephant, primary	18.4	0.24
Buffalo, primary	16.2	0.25
Total	**34.6**	**0.25**

All Mineral Resources figures reported in the table above represent estimates as at April 2019. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code – JORC 2012 Edition).

Table 2 – Vanadium Recovery and Concentrate Grade

Feed Grade for Test Work V_2O_5 %	Recovery %	Concentrate Grade V_2O_5 %
0.53	75.3	1.30

The updated Mineral Resource was estimated by independent geological consultants, Ashmore Advisory Pty Ltd (Ashmore).

Geology and Geological Interpretation

The Montepuez Graphite Project is located within the Xixano Complex and traverses the tectonic contacts between the Nairoto, Xixano and Montepuez Complexes. The Xixano Complex includes a variety of metasupracrustal rocks enveloping predominantly mafic igneous rocks and granulites that form the core of a regional north-northeast to south-southwest trending synform. Graphite-bearing mica schist and gneiss are found in the Xixano Complex. Locally, graphitic schists occur with dolerites, meta-sediments, amphibolites and minor intrusions of cross-cutting pegmatite veins. Graphite forms as a result of high-grade metamorphism of organic carbonaceous matter and vanadium bearing minerals such as roscoelite occur as secondary minerals.

Sampling and Sub-sampling Techniques

All mineralised samples were obtained from ¼ HQ3 core and sampled at 1m or 2m intervals or to geological contacts. Standard industry electric core saw was used to cut core with quarter core submitted for analysis. The entire RC hole was sampled and assayed at 1m intervals.

Samples were submitted to the ALS Minerals facility in Johannesburg, South Africa for sample preparation. Samples were weighed, assigned a unique bar code and logged into the ALS system. The entire sample was oven dried at 105˚ and crushed to -2mm. A 300g sub-sample of the crushed material was then pulverised to better than 85% passing -75µm using a LM5 pulveriser. The pulverised sample was split with multiple feed in a Jones riffle splitter until a 100-200g sub-sample was obtained.

Drilling Techniques

Triple tube diamond core drilling was used to provide the best core recovery possible. All holes were collared with HQ3 (63.5mm) core diameter. RC drilling was undertaken using a SHRAM RC rig with Metzke rig mounted cone splitter. A nominal 4.5 inch blade bit was used to achieve drilling penetration instead of a normal hammer bit.

Figure 1. Montepuez Graphite Project: Mine & Processing Site Layout.

Classification Criteria

The V_2O_5 Mineral Resource was classified as Inferred Mineral Resource based on data quality, sample spacing, and lode continuity and was based on 200m section spacing and 50m hole spacing on section.

Sample Analysis Method

Analysis includes Total Carbon Total Sulphur analysis by LECO, LOI TGA and ICP-AES. Loss on Ignition (LOI) has been determined between 105° and 1,050°C. Results are reported on a dry sample basis. The detection limits and precision for the Total Graphitic Carbon (TGC), Total Sulphur (TS) and V_2O_5 analysis are considered adequate for resource estimation. Trace element analysis was undertaken with ME-ICP85, Borate fusion, with ICPAES determination. QAQC protocols include the use of a coarse blank to monitor contamination during the preparation process, Certified Reference Materials (CRM) were inserted at a ratio of 1 in 20. Some duplicates were obtained from the core and show repeatable results.

Estimation Methodology

The block model was created and estimated in Surpac using Ordinary Kriging ("OK") grade interpolation. The mineralisation was constrained by geology outlines based on logged geology, with minor adjustments based on Total Graphitic Carbon ("TGC") grade. TGC, V_2O_5, S, LOI and TiO_2 grades were estimated into the mineralised blocks. Samples were composited to 1m based on an analysis of sample lengths inside the wireframes. After review of the project statistics, it was determined that high grade cuts were not necessary. Bulk densities ranging between 1.93t/m^3 and 2.86t/m^3 were assigned in the block model for waste, dependant on mineralisation and weathering.

Cut-off Grades

On the basis that V_2O_5 would be produced as a by-product of graphite production, the Inferred V_2O_5 Mineral Resource is reported above a 4.3% TGC cut-off grade, which is the Ore Reserve cut-off grade; within the Ore Reserve pit design for fresh material only.

Mining and Metallurgical Parameters and Methods

The Montepuez Graphite Project will be mined using open pit techniques.

Test work has been conducted to demonstrate that V_2O_5 can be extracted as a by-product of graphite processing at the Project. Tailings from the graphite plant would undergo a secondary process that involves further grinding to liberate vanadium minerals (predominantly roscoelite) and a two stage magnetic separation process with stage 1 removing high iron gangue and stage 2 recovering the vanadium to the magnetic fraction. The vanadium rich magnetic fraction recovered from the magnetic recovery circuit contains approximately 75% of the vanadium in the graphite plant tailings. This material, upgraded to approximately 1.3% V_2O_5, would form the feed to a standard roast and leach process to recover the vanadium content as a V_2O_5 product.

Market

The outlook for the vanadium market is encouragingly robust with strong current demand from traditional sectors of the market and a number of positive tailwinds in the energy storage sector.

The steel industry remains the overwhelming driver of demand and price, accounting for greater than 90% of global consumption. New standards implemented in China over the course of the last year will lead to increased vanadium usage. The Chinese government has implemented new standards for vanadium content in rebar that doubles previous levels and aligns with world-class best practice and sees demand forecast to grow at 6% annually in rebar alone. The demand for ever lighter and more efficient vehicles, aircraft and ocean going vessels will further drive demand for vanadium given that the inclusion of as little as 0.1% vanadium strengthens steel by up to 100% and can reduce weight by up to 30%.

Outside of traditional markets, the growing energy storage sector presents a significant and exciting opportunity. Vanadium Flow Batteries (VFB's) are a natural fit with renewable energy generation, providing large-scale storage in both grid and off-grid applications. VFB's have a number of attractive characteristics including:

- Discharge 100% with no "memory-effect"
- Long-life
- Non-flammable
- Infinitely scaleable and easily transported.

On the supply-side, global production of vanadium is decreasing because of tightened emission standards for mines in China, coupled with a ban on the import of vanadium slag to China and reduced supply from South Africa. Chinese supply has fallen to around 45,000 tonnes, some 5% below that in 2016. Roskill (independent minerals consultants) have commented that; "Prices increased considerably in 2017, but in 2018 the price rise intensified" and "We expect prices to remain high for some time-so it's the perfect time to finance and develop a project".

Table 3 – **Buffalo Deposit**

Buffalo April 2019 Inferred V_2O_5 Mineral Resource Estimate
(4.3% TGC Cut-off, within Ore Reserve pit design)

Type	Inferred Mineral Resource	
	Tonnage Mt	V_2O_5 %
Primary	16.2	0.25
Total	**16.2**	**0.25**

Buffalo Graphite Mineral Resource (2.5% TGC Cut-off)

Type	Measured Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.4	8.8	300
Primary	2.1	9.2	200
Total	**5.5**	**9.0**	**500**

Type	Indicated Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.2	7.7	20
Primary	16.3	10.4	1,690
Total	**16.5**	**10.3**	**1,710**

Type	Inferred Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.1	8.3	10
Primary	20.5	9.0	1,840
Total	**20.6**	**9.0**	**1,850**

Type	Total Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.7	8.7	330
Primary	38.9	9.6	3,720
Total	**42.6**	**9.5**	**4,050**

Table 4 – Elephant Deposit
Elephant April 2019 Inferred V_2O_5 Mineral Resource Estimate
(4.3% TGC Cut-off, within Ore Reserve pit design)

