Engineering Performance



DMT Kai Batla (Pty) Ltd

# **TECHNICAL REPORT**

**NI 43-101 MINERAL RESOURCE ESTIMATION** 

PULA RUANGWA GRAPHITE PROJECT, TANZANIA

23 April 2024

Prepared for:

PULA GROUP LLC

c/o Pula Graphite Partners

G.M. Kessy Building, 6 Tuari Road, Dar, Kawe

Tanzania

dmt-group.com

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#### Document

# NI 43-101 MINERAL RESOURCE ESTIMATIONS TECHNICAL REPORT ON PULA GRAPHITE PROJECT

**Effective Date** 

23 APRIL 2024

# **Prepared For**

# **PULA GRAPHITE**

c/o Pula Graphite Partners G.M. Kessy Building, 6 Tuari Road, Dar, Kawe Tanzania

#### **Qualified Person**

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#### **CERTIFICATE OF QUALIFIED PERSON**

#### **Certificate of Qualification - Dexter Stewart Ferreira**

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I, Dexter Stewart Ferreira, do hereby certify with respect to the Technical Report dated effective 1 May 2024 entitled "NI 43-101 Mineral Resource Estimation Technical Report on Pula Graphite Project, Tanzania" that:

- 1. I am a Senior Geostatistician, Mining Engineer and Geologist for DMT Kai Batla Pty Ltd, Department Mineral Resources, at Johannesburg, South Africa.
- 2. I am a graduate from McGill University, Canada with B.Sc. Geological Sciences (1983) and B.Eng. Mining Engineering (1989).
- I am registered as Member of the South African Council of Natural Scientific Professionals (SACNASP) which is a 'Recognised Professional Organisation' (RPO) included in a list of promulgated by Toronto Stock Exchange (TSX) from time to time.
- 4. I have over 25 years of experience as a resource geologist in the evaluation of mineral projects for all levels of feasibility and due diligence status, dealing with a variety of commodities, viz. precious and base metal industries where I have been involved in projects from exploration management right through to project development and valuation of mine operations.
- 5. I have read the definitions of "qualified person" as set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements of to be a qualified person for the purposes of NI 43-101.
- 6. I visited the project site on the 21<sup>st</sup> of June to 30<sup>th</sup> of June 2017.
- 7. I have not had any involvement with the property that is the subject of Mineral Resource Report prior to DMT Kai Batla's engagement as geological consultants on technical matters, the results of which form part of the Mineral Resource Report. DMT Kai Batla holds no direct investment interest in Pula Group LLC.
- 8. I am independent of the issuer as described in Section 1.5 of NI 43-101.
- 9. I have read the NI 43-101, Form 43-101F1, and CIM Standards on Mineral Resources and Reserves, and this technical report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- 10. As of the date of this Certificate, to the best of my knowledge, information and belief, this report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.

Dated on this 23 April 2024

Dexter Stewart Ferreira



#### **CERTIFICATE OF AUTHOR**

#### **Certificate of Qualification - Thabang Phakoe**

#### DMT Kai Batla Pty Ltd

Unit 9, Waterfront Office Park, 266 West Avenue, Ferndale, 2194

Telephone: +27 11 781 4548 I Email: Thabang.Phakoe@dmt-group.com

I, Thabang Phakoe, do hereby certify with respect to the Technical Report dated effective 1 May 2024 entitled "NI 43-101 Mineral Resource Estimation Technical Report on Pula Graphite Project, Tanzania" that:

- 1. I am a Projects Geologist for DMT Kai Batla Pty Ltd, Department Mineral Resources, at Johannesburg, South Africa.
- 2. I am a graduate from University of the KwaZulu Natal, South Africa with B.Sc. Honors in Geology (2010).
- I am registered as Member of the South African Council of Natural Scientific Professionals (SACNASP), which is a 'Recognised Professional Organisation' (RPO) included in a list of promulgated by Toronto Stock Exchange (TSX) from time to time.
- 4. I have 12 years of experience as an exploration projects and resource geologist in the evaluation of mineral projects for all levels of feasibility and due diligence status, dealing with a variety of commodities, viz. ferrous metals, precious and base metals, and where I have been involved in projects from exploration management right through to Resource Estimation.
- 5. I have read the definitions of "qualified person" as set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements of to be a qualified person for the purposes of NI 43-101.
- 6. I visited the Project site from 27 28 June 2023. I am responsible as co-author of this report.
- 7. I have not had any involvement with the property that is the subject of Mineral Resource Report prior to DMT Kai Batla's engagement as geological consultants on technical matters, the results of which form part of the Mineral Resource Report. DMT Kai Batla holds no direct investment interest in Pula Graphite Group LLC.
- 8. I am independent of the issuer as described in Section 1.5 of NI 43-101.
- 9. I have read the NI 43-101, Form 43-101F1, and CIM Standards on Mineral Resources and Reserves, and this technical report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- 10. As of the date of this Certificate, to the best of my knowledge, information and belief, this report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.

Dated on this 23 April 2024.

Thabang Phakoe



# GLOSSARY OF TERMS, ABBREVIATIONS AND UNITS

TERM	DESCRIPTION
%	Percentage
3D	Three Dimensional
ALS	Australian Laboratory Services Global
BD	Bulk Density
BOW	Base of Weathering
Cm	Centimetre
CRM	Certified Reference Material
DD	Diamond drill / Diamond core
DMT	DMT Kai Batla (Pty) Ltd
DGSC	Disseminated graphic schist
DTM	Digital terrain model
GPS	Global Positioning System
GSC	Graphic Schist
На	Hectares
km	Kilometre
kg	Kilogram
Lat	Latitude
Long	Longitude
m	Meter
mm	Millimetre
MRE	Mineral Resource Estimate
Mt	Million tons
Ν	North
NE	Northeast
NI 43-101	National Instrument 43-101
NQ	Boreholes with diameter: outside 75.7 mm; inside 47.6mm
QA/QC	Quality Control and Quality Assurance
QP	Qualified Person
RC	Reverse Circulation
S	South
SACNASP	South African Council of Natural Scientific Professionals
TGC	Total graphite carbon



# 1. SUMMARY

### 1.1. Introduction

At the request of Pula Group LLC ("Pula" or "Client"), DMT Kai Batla ("DMT"), a South African Consulting firm, prepared the Mineral Resource Estimate technical report on the Pula Graphite Project ("Pula," or the "Project"). The Pula Graphite Project is located in Tanzania with Prospecting Licence PL10332/2014. The report has been prepared in accordance with the Canadian Securities Administrators' National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1 (June 30th, 2011, and amendments February 25<sup>th</sup>, 2016). The scope of work undertaken by DMT involved compiling and reporting on the Mineral Resource Estimate based on all available information up to February 2024. The effective date of this Competent Persons Report is April 23<sup>rd</sup>, 2024.

# 1.2. Reliance on other experts

The Report has been prepared by DMT Kai Batla for the Issuer, Pula Graphite Group. The information, opinions and conclusions contained herein are based on:

- Information available to DMT and its authors at the time of preparation of this report.
- Assumptions, conditions, and qualifications as set forth in this report.
- Data, reports, and other information supplied to DMT, by Pula.
- PGP Graphite Flake Size Analyses Report, by Mr. Yusuph Karim Mmbaga.
- Total Graphitic Content assays from original assay datasheets, geologic logs, and reports.
- Mineral Reserve Valuation Report by Bowline Services

# **1.3. Property description, location, and ownership**

The Pula Graphite study area is in QDS 282/4 (Matandarwe), 80 km north of the Nachingwea airport and 20 km north of Mbekenyena town. It is in the Ruangwa District of the Lindi Region in the southeastern part of Tanzania. Matambare and Chunyu, two nearby communities, are situated approximately 6 km west of the study location. The Pula Graphite Project is an extension of the graphite schist in Magnis' Nachu Graphite Project and has Prospecting License number PL10332/2014, which covers an aerial extent of 15.19 km<sup>2</sup>. Table 1 indicates the boundary coordinates of the Pula Graphite location in the Ruangwa District (subject to Section 95 of the Mining Act, Cap. 123). The company structure is indicated in Figure 1.

SN	Latitude	Longitude	SN	Latitude	Longitude		
1	09° 53′30,00"	38°55′0.00"	5	09°49′0.07"	38°55′0.00"		
2	09° 53′30.00"	38°54′0.00"	6	09°49′0.25"	38°54′58.91"		
3	09°48′58.40"	38°54′0.00"	7	09°51′24.29"	38°55′0.00"		
4	09°48′58.40"	38°55′0.00"					
	Pula Graphite Partners Tanzania Limited						
_	-						
	(50	%) The Pula Group	, LLC	(97	%) Charles Stith		

Table 1: Pula Graphite Group licence: PL10332/2014

Figure 1: Pula Graphite Group company structure and ownership.

# 1.3.1. Adjacent Property

The Global Nachu Graphite Project Mineral Resource Estimate as of 1st February 2016 included a total Mineral Resource of 174 Mt (across all five blocks (Blocks B, D, F, FS, and J); at 5.4% graphitic carbon (Cg) and a 3% Cg cut-off grade, yielding 9.3 Mt Cg. The Mineral Resource is reported in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012). The Mineral Resources at Nachu are summarized in Table 2. Notably, 71% of these resources are classified as measured and indicated. A maiden Proved and Probable Ore Reserves, declared on Blocks F and FS, total to 76 Mt with a TGC of 4.8%, equating to 3.6 Mt of contained graphite. Magnis announced a pre-feasibility study in late December 2014 with good economics at an NPV of US\$1.04B and an IRR of 84% with a 10% discount rate, 1.4 years capital payback, and a cash margin of US\$1,600/t. Magnis completed a Bankable Feasibility Study in late March 2016, raising the mine's capacity to 5Mt per year and producing 240kt of graphite initially and 220kt over time. Purity of Nachu graphite increased production and prices, bringing the post-tax net present value to US\$1.69B at 10% discount.



Volt Resources Limited (ASX: VRC) ("Volt") filed its flagship Bunyu Graphite Project Mining Licence Applications ("MLAs") with the Tanzanian Minister for Minerals in February 2018. MLA says Stage 1 development will process 400,000tpa of ore to produce 24,780tpa of graphite. According to the Pre-Feasibility Study, MLA covers Bunyu's Stage 2 development, which will employ 3.8Mtpa of ore feed to produce 170,000tpa of graphite output in late 2020. The JORC-compliant Maiden Ore Reserve is 127Mt at 4.40% TGC.

Nachu Mineral Resource Estimate						
Classification	Tonnes (Mt)	Grade (% TGC)	Graphite (Mt)			
Measured	63	4.7	3.0			
Indicated	61	5.7	3.5			
Inferred	50	5.8	2.9			
Total Mineral Resources	174	5.4	9.3			

#### Table 2: The Nachu Mineral Resources and Ore Reserves Estimates – declared in 2016.

Nachu Ore Reserve Estimate						
Classification	Tonnes (Mt)	Grade (% TGC)	Graphite (Mt)			
Proved	50.5	4.6	2.3			
Probable	25.7	5.1	1.3			
Total Ore Reserves	76.3	4.8	3.7			



# 1.4. Accessibility, Climate, Local Resource, Infrastructure and Physiography

The site is located within Matandarwe in the Ruangwa District and is accessed via B2 road from Dar Es to Ruangwa, which is 225 km away from Mtwara. The elevation within the study area ranges from approximately 161masl in the north to 224masl in the southeastern portion. The Mbwemburu River runs through the study area in the northwestern corner, where it flows from the west towards a north easterly direction, and further downstream toward the Indian Ocean.

The district of Lindi is characterized by a tropical savanna climate at an altitude of 107.19 meters above sea level with annual temperature ranging from record high and low of 34.0°C and 18.0°C, respectively. The region receives 177.09 mm of rain in a year on 177.19 days. It can get dry for 187.81 days annually with average relative humidity of 77.89% and 11.25 yearly average hours of sunshine, in which there are 123,98 hours of sunshine in a year.

The study area is sparsely populated and to the west and east, it is bordered by Matambarare and Nandandala villages respectively. There are other villages such as Namtamba, Moro and Mpenzi and potentially associated developments such as schools and shops, etc. Infrastructure such as this may need to be relocated to some extent upon the project proceeding to the phase of mine development.

At the time of the most recent site visit (June 2023), no mining activity or processing infrastructure had developed. In terms of graphite processing infrastructure, a graphite processing plant at Lindi Jumbo Graphite mine proposes a capacity to process 300,000Uy of ore with a TGC grade of 16%. The processing plant is designed with a graphitic carbon recovery rate of approximately 85%. Mtwara city along the east coast of Tanzania is the closest regional center to the project which has both a port and airport which are suitable for export of graphite concentrate. In addition, Nachingwea airport is located to the south of the project area.