Type	Inferred Mineral Resource	
	Tonnage Mt	V_2O_5 %
Primary	18.4	0.24
Total	**18.4**	**0.24**

Elephant Graphite Mineral Resource (2.5% TGC Cut-off)

Type	Measured Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	2.7	8.3	90
Primary	2.7	8.3	110
Total	**5.3**	**8.3**	**440**

Type	Indicated Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.3	5.9	20
Primary	29.3	8.2	2,390
Total	**29.6**	**8.1**	**2,410**

Type	Inferred Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.6	6.2	220
Primary	38.4	6.6	2,540
Total	**42.0**	**6.6**	**2,760**

Type	Total Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	6.6	7.0	460
Primary	70.3	7.3	5,150
Total	**76.9**	**7.3**	**5,620**

1. TGC = total graphitic carbon

Background Information on Battery Minerals

Battery Minerals Limited ("Battery Minerals") is an ASX listed Australian company with two world-class graphite deposits in Mozambique, being Montepuez and Balama Central. Battery Minerals has produced high quality graphite flake concentrate at multiple laboratories. Subject to completing project financing, Battery Minerals intends to commence graphite flake concentrate production from its

Montepuez Graphite Project at a rate of 50,000tpa and an average flake concentrate grade of 96% TGC.

In December 2017 and January 2018, Battery Minerals signed four binding offtake agreements for up to 41,000tpa of graphite concentrate, representing over 80% of Montepuez's forecast annual production. In H1 FY2018, the Mozambican Government granted Battery Minerals a Mining Licence and its Environmental License for the Montepuez Graphite Project.

Subject to the completion of all necessary studies, permits, construction, financing arrangements, and infrastructure access, the Montepuez Graphite Project has the capacity to grow its production to over 100,000 tonnes per annum of graphite flake concentrate.

On 12 December 2018 Battery Minerals announced a feasibility study on its Balama Central project, which comprises a Stage 1 production rate of 58,000tpa (B1).

Combined with Montepuez and subject to continued positive economic, social and technical investigations, Balama Central provides the Company with the scope to self-fund growth from a 50,000tpa production-rate to at least 150,000tpa.

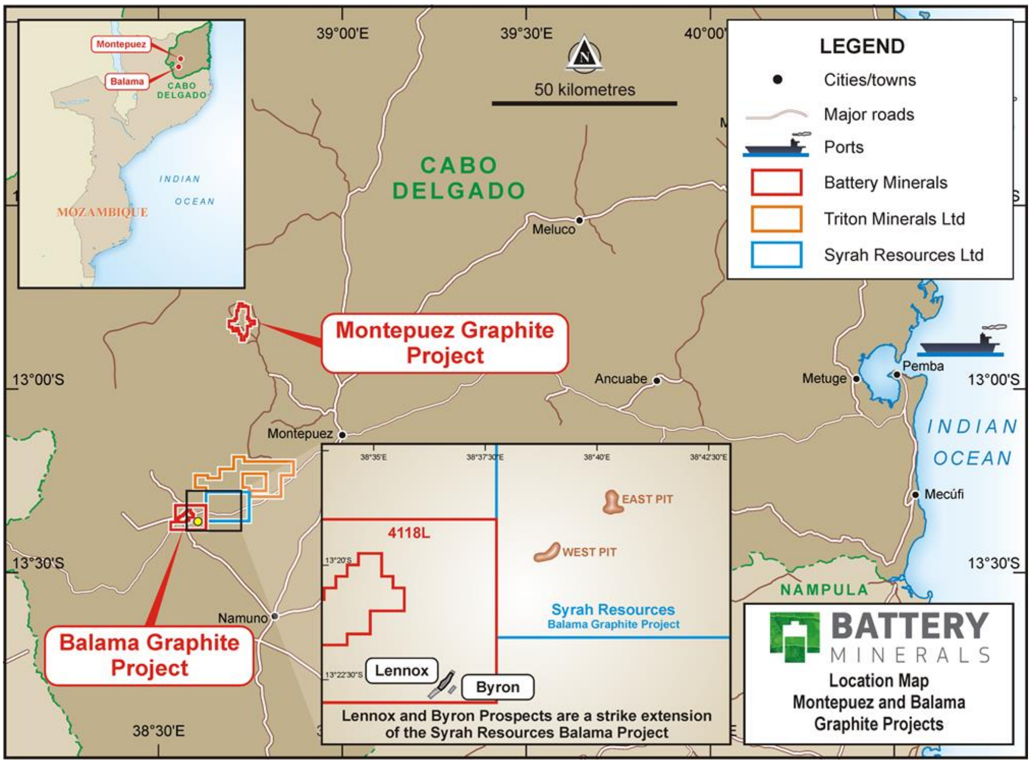

Figure 2: Montepuez Graphite Project location plan also showing location of the Battery Minerals Balama Graphite Project.

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Competent Person's Statement

The Statement of Estimates of Mineral Resources has been compiled by Mr. Shaun Searle who is a Member of the AIG. Mr. Searle has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code (2012). Mr Searle is a director of Ashmore Advisory Pty Ltd; an independent consultant to Battery Minerals Limited. Mr Searle consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Battery Minerals confirms that all the material assumptions underpinning the graphite Mineral Resources for its Montepuez graphite project in the 16 July and 18 October 2018 ASX announcements, on this project continue to apply at the date of release of this announcement and have not materially changed. Battery Minerals confirms that it is not aware of any new information or data that all material assumptions and technical parameters underpinning the estimates in the 16 July and 18 October 2018 announcements continue to apply and have not materially changed.

Important Notice

This ASX Announcement does not constitute an offer to acquire or sell or a solicitation of an offer to sell or purchase any securities in any jurisdiction. In particular, this ASX Announcement does not constitute an offer, solicitation or sale to any U.S. person or in the United States or any state or jurisdiction in which such an offer, tender offer, solicitation or sale would be unlawful. The securities referred to herein have not been and will not be registered under the United States Securities Act of 1933, as amended (the "Securities Act"), and neither such securities nor any interest or participation therein may not be offered, or sold, pledged or otherwise transferred, directly or indirectly, in the United States or to any U.S. person absent registration or an available exemption from, or a transaction not subject to, registration under the United States Securities Act of 1933.

Forward Looking Statements

Statements and material contained in this document, particularly those regarding possible or assumed future performance, resources or potential growth of Battery Minerals Limited, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Such forecasts and information are not a guarantee of future performance and involve unknown risk and uncertainties, as well as other factors, many of which are beyond the control of Battery Minerals Limited. Information in this presentation has already been reported to the ASX.
All references to future production and production & shipping targets and port access made in relation to Battery Minerals are subject to the completion of all necessary feasibility studies, permit applications, construction, financing arrangements, port access and execution of infrastructure-related agreements. Where such a reference is made, it should be read subject to this paragraph and in conjunction with further information about the Mineral Resources and Ore Reserves, as well as the relevant competent persons' statements.