#### 1.5. History

#### **1.5.1. Exploration History**

Geological mapping, soil geochemistry, IP dipole-dipole, magnetic surveys, and 30 trenches of approximately 1023m were conducted. According to The Pula Group - Tanzania, **2016**, this research suggests the region has significant amount of graphite. Studies found graphite schist and coarse flake, high-grade graphite ores. This ore contains 3%–5%, 5%–18%, and 25%–50% carbon. Two main graphite blocks included massive Mineral Resources with over 50% high-grade material with large flakes. Approximately 100Mt of hypothetical non-JORC3 graphite ore are in both blocks. Additional exploration activity was conducted in July **2017** by Pula Group LLC. Nine (9) RC drill holes were drilled to confirm continuity and Graphite mineralization continuity along strike and down dip; mineralogical composition, mineralized domains, TGC%, flake size, and deleterious minerals or components were measured. All 1m-interval samples were packed, marked, and sampled according to DMT requirements.



# **Quality Assurance and Quality Control (QAQC)**

An assaying quality assurance and quality control ("QA/QC") protocol was applied to the Pula graphite samples including CRM, duplicates, and "blank" samples to check for laboratory accuracy, precision, and cross-contamination. The standard CDN-GR-1 with a certified value of 3.12% TGC  $\pm 0.11$  was sourced from CDN Resource Laboratories Ltd. A total of 10 CRMs were inserted, and results were acceptable considering 70% of the 10 standard submissions were well within acceptable limits and 3 were near to the lower limit.

Additionally, eleven duplicate samples were added to the sample stream and results indicated that laboratory duplicate analysis precision and accuracy errors do not affect resource estimating assays. Eleven (11) blank samples were added to the sample stream and five samples had a TGC value of <0.05% (Bureau Veritas' detection limit), while the other six had readings between 0.06% and 0.10%.

The Competent Person found that the laboratory precision was adequate. **Bureau Veritas Laboratory** in Johannesburg, South Africa was utilized for this analysis. Twenty percent of the samples were analysed at this stage and the remaining material is stored in Ruangwa.

# 1.5.2. Metallurgical Testing and Mineral Processing

Mineral processing and metallurgical testing studies were carried out in 2017 to evaluate flake size and, to a limited extent, extractive metallurgy and to advance the characterization of the potential value of graphite deposits associated with the two tenements. ISO 9001:2008-certified African Minerals and Geosciences Laboratory in Kinondoni, Tanzania, analysed the samples. Total graphite carbon ("TGC") and elemental composition were assessed with metallurgical and flake-size evaluations. Test results show graphite is abundant. The 36 samples' average carbon content is 9.5%. Twenty two percent (22%) of samples exceed 12% carbon. The deposits in PGP's holdings are shallow - less than 200m.

#### Flotation work and results

Eight (8) samples were prepared for flotation and sieve analysis by compositing samples collected from specific prospective zones. The float fraction for each sample represents the amount of graphite that was recovered in the float fraction as concentrated, while the sink fraction represents the fraction of the sample that was recovered as tailings (mainly silica sand).

#### Particle Size Distribution analysis and results

PSD analysis was performed on float products (concentrates). A representative sample of each dried float product was cut and sieved through 500, 300, 180,150, and 106-micron sieves to determine the flakes' particle size. Each fraction was weighed and recorded after sieving using an Octagon 200 sieve shaker.



Results showed mostly 300-micron flake sizes. There is a relatively small percentage below 300 microns and 500 microns. Note that these samples were taken from near-surface oxidized zones. Clay and kaolinite are secondary minerals in weathered zones. They split graphite flakes. Sample results suggest that even weathered graphite is flaked and carbon-rich enough for industry, notably batteries. Importantly, Pula tenements have more significant flake sizes than Magnis. Studies on drilling samples will show that oxidized zone flake sizes extend deeper in fresh rocks. Weathering can diminish flake sizes. Therefore, deep samples from fresh rocks will have better flake sizes.

#### **1.5.3. Mineral Resource Estimates**

In April **2018**, Pula appointed DMT to compliantly quantify Pula graphite deposit's total graphitic content ("TGC") Mineral Resources. The client provided DMT with Excel TM spreadsheets with drill hole collars, assays, lithological logging codes, surveys, and specific gravity values. Thirty (30) PDF cross-sections with geological and structural interpretation were obtained for the trench mapping.

Verified data was used to build wireframes from trench lithologies. Each trench segment was vectordrawn (digitized) to model graphitic schist ("GSC"), disseminated graphic schist ("DGSC"), and barren pegmatite. Adjusted files were imported into Studio 3.0TM. To guarantee enough volume for blockfilling during estimation, the sections were extended 1000m down-dip at -45°.

Complete naïve statistics and swath plots were done on the drillhole database between the following limits: 8912200N to 8915200N, 489300E to 491400E, and -850E1 to 300E1.Statisticians examined TGC grade results as original samples. The un-composited dataset shows low correlation coefficients, indicating little variability, especially for trench samples. To determine if the compositing process modified the demographic characteristics of the original sample set, the composited data was compared to it. Thus, the trench mean value increased insignificantly despite expanding the sample population by roughly 6%.

The Euclidean spacing between samples was examined to geologically model Pula data. A block size of 10.0m x 10.0m x 2.0m (XYZ) was chosen to discretize the block-model at Pula. The models were estimated using data only contained within the defined limits of the variograms. Pairwise relative variograms were used in this study; therefore, no data transformation was necessary. In this study, variography was conducted on each dataset beginning at Oig and re-calculating clockwise in 20X increments. The block size chosen was 10 x 10 x 2 meters (*Northing x Easting x Elevation*). Within the project area there were 210 rows of blocks in the X direction, 300 columns of blocks in the Y direction and 576 stacks of blocks in the Z direction, for a total of 36,288,000 blocks. The project area consists of an area from: 8912200N and 8915200N, 489300E to 491400E, and -850EI to 300E. The cross-validation tests performed were done on the model. Numerous cross validation tests were performed on this block estimation study; one of them being naïve cross-validation.



### **Mineral Resource Estimates Results**

Once geological modelling and estimation were conducted, Indicated and Inferred Mineral Resource results were tabulated at various TGC thresholds as indicated in Table 3.

	INDICATED	
TGC Cut-Off (%)	Tonnes	% TGC
0.00	50,950,080	4.62
1.00	44,405,280	5.24
2.00	40,138,200	5.64
3.00	34,663,680	6.13
4.00	25,576,560	7.06
5.00	17,646,120	8.23
6.00	11,696,400	9.64
7.00	8,225,820	11.00
8.00	5,570,640	12.67
9.00	4,393,440	13.79
10.00	4,393,440	13.79
	INFERRED	
TGC Cut-Off (%)	Tonnes	% TGC
0.00	107,958,420	3.91
1.00	88,906,140	4.67
2.00	75,982,860	5.19
3.00	61,993,080	5.81
4.00	43,843,140	6.75
5.00	21,881,880	8.90
6.00	14,810,040	10.61
7.00	10,290,780	12.39
8.00	6,969,780	14.77
9.00	6,072,840	15.71

#### Table 3: Mineral Resource Estimates - 2017



#### 1.6. Geological setting and mineralisation

The Prospecting License PL10332/2014 is geologically classified under the Usagaran (Mozambique Belt) Proterozoic system with structural trends within the Usagaran system hosting deposits such as gold, nickel, copper, gemstones (tourmaline, red garnet, tanzanite) and the highest-grade coarse graphite flakes in the country (Pula Group - Tanzania, 2016). The analysis of graphite ore samples in this region have shown on average a major content of large flakes of crystalline and expandable graphite with twenty percent (20%) jumbo flakes (+300µm), fifty percent (50%) large flakes (+180µm), twenty percent (20%) medium flakes (-180+106µm), and ten percent (10%) fine grains. In finished graphite flakes, this ore is upgradeable up to approximately 94% carbon.