Appendix 1: Elephant Grade Tonnage Tables and Curves

Table 1 April 2019 Elephant Inferred Vanadium Mineral Resource Estimate (4.3% TGC Cut-off, above Ore Reserve pit design)

Grade Range TGC%	Incremental Resource Tonnage t	Incremental Resource V_2O_5 %	Incremental Resource Cont. V_2O_5 t	Cut-off Grade TGC%	Cumulative Resource Tonnage t	Cumulative Resource V_2O_5 %	Cumulative Resource Contained V_2O_5 (t)
0.0 -> 0.5	2,940	0.11	3	0.0	20,394,923	0.23	46,727
0.5 -> 1.0	46,695	0.11	49	0.5	20,391,983	0.23	46,724
1.0 -> 1.5	113,333	0.10	114	1.0	20,345,288	0.23	46,675
1.5 -> 2.0	124,117	0.10	119	1.5	20,231,955	0.23	46,560
2.0 -> 2.5	121,314	0.08	98	2.0	20,107,838	0.23	46,442
2.5 -> 3.0	207,071	0.09	196	2.5	19,986,524	0.23	46,344
3.0 -> 3.5	391,113	0.10	393	3.0	19,779,453	0.23	46,148
3.5 -> 4.0	575,179	0.11	649	3.5	19,388,340	0.24	45,755
4.0 -> 4.5	777,195	0.12	903	4.0	18,813,161	0.24	45,106
				4.3	**18,433,329**	**0.24**	**44,677**
4.5 -> 5.0	960,657	0.11	1,048	4.5	18,035,966	0.25	44,204
5.0 -> 6.0	1,623,452	0.14	2,346	5.0	17,075,309	0.25	43,156
6.0 -> 7.0	1,883,891	0.17	3,148	6.0	15,451,857	0.26	40,810
7.0 -> 8.0	1,930,888	0.20	3,853	7.0	13,567,966	0.28	37,662
8.0 -> 9.0	2,001,106	0.24	4,708	8.0	11,637,078	0.29	33,809
9.0 -> 10.0	2,268,232	0.26	5,953	9.0	9,635,972	0.30	29,101
10.0 -> 11.0	2,229,634	0.29	6,397	10.0	7,367,740	0.31	23,148
11.0 -> 12.0	1,905,904	0.30	5,813	11.0	5,138,106	0.33	16,751
12.0 -> 13.0	1,405,538	0.32	4,485	12.0	3,232,202	0.34	10,938
13.0 -> 14.0	891,367	0.33	2,969	13.0	1,826,664	0.35	6,453
14.0 -> 15.0	476,134	0.35	1,660	14.0	935,297	0.37	3,484
15.0 -> 20.0	451,968	0.40	1,792	15.0	459,163	0.40	1,824
20.0 -> 99.0	7,195	0.45	32	20.0	7,195	0.45	32
Total	**20,394,923**	**0.23**	**46,727**				

Figure 1 Elephant Vanadium Resource Grade Tonnage Curve

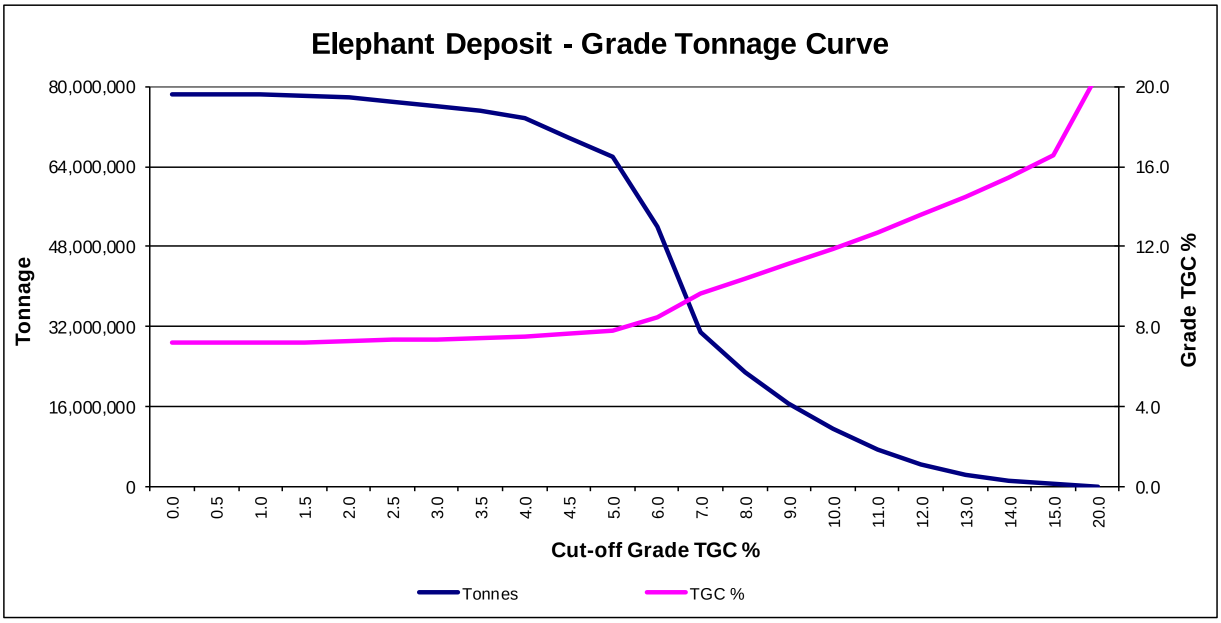


Table 2 April 2019 Total Elephant Graphite Mineral Resource Estimate (2.5% TGC Cut-off)

Type	Measured Mineral Resource		
	Tonnes Mt	TGC %	Cont. Graphite kt
Weathered	2.7	8.3	90
Primary	2.7	8.3	110
Total	**5.3**	**8.3**	**440**

Type	Indicated Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.3	5.9	20
Primary	29.3	8.2	2,390
Total	**29.6**	**8.1**	**2,410**

Type	Inferred Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.6	6.2	220
Primary	38.4	6.6	2,540
Total	**42.0**	**6.6**	**2,760**

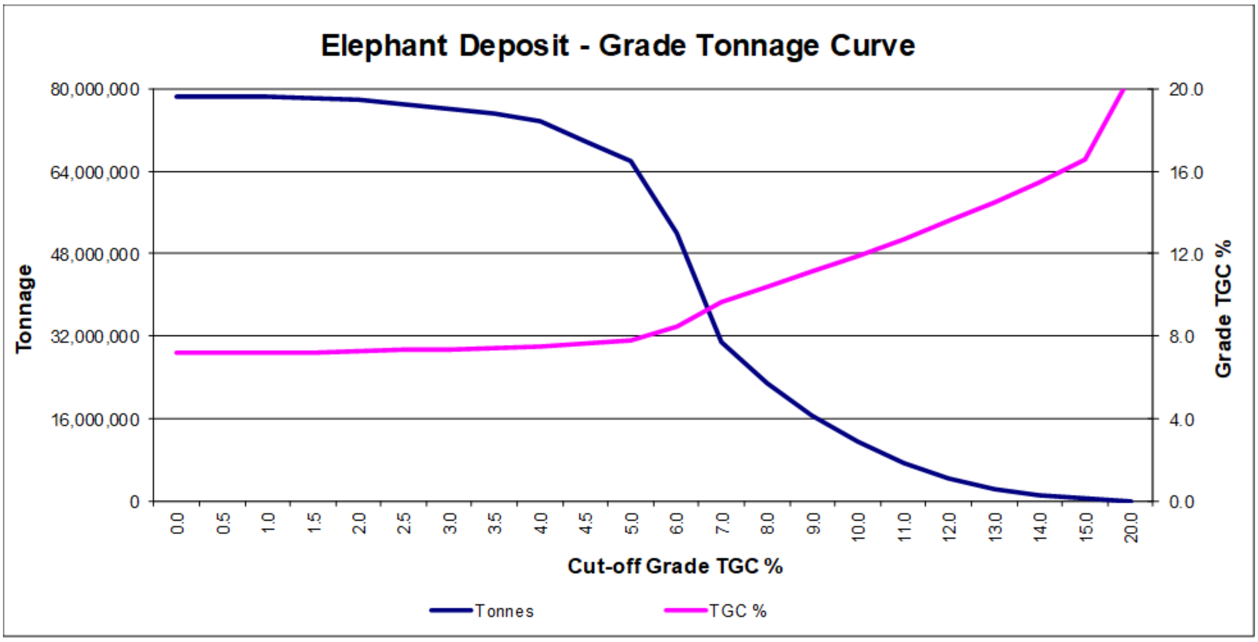
Type	Total Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	6.6	7.0	460
Primary	70.3	7.3	5,150
Total	**76.9**	**7.3**	**5,620**