The study area is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists. Structural measurements taken within the northern portion of the study area, indicates that the graphitic schist strike east- west at approximately 250° to 260° and dip of 30° to 50° south-east. Within the vicinity of the Pula Graphite study area, schists and gneisses hosting graphite trend northeast to southwest and dip in a southeasterly direction of which PL10332/2014 is located within this mineralized corridor.

#### 1.6.1. Deposit Mineralisation

The graphite deposit, primarily hosted within high-grade metamorphic rocks, is relatively shallow, occurring at depths of less than 200 meters. Graphite occurs in disseminated or lens-like formations within micaceous schist, exhibiting variable textures and resistance to erosion. Extensive graphite schist zones have been identified in the region, with varying TGC values and flake sizes. Zones with higher TGC values (13.5% to 23%) have larger flakes sizes, while other exhibit slightly lower TGC values (5.4% to 13.5%) but similar geology. Limited strike length zones contain smaller flake size but notable TGC values (8.45%).

### 1.7. Deposit Type

In much of the Neoproterozoic Mozambique Mobile Belt (NMMB), graphite is found in eastern Tanzania's North-South strike. Moye and Msabi (2021) found that graphite mineralisation in Chenjere supports the syngenetic model due to its medium-to-coarse crystalline flake type. The graphite mineralization suggests metasedimentary origin, with a maximum grade of 16wt.% as dispersed flakes in graphitic gneiss host rock. The graphite mineralization host lithology follows the NE-SW trend of the area's lithologies with few exceptions. The extent, grade, and flakes size of biotite gneiss mineralized zones make the study area economically viable for graphite mining.



# 1.8. Exploration

In May 2023, Pula commissioned a further study to collect additional data through diamond and RC drilling in Zone A and Zone B of its tenements. Table 4 provides a summary of the work completed by Pula to date; in addition to historical exploration work completed on the Property as described in Section 1.5.1 above.

Task	Area	Number of samples	Comments
Diamond Drilling	PL10332/2014	7 boreholes (721.83m)	Carried out to confirm continuity of graphitic schist, and increase the
RC Drilling	PL10332/2014	3 drillholes (285 samples)	Resources as declared in 2018; ALS Geochemical laboratory (assays)

# Table 4: Summary of exploration drilling work completed to date.

# 1.9. Drilling

The initial data collection in **Phase 1** included drilling and was conducted in 2017 (as detailed in Section 1.5.1 above), with resource estimation results summarized in Table 3 under Section 1.5.3 above. However, to increase the resource confidence of the Pula Graphite Deposit, Pula embarked on an additional drilling program; **Phase 2**. Therefore, seven (7) DD holes and three (3) RC holes were planned and drilled in June-July 2023. Approximately 721.83m and 285m RC chips were additionally drilled and only the mineralized zone of the drill length as half-core samples was sampled for analytical testing at **ALS Geochemistry Laboratory**, Johannesburg, South Africa.

Phase 2 drilling was conducted to infill between the previous boreholes and to extend drilling to other parts of the deposit: targeting potential graphite mineral occurrences. Moreover, Phase 2 drilling was focused on testing the 2018 geological model and has been planned considering the interpretation which was based on historical data.

DMT served as advisors to the Phase 2 drilling and ensured the drilling program was executed in line with standard operating procedures (SOPs). All seven DD boreholes were drilled using a NQ diamond drill bit size, which generates a 75.7 mm hole diameter and produces core with 47.6 mm diameter. Generally, lower rates of recoveries ranged below 80% at approximately the first 7 meters of core runs. However, actual recoveries range from 87 % to 96 %, which is acceptable for this level of report.



Subsequent to drilling, all samples were logged and logging was done based on coded lithologies: GSC- Graphite , DGSC- Disseminated Graphite Schist, QV – Quartz vein, PGE - Pegmatite, NR-No Recovery, SOL-Soil, MSC – Garnet Mica Schist; with focus on major and minor rock type, colour, grain size, structure, texture, contact, type and degree of mineralization, type, and degree of alteration. Data was properly documented using the standard logging sheets. Information regarding lithologies, alteration, mineralization, structure, assay or geochemical samples and QA/QC samples were entered into EXCEL. All data including core photographs were stored digitally.

# 1.10. Sample Preparation, analysis and security

This section reviews all known sample preparation, analysis, and security as it relates to the ten (10) new holes (Phase 2, 2023 drilling). Chief Geologist, Yusuph Karim Mnnbagal, was responsible for supervising the drilling and sampling program in Tanzania, whilst Thabang Phakoe and Kagisho Nondwangu (DMT Geologists), with support of the QP of this report, Mr. Dexter S. Ferreira, were responsible for the quality assurance (QA) and quality control (QC) sampling and dispatch of the samples to the laboratory in South Africa.

#### 1.10.1.Sampling Procedure

Once the core was logged and marked for sampling, the sample number was marked on the corresponding core interval and on average, maximum sample length of 1m were applied, these lengths were solely based on lithological boundaries. RC samples were split from the drilling side, sealed, and labelled properly. Whilst for the original DD core samples, half core samples were taken, bagged, and labelled. The remaining half core was relabelled to indicate meter marks, lithological contacts and sample numbers was marked on the half core. The marking was done on the cut surface of the core.

#### 1.10.2.Sampling Analysis

An assaying QA/QC protocol was applied to the Pula Graphite samples, including insertion of CRM, and duplicates (at a ratio of 1 to every 20 samples) to check for laboratory accuracy, precision and cross-contamination. All samples were sent to the **ALS Geochemical Laboratory** (ISO 17025:2017 and ISO 9001:2015 certified) to carry out the sample registration, sample weighing, sample preparation and analyses. A total of 299 samples have been submitted for analysis and this includes 36 (12%) which were for QA/QC purposes.

The Total Graphitic Carbon ("TGC") content was determined whereby carbonate material is removed by a reaction with hydrochloric acid, followed by roasting each sample at 425°C to remove any organic carbon, and having the residue analyzed to Total Combustion using a Carbon-Sulphur analyzer. The Carbon-Sulphur analyzer used was a Leco CS632.



## **QA/QC Sample Results**

A total of 18 certified reference materials ("CRMs" or Standard) were inserted into the sampling stream. The standard, CDN-GR-1, was sourced from CDN Resource Laboratories Ltd. located in Langley, British Columbia, Canada. This CRM has a certified value of 3.12% TGC  $\pm 0.11$ . Of the 18 standard submissions, 66% reported well within the acceptable limits whilst 6 assayed lower than the deviation.

A total of 18 duplicate samples were inserted into the sample stream. All the duplicate samples have less than a 5% error in the analytical procedure, implying that the assaying laboratory has excellent repeatability.

# 1.10.3.Sample Security

DMT geologists took custodian of the core samples from QAQC sampling, transportation, and submission to the laboratory. At the drill rig, the drilling contractors under the supervision of the Pula Geologist, were responsible for removing the core from the core barrel (using manual methods) and placing the core in prepared core trays (1 m length). The core was, initially, cleaned to remove drilling additives, but attempts were made to ensure that fine material was not lost. Once completed, the geologists took ownership. DMT's geologists were responsible for transporting the samples to the ALS laboratory in Johannesburg. Upon receipt at the sample preparation facility, ALS checked that the samples received matched the work order and signed that it had accepted the samples. Once the sample preparation was completed, the laboratory dispatched the sample pulps by DMT geologist to DMT's offces in Johannesburg.

# 1.11. Data Verification

Data submitted by Pula was reviewed and validated by DMT. The DMT geologists conducted a site visit to the core yard to verify the recovered core and establish project sampling protocols. A stringent QA/QC program was also adopted for the sampling program. The borehole database was checked for data quality, assay results precision and accuracy by the QP. Logging and sampling of the diamond boreholes was carried out according to acceptable industry standards to ensure the data can be used in a future compliant Mineral Resource Estimate.

As part of the study to attain an NI43-101 compliant Mineral Resource Estimate, DMT completed a detailed validation of the data used to generate the geological model and Mineral Resource. This validation included:



- Site visit by the DMT team.
- Spatial verification of the geographic reference system for the topography, and the Pula Graphite Project, hence Spatial verification between the surface collars and the surface topography of the Project was established and verification of any anomalous deviations from survey data.
- Validation of duplicate coordinates and/or anomalous height values outside the topographic surface.
- Consistency between the TGC data reported in the assay table versus the laboratory certificates.
- Search for duplicate or abnormal records in the various tables of the database, and QA/QC.
- Verification of the reported values of TGC in the modelling compounds, and their correspondence in the resource model.
- Verified the quality of geological and sampling information and developed an interpretation of TGC grade distributions appropriate to use in the resource model.
- Reviewed the QA/QC database for the recent drilling sampling programs.
- Sample preparation and assaying laboratory visits to ALS in Johannesburg by the DMT Project Geologist.

### 1.12. Mineral Processing and Metallurgical testing

Although no new metallurgical study was conducted in 2023, Pula previously commissioned metallurgical and flake size evaluation and these tests were carried out in **2017**. The laboratory analysis was conducted by **African Minerals and Geosciences Laboratory** in Kinondoni, Tanzania, which is ISO 9001:2008 certified.

The objective of the study was to evaluate flake size and, to a limited extent, extractive metallurgy and to advance the characterization of the potential value of graphite deposits associated with the two tenements. TGC and elemental composition were assessed with metallurgical and flake-size evaluations.

Test results show graphite is abundant. The 36 samples' average carbon content is 9.5%, which exceeds economically viable resources in Tanzania (7–8%) and the world (2–4%). 22% of samples exceed 12% carbon. The deposits in PGP's holdings are shallow—less than 200m. The float fraction for each sample represents the amount of graphite that was recovered in the float fraction as concentrated, while the sink fraction represents the fraction of the sample that was recovered as tailings (mainly silica sand).



Furthermore, flake sizes are predominantly 300 microns. There is a small fraction in the 500-micron size and a smaller fraction below 300 microns. It should be noted that these samples were collected from near surface weathered zones (oxidized zone). Weathered zones include secondary minerals such as clay minerals, kaolinite. The latter tend to split graphite flakes. Generally, samples collected at depths beneath the weathered zone contain larger, un-impacted flakes, although studies from drilling samples will establish flake size at depth. Sample results clearly show that the graphite resource is, even in the weathered state, flaked and of carbon content suitable for industry, particularly for the battery industry. Importantly, the flake sizes associated with Pula tenements are larger than those identified in the neighbouring Magnis project. Further studies from drilling samples will prove that indeed the flake sizes on the oxidized zones extend further at depth in fresh rocks. In addition, because sizes may be reduced due to weathering, samples collected at depth from fresh rocks will contain better flake sizes.

# 1.13. Mineral Resource Estimates

DMT prepared a Mineral Resource Estimate in accordance with NI 43-101 for the Pula Graphite Project, which included drilling (RC and DD) completed in 2023; for which the drill hole data could be confidently confirmed. The classification of the resource is based upon the ranges observed in the variogram models and the number of the drill hole composites that went into estimating the blocks.

The results disclosed in this Report are graphitic carbon Mineral Resources estimated to be contained within different lenses of considerable thickness, relatively homogenous and discontinuous present in several different lithologic units in the Pula Graphite prospects.

DMT released the Mineral Resource Estimate on the 23 April 2024. The results are tabulated at various TGC thresholds and are presented below for Measured, Indicated and Inferred Mineral Resources (Table 5).

#### Classified Resources stated below at cut-off grade of 3.0% TGC:

- The Pula Graphite Project has a compliant **Measured Mineral Resource** of 7.2Mt grading at 5.81% TGC.
- The Pula Graphite Project has a compliant **Indicated Mineral Resource** of 44.1Mt grading at 5.89% TGC.
- The Pula Graphite Project has a compliant **Inferred Mineral Resource** of 93.5Mt grading at 6.72% TGC.