Table 3 Elephant Graphite Resource Grade Tonnage Summary

Elephant Graphite Deposit
April 2019 Mineral Resource Estimate

Grade Range TGC%	Incremental Resource Tonnage t	Incremental Resource TGC %	Incremental Resource Contained Graphite (t)	Cut-off Grade TGC%	Cumulative Resource Tonnage t	Cumulative Resource TGC %	Cumulative Resource Contained Graphite (t)
0.0 -> 0.5	20,816	0.38	79	0.0	78,526,858	7.19	5,649,959
0.5 -> 1.0	125,493	0.86	1,074	0.5	78,506,042	7.20	5,649,881
1.0 -> 1.5	231,641	1.28	2,965	1.0	78,380,549	7.21	5,648,807
1.5 -> 2.0	233,548	1.74	4,068	1.5	78,148,908	7.22	5,645,841
2.0 -> 2.5	995,088	2.35	23,386	2.0	77,915,360	7.24	5,641,774
2.5 -> 3.0	716,935	2.80	20,051	**2.5**	**76,920,272**	**7.30**	**5,618,387**
3.0 -> 3.5	1,091,045	3.27	35,700	3.0	76,203,337	7.35	5,598,337
3.5 -> 4.0	1,419,651	3.76	53,442	3.5	75,112,292	7.41	5,562,636
4.0 -> 4.5	3,797,906	4.33	164,573	4.0	73,692,641	7.48	5,509,194
4.5 -> 5.0	3,870,793	4.74	183,528	4.5	69,894,735	7.65	5,344,622
5.0 -> 6.0	14,161,646	5.49	776,882	5.0	66,023,942	7.82	5,161,094
6.0 -> 7.0	20,868,366	6.68	1,394,810	6.0	51,862,296	8.45	4,384,212
7.0 -> 8.0	8,177,873	7.47	610,577	7.0	30,993,930	9.65	2,989,402
8.0 -> 9.0	6,132,154	8.49	520,662	8.0	22,816,057	10.43	2,378,825
9.0 -> 10.0	5,141,471	9.49	487,785	9.0	16,683,903	11.14	1,858,162
10.0 -> 11.0	4,286,633	10.47	448,831	10.0	11,542,432	11.87	1,370,377
11.0 -> 12.0	2,975,643	11.47	341,200	11.0	7,255,799	12.70	921,546
12.0 -> 13.0	1,926,611	12.46	239,965	12.0	4,280,156	13.56	580,347
13.0 -> 14.0	1,177,631	13.45	158,420	13.0	2,353,545	14.46	340,382
14.0 -> 15.0	603,970	14.45	87,268	14.0	1,175,914	15.47	181,962
15.0 -> 20.0	571,944	16.25	92,952	15.0	571,944	16.56	94,694
20.0 -> 99.0	8,441	20.64	1,742	20.0	8,441	20.64	1,742
Total	**78,535,299**	**7.19**	**5,649,959**				

Figure 2 Elephant Graphite Resource Grade Tonnage Curve



During 2017 and 2018, samples obtained from the weathered zone at the Buffalo deposit were submitted for metallurgical locked-cycle testing through a simulated process flowsheet. The sample descriptions, flake distribution of product, concentrate grades and metallurgical recoveries are shown below.

Overall, high concentrate grades >96% TGC can be achieved for the weathered material type at almost 90% recovery. Further work is planned to refine the Buffalo primary flake size classification in the future.

Table 4 Buffalo Weathered Simulated Product Flake Size Classification

Sieve Size (μm)	% in Interval	Cumulative %
>300	24.2	24.2
180-300	7.0	31.2
150-180	20.4	51.7
106-150	14.7	66.4
74-106	9.6	76.0
45-74	10.7	86.6
<45	13.4	100.0
	Concentrate TGC%	**Met Rec %**
	96.0	87.9

Table 5 Buffalo Primary Flake Size Classification

Sieve Size (μm)	% in Interval	Cumulative %
>300	9.6	9.6
180-300	24.2	33.8
106-180	31.7	65.5
38-106	34.5	100.0
	Concentrate TGC%	**Met Rec %**
	96.0	76.9

Appendix 2: Buffalo Resource Grade Tonnage Tables and Curves:

Table 6 April 2019 Buffalo Inferred Vanadium Mineral Resource Estimate (4.3% TGC Cut-off, above Ore Reserve pit design)

Grade Range TGC%	Incremental Resource Tonnage t	Incremental Resource V_2O_5 %	Incremental Resource Cont. V_2O_5 t	Cut-off Grade TGC%	Cumulative Resource Tonnage t	Cumulative Resource V_2O_5 %	Cumulative Resource Contained V_2O_5 (t)
0.0 -> 0.5	0	0.00	0	0.0	16,164,096	0.25	41,182
0.5 -> 1.0	0	0.00	0	0.5	16,164,096	0.25	41,182
1.0 -> 1.5	0	0.00	0	1.0	16,164,096	0.25	41,182
1.5 -> 2.0	0	0.00	0	1.5	16,164,096	0.25	41,182
2.0 -> 2.5	0	0.00	0	2.0	16,164,096	0.25	41,182
2.5 -> 3.0	0	0.00	0	2.5	16,164,096	0.25	41,182
3.0 -> 3.5	71	0.20	0	3.0	16,164,096	0.25	41,182
3.5 -> 4.0	8,841	0.23	20	3.5	16,164,025	0.25	41,182
4.0 -> 4.5	5,873	0.25	14	4.0	16,155,184	0.25	41,162
				4.3	**16,151,824**	**0.25**	**41,154**
4.5 -> 5.0	7,959	0.22	18	4.5	16,149,311	0.25	41,148
5.0 -> 6.0	126,667	0.17	221	5.0	16,141,352	0.25	41,130
6.0 -> 7.0	817,555	0.18	1,470	6.0	16,014,685	0.26	40,910
7.0 -> 8.0	1,654,203	0.19	3,216	7.0	15,197,130	0.26	39,439
8.0 -> 9.0	2,529,789	0.21	5,387	8.0	13,542,927	0.27	36,223
9.0 -> 10.0	2,653,854	0.24	6,249	9.0	11,013,138	0.28	30,836
10.0 -> 11.0	2,444,151	0.26	6,271	10.0	8,359,284	0.29	24,587
11.0 -> 12.0	1,784,071	0.27	4,836	11.0	5,915,133	0.31	18,316
12.0 -> 13.0	1,496,664	0.29	4,311	12.0	4,131,062	0.33	13,480
13.0 -> 14.0	999,134	0.30	2,997	13.0	2,634,398	0.35	9,169
14.0 -> 15.0	615,964	0.33	2,052	14.0	1,635,264	0.38	6,172
15.0 -> 20.0	997,235	0.41	4,040	15.0	1,019,300	0.40	4,121
20.0 -> 99.0	22,065	0.37	81	20.0	22,065	0.37	81
Total	**16,164,096**	**0.25**	**41,182**				