### Table 5: Pula Graphite Mineral Resources at various cut-off % of grades TGC as at 1 March 2024

MEASURED		INDICATED		INFERRED			
TGC Cut off (%)	Tonnes (Mt)	% TGC	Tonnes (Mt)	% TGC	TGC Cut off (%)	Tonnes	% TGC
0.00	9.8	4.74	57.8	4.98	0.00	130.1	5.29
1.00	9.4	4.95	56.2	5.12	1.00	119.2	5.74
2.00	8.7	5.25	52.7	5.35	2.00	111.7	6.03
3.00	7.2	5.81	44.1	5.89	3.00	93.5	6.72
4.00	4.6	7.09	30.8	6.93	4.00	70.1	7.78
5.00	2.7	9.01	19.3	8.40	5.00	52.9	8.87
6.00	2.1	10.01	15.1	9.22	6.00	43.8	9.60
7.00	1.6	11.06	11.7	10.02	7.00	35.2	10.34
8.00	1.3	11.96	8.7	10.89	8.00	25.7	11.38
9.00	1.0	12.73	6.0	11.93	9.00	15.4	13.32
10.00	0.75	13.92	4.4	12.85	10.00	11.8	14.44



It is reasonably expected that most of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Quantities and grades in the Mineral Resource Estimate are rounded to an appropriate number of significant figures to reflect that they are estimations. Slight differences may occur due to rounding.

#### Notes:

- 1. Mineral Resources are reported in accordance with the National Instrument 43-101 Standards of Disclosure for Mineral Project (NI 43-101).
- 2. Cut-off grade of 3% was applied; typically applied in graphite projects in the same vicinity of the Pula Graphite.
- Volumes were converted into tonnes using a static value of 2.7. This mean value was derived from 51 separate SG measurements completed at Bureau Veritas Laboratory in Johannesburg, South Africa.
- All Mineral Resource Estimates figures reported in the table above represents estimates as of 23 April 2024.
- 5. These Mineral Resource estimates are 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 tables above have been rounded to reflect the relative uncertainty of the estimates.
- 6. TGC = Total Graphite Content

# 1.14. Mineral Resource Valuation

Bowline Professional Services (Pty) Ltd (Bowline) was appointed by Pula to conduct a mineral asset valuation of the Pula Graphite Project located in the Lindi region of the Ruangwa District in Tanzania.

The valuation report was prepared in accordance with the standards and guidelines as prescribed in the recognised code for the valuation of mineral properties known as "The CIMVal Code. The valuation report was prepared by Mr Breton Scott, an independent consultant working for Bowline Professional Services (Pty) Ltd, which is an independent mining and mineral project development firm based in Johannesburg, South Africa.

The main purpose of the valuation report was to provide Pula with an updated value of the PL 12456/2023 prospecting license based on the recent upgrade of the mineral resource estimation emanating from additional exploration drilling conducted during 2023.

The valuation report was concluded 27 March 2024; and the valuation date is effective as of 1 March 2024.

The license area is approximately 19 km north of Ruangwa Town itself. The following figure shows the locality of the prospecting license within the Lindi Region:





Figure 2: Project Licenses' Location

#### **Basis of Value**

The valuation report was prepared based on determining a fair market value for the prospecting license PL 12456/2023. Two valuation approaches were adopted, with the **Market Approach** being the primary valuation approach and the **Income Approach** as the secondary valuation approach.

#### Scope of Work

The valuation evaluated all the material information provided to the Qualified Valuator in terms of the current project development status as well as information projecting future operational performance emanating from early-stage feasibility studies.

#### **Mineral Resources and Mineral Reserves**

DMT released the Mineral Resource Estimate on the 29<sup>th</sup> February 2024. The Classified Resources stated below are estimated as values above a minimum cut-off grade of 3.0% TGC:

- Measured Mineral Resource of 7.2Mt grading at 5.81% TGC.
- Indicated Mineral Resource of 44.1Mt grading at 5.89% TGC.
- Inferred Mineral Resource of 93.5Mt grading at 6.72% TGC.



#### Valuation

With regards to the market comparable methodology, Bowline was able to source information regarding several comparable mineral property transactions from the public domain and from Bowline's database. Bowline consolidated the applicable data for comparison and was able to determine a weighted average price per tonne of graphite ore per percent of graphite grade (TGC).

With regards to the discounted cashflow methodology, Bowline developed a technical economic model to simulate the future operation's performance and related that back to a project value.

# Valuation Conclusion

Emanating from the two sets of valuations conducted, i.e. market approach and the income approach, the valuations ranges can be summarized as follows:

Mineral Property Valuation	Low -25%	Base	High +25%
Market Approach (Market Comparables methodology)	\$137 400 000	\$161 646 000	\$202 059 000
Income Approach (DCF methodology)	\$ 122 415 000	\$ 144 018 000	\$ 180 022 000

#### Table 6: Summary of Valuations' Results

When comparing the results from the two valuation approaches, it was found that there is a minor variation of approximately 12%. Therefore, Bowline was comfortable applying an average of the two approaches and presenting the final valuation results as follows:

#### Table 7: Final Valuations' Results

Mineral Property Valuation	Low: -25%	Base	High: +25%
Valuation Average Results	\$129 900 000	\$152 800 000	\$191 300 000



# 1.15. Conclusion

The objective of the Report was to prepare an independent NI 43-101 Technical Report, capturing historical information and data available about the current Property that comprises the Pula Graphite Project, Tanzania, and making recommendations for future work on the Project.

Geologically, the study area is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists. Structural trends within the Usagaran system are mainly north - south and host deposits such as gold, nickel, copper, gemstones and the highest-grade coarse graphite flakes.

Based on the Property's favourable location within the Neoproterozoic Mozambique Mobile Belt (NMMB) and the exploration potential for finding additional graphite mineralization within the Property (i.e. Pula Graphite Deposit), the Project presents an excellent opportunity to expand current Mineral Resources and to grow graphite resources and make additional discoveries of graphite mineralization. Characteristics of the Pula Graphite Deposit are of sufficient merit to justify additional surface exploration work, metallurgical and mineralogical studies, further drilling, and updated Mineral Resource estimations with the view to undertaking preliminary engineering, environmental, and metallurgical studies aimed at further characterizing the graphite mineralization and offering economic guidelines for future exploration strategies (i.e. a Preliminary Economic Assessment).

#### 1.16. Recommendations

It is the QP' professional opinion that additional exploration expenditures are warranted on the Pula Graphite Project and include diamond drilling. This is aimed at upgrading the resource confidence [i.e. Inferred to Indicated and Measured] through infill drilling within the Pula License and expanding resources (Inferred category) along the strike, through processing and metallurgical test work (necessary to fully understand the extractability of the graphite within Pula Graphite project), and environmental baseline studies. The aim of this program is to complete the work necessary to move the Project into Preliminary Economic Assessment (PEA) stage.



# 1.17. Risks and Uncertainty

Risks and uncertainties that may reasonably affect reliability or confidence in future work on the project relate mainly to the reproducibility of exploration results (i.e., exploration risk) in a future production environment. Exploration risk is inherently high on any early-stage project; however, these risks are mitigated through the completion of surface geological and structural mapping, trenching, and sampling programs, appropriately spaced drill holes to build higher levels of confidence in the resources, and mineral processing and metallurgical test work. Thus, the business depends upon, amongst other things, successful prospecting programs, and competent management.