Figure 3 Buffalo Vanadium Resource Grade Tonnage Curve

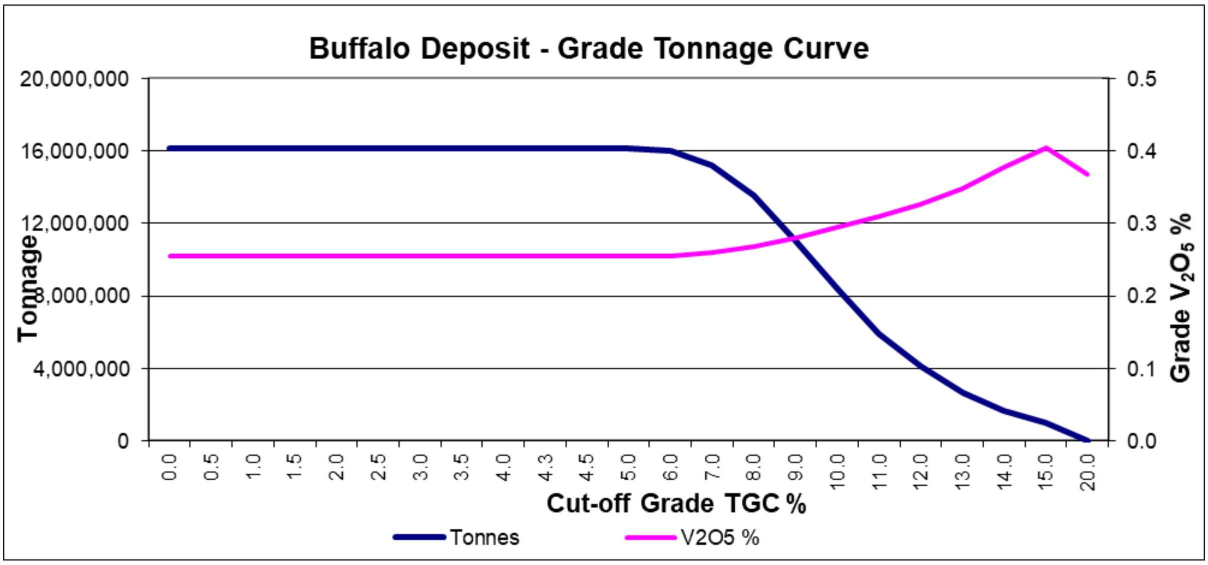


Table 7 April 2019 Total Buffalo Graphite Mineral Resource Estimate (2.5% TGC Cut-off)

Type	Measured Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.4	8.8	300
Primary	2.1	9.2	200
Total	**5.5**	**9.0**	**500**

Type	Indicated Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.2	7.7	20
Primary	16.3	10.4	1,690
Total	**16.5**	**10.3**	**1,710**

Type	Inferred Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	0.1	8.3	10
Primary	20.5	9.0	1,840
Total	**20.6**	**9.0**	**1,850**

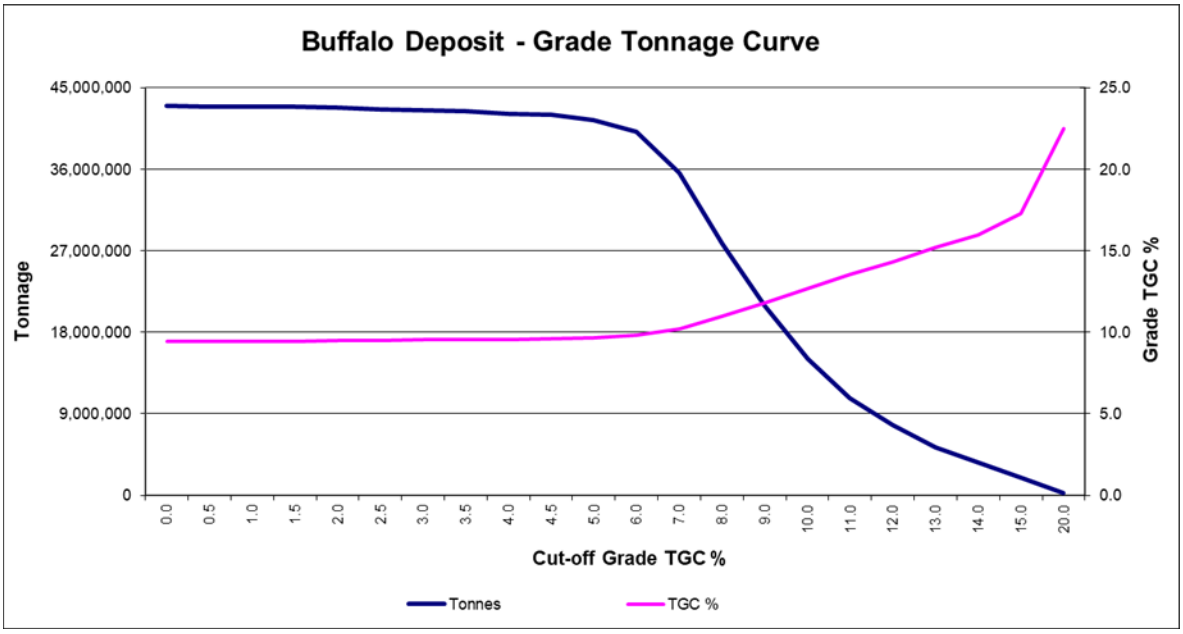
Type	Total Mineral Resource		
	Tonnage Mt	TGC %	Cont. Graphite kt
Weathered	3.7	8.7	330
Primary	38.9	9.6	3,720
Total	**42.6**	**9.5**	**4,050**

Table 8 Buffalo Graphite Resource Grade Tonnage Summary

Buffalo Graphite Deposit
April 2019 Mineral Resource Estimate

Grade Range TGC%	Incremental Resource Tonnage t	Incremental Resource TGC %	Incremental Resource Contained Graphite (t)	Cut-off Grade TGC%	Cumulative Resource Tonnage t	Cumulative Resource TGC %	Cumulative Resource Contained Graphite (t)
0.0 -> 0.5	44,592	0.27	120	0.0	42,957,229	9.43	4,052,953
0.5 -> 1.0	1,713	0.84	14	0.5	42,912,637	9.44	4,052,833
1.0 -> 1.5	39,240	1.21	475	1.0	42,910,924	9.44	4,052,819
1.5 -> 2.0	118,942	1.75	2,083	1.5	42,871,684	9.45	4,052,344
2.0 -> 2.5	121,596	2.09	2,541	2.0	42,752,742	9.47	4,050,261
2.5 -> 3.0	155,554	2.80	4,354	**2.5**	**42,631,146**	**9.49**	**4,047,720**
3.0 -> 3.5	106,330	3.24	3,444	3.0	42,475,592	9.52	4,043,366
3.5 -> 4.0	243,447	3.75	9,129	3.5	42,369,262	9.54	4,039,922
4.0 -> 4.5	141,066	4.28	6,032	4.0	42,125,815	9.57	4,030,793
4.5 -> 5.0	599,820	4.69	28,151	4.5	41,984,749	9.59	4,024,761
5.0 -> 6.0	1,310,412	5.52	72,272	5.0	41,384,929	9.66	3,996,609
6.0 -> 7.0	4,445,413	6.57	292,283	6.0	40,074,517	9.79	3,924,337
7.0 -> 8.0	7,818,439	7.50	586,240	7.0	35,629,104	10.19	3,632,055
8.0 -> 9.0	6,896,728	8.48	584,739	8.0	27,810,665	10.95	3,045,815
9.0 -> 10.0	5,849,435	9.49	554,858	9.0	20,913,937	11.77	2,461,076
10.0 -> 11.0	4,384,658	10.48	459,525	10.0	15,064,502	12.65	1,906,218
11.0 -> 12.0	2,893,850	11.48	332,294	11.0	10,679,844	13.55	1,446,693
12.0 -> 13.0	2,481,911	12.47	309,422	12.0	7,785,994	14.31	1,114,399
13.0 -> 14.0	1,688,060	13.49	227,719	13.0	5,304,083	15.18	804,977
14.0 -> 15.0	1,654,433	14.42	238,541	14.0	3,616,023	15.96	577,258
15.0 -> 20.0	1,741,095	16.61	289,210	15.0	1,961,590	17.27	338,717
20.0 -> 99.0	220,495	22.45	49,507	20.0	220,495	22.45	49,507
Total	**42,957,229**	**9.43**	**4,052,953**				

Figure 4 Buffalo Graphite Resource Grade Tonnage Curve



During 2017 and 2018, samples obtained from the weathered zone at the Buffalo deposit were submitted for metallurgical locked-cycle testing through a simulated process flowsheet. The sample descriptions, flake distribution of product, concentrate grades and metallurgical recoveries are shown below.

Overall, high concentrate grades >96% TGC can be achieved for the weathered material type at almost 90% recovery. Further work is planned to refine the Buffalo primary flake size classification in the future.

Table 9 Buffalo Weathered Simulated Product Flake Size Classification

Sieve Size (µm)	% in Interval	Cumulative %
>300	6.27	6.27
180-300	2.79	9.06
150-180	14.27	23.33
106-150	14.64	37.97
74-106	13.78	51.74
45-74	23.45	75.19
<45	24.81	100.00
	Concentrate TGC%	**Met Rec %**
	96.0	89.3

Table 10 Buffalo Primary Flake Size Classification

Sieve Size (µm)	% in Interval	Cumulative %
>300	9.3	9.3
180-300	20.1	29.4
106-180	30.7	60.1
38-106	39.9	100.0
	Concentrate TGC%	**Met Rec %**
	96.0	76.9

Appendix 3: Table 1 of JORC Code

JORC Code, 2012 Edition Table 1 Appendix 3 to Announcement: Buffalo Resource Update

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. 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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.*	For core, all mineralised samples were obtained from ¼ HQ3 core and sampled at 1m or 2m intervals or to geological contacts. Standard industry electric core saw was used to cut core with quarter core submitted for analysis. The entire RC hole was sampled and assayed at 1m intervals.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	The deposit was drilled by diamond core and RC methods. Triple tube diamond core drilling was used to provide the best core recovery possible. Detailed lithology and structural logs were completed. Competent and intact drill core provides a more representative sample for geochemical sampling and physical mineral properties assessment of graphite products. All holes were collared with HQ3 (63.5mm) core diameter. The RC drilling was undertaken using a SHRAM RC rig with Metzke rig mounted cone splitter. A nominal 4.5 inch blade bit was used to achieve drilling penetration instead of a normal hammer bit. The entire RC hole was sampled and assayed at 1m intervals.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	Diamond core was reconstructed into continuous runs using an iron angle cradle for orientation marking by trained field technicians, with sample core recovery measured for each core run. Down hole depths were validated against core blocks and drillers run sheets. Average core recovery returned was 96% and there was no observed relationship with core recovery and graphite grade and no sample bias identified. Some core loss was encountered in the oxide zone however is not interpreted to be sufficiently significant to warrant hole re-drilling to recover further sample for laboratory re-analysis. Sieved RC chip samples were collected and geologically logged and grade estimates (Visual Graphite Estimates).

Criteria	JORC Code explanation	Commentary
		The RC samples were assessed for moisture and weight at the rig with data recorded in the database.
Logging	• *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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	Drill holes were logged by trained and experienced geologists and the level of detail would support a Mineral Resource estimation and subsequent classification. Geological logging of all drill cuttings included; weathering, lithology, colour, mineralogy, mineralisation and visual graphite estimates. All data is initially captured on paper logging sheets and transferred to locked excel format tables for validation and is then loaded into the parent access database. All diamond drill core has been photographed and archived, firstly after mark-up and secondly after sampling. The logging and reporting of visual graphite percentages on preliminary logs is semi-quantitative and not absolute.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.*	Core samples were cut using an industry standard saw, with ¼ core sent for geochemical analysis thereby leaving sufficient core sample to conduct further preliminary metallurgical test work. All samples were drilled dry and split through the cone splitter with a duplicate sample collected at the drill rig. The sampling undertaken to date is appropriate for grade control purposes and geological interpretation. Samples were submitted to the ALS Minerals facility in Johannesburg, South Africa for sample preparation. Samples were weighed, assigned a unique bar code and logged into the ALS system. The entire sample was oven dried at 105° and crushed to -2mm. A 300g sub-sample of the crushed material was then pulverised to better than 85% passing -75µm using a LM5 pulveriser. The pulverised sample was split with multiple feed in a Jones riffle splitter until a 100-200g sub-sample was obtained. Prior to 2018, the sub-sample (pulp) was dispatched to the ALS Minerals Laboratory in Brisbane, Australia for analysis. During 2018 analysis occurred at ALS Minerals Laboratory in Johannesburg.
Quality of assay data and laboratory tests	• *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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	Loss on Ignition (LOI) has been determined between 105° and 1,050°C. Results are reported on a dry sample basis. Analysis includes Total Carbon Total Sulphur analysis by LECO, LOI TGA and ICP-AES. The detection limits and precision for the Total Graphitic Carbon (TGC) and Total Sulphur (TS) analysis are considered adequate for resource estimation. Trace element analysis was undertaken with ME-ICP85, Borate fusion, with ICPAES determination. QAQC protocols include the use of a coarse blank to monitor contamination during the preparation process, Certified Reference Materials (CRM) were inserted at a ratio of 1 in 20. No duplicates were obtained from the core. All laboratory batch QC measures are checked for bias before final entry in the database, no bias has been identified in the results received.

Criteria	JORC Code explanation	Commentary
		The CRM TGC values range between 4-24%. The blank samples comprise 1-2kg of dolomitic marble quarried from a location 50km east of the Elephant deposit. Six CRM's (GGC001, GGC003, GGC004, GGC005, GGC006 and GGC010) were used to monitor graphitic carbon, carbon and sulphur. One base metal CRM (AMIS 346) was utilised to monitor Vanadium.
Verification of sampling and assaying	• *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.*	Significant intersections were visually field verified and inspected by Shaun Searle of Ashmore during his 2015 site visit. No twinned drill holes have been drilled on the project to date however no sampling bias is believed to exist due to quality triple tube core recovery. Q-Q analysis of the RC versus DD drilling indicates that there is no major bias between the two drill methods. Assays reporting below the detection limit were set to a value of half the detection limit prior to Mineral Resource estimation.
Location of data points	• *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.* • *Quality and adequacy of topographic control.*	All spatial data across the Project was collected in WGS84 UTM Zone 37 South datum. Planned drill holes were surveyed using Garmin 62s GPS devices which typically have a ±5m error in the project area. Final collar locations were surveyed by GEOSURVEY utilising a differential GPS system with 0.02cm accuracy. Fresh satellite capture (30cm panchromatic standard 2A WorldView-3 stero orthoimagery) was used to produce a 0.5m contour digital survey model. Drill hole collars were used as control points in producing the digital contours. Reflex ACTII orientation survey tools were used to orientate the drill core and Reflex Ezy shot tools were used to survey the diamond core holes.
Data spacing and distribution	• *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.*	Diamond drill holes are drilled at shallow angles (nominally -50° towards 100-110° UTM grid east) in an attempt to drill perpendicular to stratigraphy as defined by the mapping and the VTEM conductor model. BAT's graphite prospects adopt drill line spacing on 400m and 200m spaced lines with 50m hole spacing on section. Additional grade control spaced drilling has been conducted within the weathered portions of the deposit at 50m by 12.5m spacings. This drill hole spacing is believed appropriate to classify Mineral Resources. Samples were composited to 1m prior to Mineral Resource estimation.
Orientation of data in relation to geological structure	• *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.*	Reconnaissance geological mapping and pitting was conducted prior to drilling the prospect in 2015. Mapping and pitting identified the regional stratigraphic southwest-northeast trend and moderate (-50°-70° towards northwest) dipping rocks. Drill orientation was designed accordingly to limit potential bias. The drilling is considered to have no significant sampling bias relative to geological structure orientation.