External risks that apply to all exploration projects (e.g. market fluctuations, changes in metal prices, exchange rates, availability of investment capital, changes in government regulations) are beyond the explorer's control, and unforeseen changes in operating conditions and technical issues can have an impact on profitability and asset values. Majority of these factors are, and will be, beyond the control of any operating entity.

The Authors are not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the Property.



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# 2. INTRODUCTION

The Pula Group requested that DMT Kai Batla ("DMT") complete a NI43-101 compliant report on the Mineral Resource of the Pula Graphite Project located in southern Tanzania. DMT Kai Batla, a South African consulting company, has prepared the technical report on the Pula Graphite Project in accordance with the disclosure and reporting requirements outlined in the Canadian Securities Administrators' National Instrument 43-101, Companion Policy 43-101CP, and Form 43-101F1 (30 June 2011 and amendments 25 February 2016). Furthermore, DMT has conducted the Mineral Resource estimates based on the data acquired prior to and during DMT's involvement, relying on resource drilling data obtained in two campaigns conducted in 2018 and 2023. The data was acquired only within the Prospecting License number PL10332/2014 (Figure 4), covering an aerial extent of 15.17 km<sup>2</sup>. Pula graphite is an extension of the graphite schist in Magnis'Nachu Graphite Project.

On July 4 and 5, 2023, DMT sent a team of experts, including Kagisho Nondwangu (Pr Sci Nat, #400025/15) and Thabang Phakoe (Pr Sci Nat, #008859), to visit the projects during the drilling program. The scope of the visit was to verify and ensure exploration is conducted as per standard operating procedures, verify property data and the team studied the area's physical characteristics, geology, and value-add data. A few natural peripheral observations helped create an opinion on the property to acquire geological information and evaluate the exploration drilling program. Evaluation of the drilling program was necessary since the data gathered is critical to Mineral Resource categorization accuracy. Subsequent to studying the area's physical conditions and geology, the team collected valuable data for the Mineral Resource technical report and on the 11<sup>th</sup> July 2023, Pula Graphite Group received a thorough site visit report with recommendations.

### 2.1. Purpose of the Technical Report

This report was prepared as an NI 43-101 Mineral Resource Estimate and Technical Report to estimate Mineral Resources based on all available information delineated to date on the Property owned by Pula Graphite Group. Furthermore, the report has been prepared in accordance with the guidelines provided by NI43-101 reporting guidelines. The Competent Person responsible for this report is Mr. Dexter S. Ferreira, a senior geostatistical and associate mining engineer for DMT Kai Batla.



# 2.2. Scope of Work

The scope of work undertaken by DMT involved undertaking the QA/QC of the drilling and sampling program to ensure compliance with NI 43-101 and confirm drilling and sampling protocols, creating geological model and conduct a Mineral Resource estimate based on all available information up to April 2024, for the Pula Graphite Project. Furthermore, update the Pula Graphite Group CPR dated 3 May 2018.

# 2.3. Effective Date

The effective date of this Competent Persons Report is 23 April 2024.

# 2.4. Qualifications of Consultants

This report has been prepared based on a technical review and preparation of Mineral Resource estimates by DMT-KB. Mr. Ferreira is a senior geostatistician with over 25 years' experience in project evaluation internationally, including extensive involvement with mineral projects throughout Africa, Asia, South America, and North America. He is a member of the South African Council for Natural Scientific Professions, and qualifies as an 'Expert', 'Qualified Person' and 'Competent Person' as defined in National Instrument 43-101 and the JORC Codes respectively.

Thabang Phakoe is a Geologist with over 10 years' experience in the mining and minerals field. His key area of expertise lies in the technical elements of mining inclusive of exploration, production, Mineral Resource estimations and quality control. He is a member of the South African Council for Natural Scientific Professions, and the Geological Society of Southern Africa.

The Author and Co-Authors employed in the preparation of the Report have no beneficial interest in Pula Group and are not insiders, associates, or affiliates of Pula Group. Furthermore, DMT have not, and have not previously had, any material interest in The Pula Group or any of the mineral properties in which The Pula Group has an interest. The relationship with The Pula Group is solely one of professional association between client and independent consultant.

The results of the Report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between Pula Group and the Consultants. This report is prepared in return for professional fees based upon agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.



# 2.5. Site Visit (Consultant Inspection)

At the request of the Pula, DMT sent a team of experts which included Thabang Phakoe (Pr Sci. Nat, #008859) and Kagisho Nondwangu (Pr Sci Nat, #400025/15) to conduct a site visit to the projects during the drilling program, on the 4<sup>th</sup> and 5<sup>th</sup> July 2023. During the site visit, DMT team also met with Dr Mimi Stith and Mr Yusuph Karim Mmbaga (Pula Geologist) to discuss various aspects related to the Project. A site visit was used to validate information and data on the property of reporting. Several natural peripheral observations were made which helped form an opinion on the property, which in this context, was to gather geological information and assess the standard to which the exploration drilling program was conducted. It was vital to evaluate the execution of the drilling program because the data to be acquired plays a crucial role in the accuracy of the Mineral Resource classification. The guideline used by DMT experts during the site visit followed the requirements for fulfilling a compliant resource estimation through ensuring compliance with the RC and DD coring procedures. The team examined the physical conditions of the area, developed a geological understanding, and acquired pertinent data of value-add to the Mineral Resource Technical Report before developing it as per the DMT-Pula service contract. A detailed site visit report detailing observations and recommendations were issued to Pula on the 11<sup>th of</sup> July 2023. The team examined the physical conditions of the area, developed a geological understanding, and acquired pertinent data of value-add to the Mineral Resource Technical Report.

### 2.5.1. Disclaimer

DMT has not independently conducted any title or other searches but has relied upon Pula for information on the status of the claims, property title, agreements, and other pertinent conditions. The Mineral Resources presented in this Technical Report are estimates based on available sampling and on assumptions and parameters available to the authors. Comments in this Technical Report reflect DMT's best judgement considering the information available.



# 3. RELIANCE ON OTHER EXPERTS

The Report has been prepared by DMT Kai Batla for the Issuer, Pula Graphite Group. The information, opinions and conclusions contained herein are based on:

- Information available to DMT and its authors at the time of preparation of this report.
- Assumptions, conditions, and qualifications as set forth in this report.
- Data, reports, and other information supplied to DMT, by Pula.
- PGP Graphite Flake Size Analyses Report, by Mr. Yusuph Karim Mmbaga.
- Total Graphitic Content assays from original assay datasheets, geologic logs, and reports.
- Mineral Reserve Valuation report by Bowline Services



# 4. PROPERTY DESCRIPTION, LOCATION AND OWNERSHIP

The Pula Graphite study area is located within QDS 2833 (Matandarwe) approximately 20km north of Mbekenyena town and 80 north of the Nachingwea airport within the Lindi Region, Ruangwa District in the southeastern part of Tanzania. Nearby settlements include Chunyu and Matambare, which are approximately 6km west of the study area.