Criteria	JORC Code explanation	Commentary
Sample security	• *The measures taken to ensure sample security.*	The samples are stored in the company's field base until laboratory dispatch. Samples are shipped by courier to ALS – Johannesburg, South Africa for sample preparation and then the sub-sample couriered to ALS Brisbane Australia for geochemical analysis. No visible signs of tampering have been reported by the laboratory to date.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	Shaun Searle of Ashmore reviewed drilling and sampling procedures during the 2015 site visit and found that procedures and practices conform to industry standards.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	The Montepuez Project 8770C Mining License comprises an area covering 3,666.88ha and is held 100% by Battery Minerals Limited (Metals of Africa Limited prior to December 2016) via a locally owned subsidiary Suni Resources SA. The Montepuez Project contains the Elephant, Buffalo and Lion deposits however resource and reserve estimations were limited to Elephant and Buffalo during the DFS. All statutory approvals have been acquired to conduct development activities and the Company has established a good working relationship with the government departments of Mozambique and continues to build its relationship with the local community. The company is not aware of any impediments relating to the licenses or area. The Company has completed its field investigations as part of the Environmental Impact Assessment which has subsequently been approved by the regulatory body of Mozambique. *The reference to Exploration Results in this announcement are activities that will contribute towards the estimation of a mineral resources and in turn a reserve determination and feasibility studies, let alone potential or actual mining activities. However, in accordance with Mozambican Law, whilst Battery Minerals via Suni Resources, hold the mining rights over the 8770C tenure for Graphite and Vanadium, "Exploration Results" by definition of the JORC 2012 Code are being discussed, however the work performed and reported is in support of the scheduled mining and processing operations planned for the 8770C Mining Licence.*
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	The Project area has been mapped at 1:250,000 scale as part of a nation-wide geological study prepared by a consortium funded by the Nordic Development Fund. The project area has also been flown with regionally spaced airborne geophysics (magnetics and radiometrics) as part of a post war government investment initiative. There is no record of past direct exploration activities on the license that BAT has knowledge of. A portion of the Montepuez Project was flown with VTEM by a neighbouring license holder and BAT flew its own survey in 2015.
Geology	• *Deposit type, geological setting and style of mineralisation.*	The deposits were discovered after drill testing a series of coincident VTEM conductors and

		prospective stratigraphy with mapped graphitic outcrop occurrences. The 8770C license occurs on the Xixano Complex and traverse the tectonic contacts between the Nairoto, Xixano and Montepuez Complexes. The Xixano Complex includes a variety of metasupracrustal rocks enveloping predominantly mafic igneous rocks and granulites that form the core of a regional north-northeast to south-southwest-trending synform. The paragneisses include mica gneiss and schist, quartzfeldspar gneiss, metasandstone, quartzite and marble. The metamorphic grade in the paragneiss is dominantly amphibolite facies, although granulite facies rocks occur locally in the region. The oldest dated rock in the Xixano Complex is a weakly deformed meta-rhyolite which is interlayed in the meta-supracrustal rocks and which gives a reliable extrusion age of 818 +/- 10 Ma. Graphite-bearing mica schist and gneiss are found in different tectonic complexes in the Cabo Delgado Province of Mozambique. Local geology comprises dolerite, meta-sediments, amphibolites, psammite with graphitic metasediments and graphitic schists. At Elephant deposit the metamorphic banding and foliation strike about 005° and the GSQF dips moderately steep west. At Buffalo the deformation strained zone of GSQF, psammite and amphibolite exhibit brittle and brittle-ductile structures that intersect each other, the deformation zone is where graphite mineralisation is located and part of a regional metamorphic and deformation event. The Montepuez deposits are disseminated with graphite dispersed within gneiss. The graphite forms as a result of high grade metamorphism of organic carbonaceous matter, the protolith in which the graphite has formed may have been globular carbon, composite flakes, homogenous flakes or crystalline graphite.

Drill hole information	• *A summary of all information material to the under-standing of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ◦ *easting and northing of the drill hole collar*
	  ◦ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ◦ *dip and azimuth of the hole*
	  ◦ *down hole length and interception depth*
	  ◦ *hole length*
	• *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 the case.*
		All exploration results have previously been reported by MTA/ BAT between 2015 and 2018.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Exploration results are not being reported. Not applicable as a Mineral Resource is being reported. Metal equivalent values have not been used.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	The geology at Buffalo is complex and comprises a syncline, with the majority of the graphitic schist package occurring on the eastern limb; bound by amphibolite. The drilling is angled toward the east and is likely to be 70 to 90% of true width. The geology at Elephant is less structurally complex than Buffalo and comprises a moderately steep westerly graphitic schist package bound by amphibolite and notable psammite in the southern portion of the orebody.
Diagrams	• *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.*	Relevant diagrams have been included within the main body of text.
Balanced Reporting	• *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.* • *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.*	The report is believed to include all representative and relevant information and is believed to be comprehensive.
Other substantive exploration data	• *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 method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Regional airborne geophysical (magnetics, radiometrics), DEM and regional geological mapping was used to assist mapping interpretation and drill hole targeting. Subsequent to mapping, VTEM data was acquired and contributed to the surface geology interpretation. Metallurgical sample was sourced from drill core sample selected from fresh horizons dispersed over the Elephant and Buffalo orebodies. Metallurgical samples were selected by lithology and TGC%. The samples are considered representative of the orebody.
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large- scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Further drilling to increase the size and/or confidence in the Mineral Resource will be conducted. Further metallurgical testwork is planned to increase the confidence in the metallurgical test results.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* • *Data validation procedures used.*	Geological and field data is collected using customised Excel logging sheets on tablet computers. The data is verified by company geologists before the data is imported into an Access database. Ashmore performed initial data audits in Surpac. Ashmore checked collar coordinates, hole depths, hole dips, assay data overlaps and duplicate records. Minor errors were found, documented and amended.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	A site visit was conducted by, Shaun Searle of Ashmore during June 2015. Shaun inspected the deposit area, drill core, outcrop and the core logging and sampling facility. During this time, notes and photos were taken. Discussions were held with site personnel regarding drilling and sampling procedures. No major issues were encountered.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	The confidence in the geological interpretation is considered to be good and is based on visual confirmation in outcrop. Geochemistry and geological logging has been used to assist identification of lithology and mineralisation. The Mineralisation at the Buffalo deposit has been structurally thickened by local parasitic folding and is considered to be structurally complex; with an overall synclinal structure. Infill drilling has supported and refined the model and the current interpretation is considered robust. Outcrops of mineralisation and host rocks confirm the geometry of the mineralisation. Infill drilling has confirmed geological and grade continuity.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Buffalo Mineral Resource area extends over a north-south strike length of 900m (from 8,585,065mN – 8,585,965mN), has a maximum width of 295m (470,855mE – 471,150mE) and includes the 280m vertical interval from 410mRL to 130mRL. The Elephant Mineral Resource area extends over a south southwest-north northeast strike length of 2.4km (from 8,583,970mN – 8,586,330mN), has a maximum width of 255m (469,055mE – 469,310mE) and includes the 180m vertical interval from 400mRL to 220mRL.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g.*	Using parameters derived from modelled variograms, Ordinary Kriging (OK) was used to estimate average block grades in three passes using Surpac software. Linear grade estimation was deemed suitable for the Buffalo Mineral Resource due to the geological controls on mineralisation. Maximum extrapolation of wireframes from drilling was 100m along strike and 50m down-dip. This was half drill hole spacing in this region of the Project. Maximum extrapolation was generally half drill hole spacing. Reconciliation could not be conducted due to the absence of mining.

Criteria	JORC Code explanation	Commentary
	sulphur for acid mine drainage characterisation). • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	It is supported by preliminary test work that V_2O_5 can be extracted from the graphite tails and further processed to produce a V_2O_5 concentrate as a by-product of graphite processing In addition to graphitic carbon (TGC), V_2O_5, S, TiO_2 and LOI were interpolated into the block model. Flake size was not estimated into the block model but was averaged for characterisation of the Mineral Resource. The parent block dimensions used were 25m NS by 5m EW by 2.5m vertical with sub-cells of 3.125m by 1.25m by 1.25m. The parent block size was selected on the basis of kriging neighbourhood analysis, while dimensions in other directions were selected to provide sufficient resolution to the block model in the across-strike and down-dip direction. An orientated 'ellipsoid' search was used to select data and adjusted to account for the variations in lode orientations, however all other parameters were taken from the variography derived from Domain 1. Three passes were used for each domain. For the domains with grade control spaced drilling, the first pass had a range of 50m, with a minimum of six samples. For the second pass, the range was extended to 200m, with a minimum of six samples. For the final pass, the range was extended to 400m, with a minimum of four samples. For all other domains, the first pass had a range of 200m, with a minimum of six samples. For the second pass, the range was extended to 400m, with a minimum of four samples. For the final pass, the range was extended to 600m, with a minimum of two samples. A maximum of 16 samples was used for all three passes. No assumptions were made on selective mining units. TGC had a strong positive correlation with V_2O_5 and LOI. V_2O_5 and LOI also had a strong positive correlation. Remaining pairs had no correlations or weak negative correlations. The estimate was constrained by geology outlines based on logged geology, with some consideration of TGC grade. The main mineralised unit (denoted 'gs' in the lithology attribute) consisted of logged GSQF, GS1 and GS2 lithologies. Internal, lower grade zones were also domained where amphibolite was logged (denoted 'amp' in the lithology attribute). The country rock is amphibolite and is waste material. TGC, V_2O_5, S, LOI and TiO_2 grades were estimated into the 'gs' and 'amp' blocks, although only the 'gs' material was classified as Mineral Resource. Geological logging was used to create weathering wireframes. In addition, the raw assays for the Deposit were imported into Supervisor software to assist with determining an appropriate wireframe cut-off grade. Breaks were noted at 2% and 2.5% TGC, therefore a lower wireframe cut-off of 2.5% TGC was selected as a lower grade cut-off for wireframing. A minimum down-hole length of 4m was used with no edge dilution and some zones of internal dilution were included to

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		maintain continuity of the wireframes. The wireframes were applied as hard boundaries in the estimate. Statistical analysis was carried out on data from six mineralised domains and eight waste domains. After analysis, it was determined that no top-cuts were required. Validation of the model included detailed comparison of composite grades and block grades by northing and elevation. Validation plots showed good correlation between the composite grades and the block model grades.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages and grades were estimated on a dry in situ basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	The graphite Mineral Resource have been reported at a 2.5% TGC cut-off. The cut-off grade was based on current market prices used in the Montepuez Feasibility Study completed by Snowden Mining Consultants in February 2017. In addition, BAT has announced during 2018 that approximately 80% of the anticipated 50,000t of graphite concentrate production has entered into binding offtake agreements with various customers. Grade tonnage information is included to demonstrate quantities and quality at variable cut-off grades. In consideration that V_2O_5 could be marketed as a by-product of graphite production, the Inferred V_2O_5 Mineral Resource is reported above a 4.3% TGC cut-off grade, within the Ore Reserve pit design for fresh material only.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Ashmore has assumed that the deposit could potentially be mined using open cut mining techniques. No assumptions have been made for mining dilution or mining widths, however mineralisation is generally broad. It is assumed that mining dilution and ore loss will be incorporated into any Ore Reserve estimated from a future Mineral Resource with higher levels of confidence.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	The Deposit has had MLA analysis completed to determine flake size and liberation and was conducted on a simulated product. Results are tabulated below. In addition, high concentrate grades >96% TGC can be achieved for all material types and an average metallurgical recovery for the Deposit is approximately 90% for weathered material. **Weathered Product Flake Distribution** **Sieve Size (µm)** / **% in Interval** / **Cumltve %** >300 / 6.33 / 6.33 180-300 / 2.81 / 9.14 150-180 / 14.39 / 23.52 106-150 / 14.71 / 38.23

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		74-106	13.82	52.05 45-74	23.48	75.53 <45	24.47	100.00 Test work has been conducted to demonstrate that V_2O_5 can be extracted as a by-product of graphite processing at the Project. Tailings from the graphite plant will undergo a secondary process that involves further grinding to liberate Vanadium minerals (predominantly roscoelite) and a two stage magnetic separation process with stage 1 removing high iron gangue and stage 2 recovering the Vanadium to the magnetic fraction. The Vanadium rich magnetic fraction recovered from the magnetic recovery circuit contains approximately 75% of the Vanadium in the graphite plant tailings. This material, upgraded to approximately 1.3% V_2O_5, will form the feed to a standard roast and leach process to recover the Vanadium content as a V_2O_5 product.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	No assumptions have been made regarding environmental factors. BAT will work to mitigate environmental impacts as a result of any future mining or mineral processing.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	Various bulk densities have been assigned in the block model based on weathering and mineralisation. These densities were determined after averaging the density measurements obtained from diamond core. Bulk density was measured using the water immersion technique. Moisture is accounted for in the measuring process. A total of 3,272 (Buffalo - 1,484, Elephant 1,788) bulk density measurements were obtained from core drilled at the Project. It is assumed that the bulk density will have little variation within the separate material types across the breadth of the project area.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The Mineral Resource estimate is reported here in compliance with the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' by the Joint Ore Reserves Committee (JORC). The Mineral Resource was classified as Measured, Indicated and Inferred Mineral Resource based on data quality, sample spacing, and lode continuity. The Measured Mineral Resource was defined in areas of close spaced RC and DD drilling of 50m by 12.5m and confined to material above the top of fresh rock. The Indicated Mineral Resource was defined within areas of close spaced diamond drilling of less than 200m by 50m, and where

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		the continuity and predictability of the lode positions was good. The Inferred Mineral Resource was assigned to areas where drill hole spacing was greater than 200m by 50m, where small isolated pods of mineralisation occur outside the main mineralised zones, and to geologically complex zones. The input data is comprehensive in its coverage of the mineralisation and does not favour or misrepresent in-situ mineralisation. The definition of mineralised zones is based on high level geological understanding producing a robust model of mineralised domains. Validation of the block model shows good correlation of the input data to the estimated grades. The Mineral Resource estimate appropriately reflects the view of the Competent Person.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	Internal audits have been completed by Ashmore which verified the technical inputs, methodology, parameters and results of the estimate.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The lode geometry and continuity has been adequately interpreted to reflect the applied level of Measured, Indicated and Inferred Mineral Resource. The data quality is good and the drill holes have detailed logs produced by qualified geologists. A recognised laboratory has been used for all analyses. The Mineral Resource statement relates to global estimates of tonnes and grade. Reconciliation could not be conducted as no mining has occurred at the deposit.