# 4.1. Ownership

The Pula Graphite Project is within the Prospecting Licence 10332/2014 and has been granted to Pula Graphite Partners with the corporate structure shown below in Figure 3 below.



Figure 3: Pula Graphite Group company structure and PL10332/2014 ownership.

# 4.2. Prospecting Licence

Table 8 and Figure 4 below shows the licence boundary coordinates with the latitude and longitude data.

SN	Latitude	Longitude	SN	Latitude	Longitude
1	09° 53´30,00"	38°55′0.00"	5	09°49′0.07"	38°55′0.00"
2	09° 53′30.00"	38°54′0.00"	6	09°49′0.25"	38°54′58.91"
3	09°48′58.40"	38°54′0.00"	7	09°51′24.29"	38°55′0.00"
4	09°48′58.40"	38°55′0.00"			

 Table 8: Prospecting License number PL10332/2014 coordinates
# Pula Graphite – Prospecting License





Figure 4: Pula graphite prospecting license.

# Pula Graphite – Prospecting License Number PL10332/2014





Note:

 Prospecting license number PL10332/2014, located within QDS 283\_3 (Matandarawe), covers an area of 15.17km<sup>2</sup>.

Its boundary is defined by the coordinates shown in

#### Figure 5.

2. The Nachu Project is located to the southwest of PL10332/2014.

Figure 5: Pula Graphite Prospecting Licence (PL10332/2014).



#### 4.3. Accessibility

The site is located within the Matandarwe region approximately 20km North of Mbekenyane town within the Ruangwa District, Lindi region. It can be accessed from Dar Es Salaam via B2, Lindi region to Ruangwa. The area is nearby Mtwara which is approximately 200km away from Ruangwa. (Figure 6) indicates access roads leading to Project site.



Figure 6: Access Road leading to project site.



#### 4.4. Climate and Vegetation

The district of Lindi is characterized by a tropical savanna climate (latitude 39.6982485 and longitude -9.9876076) at an altitude of 107.19 meters above sea level Figure 7). The yearly temperature of the region is 26.74°C with a record high and low of 34.0°C and 18.0°C, respectively. December is the warmest month (28.4°C) and July is the coldest month (24.68°C). The region receives 177.09 mm of rain in a year on 177.19 days. It can get dry for 187.81 days annually with average relative humidity of 77.89% and 11.25 yearly average hours of sunshine, in which there are 123,98 hours of sunshine in a year.



#### Note:

- Ruangwa (project location), one of the districts of Lindi region, is located at an elevation of 340.24 m above sea level.
- Yearly temperatures 29.17°C with a daily mean maximum of 31°C and daily mean minimum of 17°C.
- Precipitation to indicate wet and dry days are estimated as wet above 150mm and dry below 30mm.
- 4. The months from December to March are considered wet and March is where the maximum precipitation occurs with 120mm.
- 5. The months from May to November are dry with the minimum precipitation up to 5mm.



## 4.5. Local Resources and Infrastructure

The study area is sparsely populated and to the west and east, it is bordered by Matambarare and Nandandala villages respectively. There are other villages such as Namtamba, Moro and Mpenzi and potentially associated developments such as schools and shops, etc. Infrastructure such as this may need to be relocated to some extent upon the project proceeding to the phase of mine development.

Most of the villagers are currently engaged in agricultural activities which include growing cashew trees, mangoes, sesame, maize, sorghum, and vegetables. At the time of the most recent site visit (June 2017), no mining activity or processing infrastructure had developed. In terms of graphite processing infrastructure, a graphite processing plant at Lindi Jumbo Graphite mine proposes a capacity to process 300,000Uy of ore with a TGC grade of 16%. The processing plant is designed with a graphitic carbon recovery rate of approximately 85%. Mtwara city along the east coast of Tanzania is the closest regional centre to the project which has both a port and airport which are suitable for export of graphite concentrate. In addition, Nachingwea airport is located to the south of the project area.

#### 4.5.1. Physiography

The study area is located on an undulating plain between relatively flat topography to the Northwest and hills to the southeast (Figure 8). The elevation within the study area ranges from approximately 161masl in the north to 224masl in the southeastern portion. The Mbwemburu River cuts through the study area in the northwestern corner, where it flows from the west towards a north easterly direction, and further downstream toward the Indian Ocean.

# Pula Graphite – Satellite map showing the physiology of Ruangwa





Figure 8: Satellite map showing the physiology of Ruangwa.



# 5. HISTORY

## 5.1. Exploration History

#### 5.1.1. Neighbouring exploration history

The **Lindi Jumbo Mine**, in the same geographic region as the Pula Graphite deposit, is found in the geological Palaeoproterozoic Usagaran belt. Graphite mineralization occurs within the graphite gneisses and schists. In February 2017, the Lindi Jumbo Project released a feasibility study with a proposed open-pit mining method (due to its low strip ratio and ore outcrops at the surface) and a processing plant at the mine. In this case, the estimated life of the mine is 20 years, with an expected average production capacity of 260,000 tons a year of ore at 16% TGC for a total of 40,000 tons per year of graphite in concentrate. Measured and indicated resources comprise 40% of resources, estimated at 6.4Mt and 5.5Mt graded at a TGC of 12.2% and 11%, respectively, and contain a total of 1.38Mt of graphite. The mine comprises three very high- grade domains, with the highest-grade domain containing 4.7Mt of ore at an average TGC grade of 22.8% (1.07Mt of graphite).

#### 5.1.2. Project study exploration history: Pre-2017

Exploration work has occurred within the vicinity of the study area and included studies such as geological mapping, soil geochemistry, IP dipole-dipole, magnetic surveys, trenching and drilling for graphite and gold. These studies have proposed that the region has significant quantities of graphite according to *The Pula Group - Tanzania, 2016*. Furthermore, the studies indicated that graphite occurrences are in the form of graphite schist and are coarse flake, high grade graphite ores. This ore ranges from 3% to 5%, 5% to 18% and 25% to 50% carbon content. Massive graphite ore deposits are hosted in 2 major blocks of graphite. Each of these blocks' hosts approximately 40Mt to 50Mt of graphite ore, of which more than 50% is high grade material with big flakes. Both blocks have an approximate conceptual non-JORC3 graphite ore deposit of 100Mt.

#### 5.1.3. Project study exploration history: 2017

On July 9, 2017, Pula commissioned additional project area research managed and assesses by Chief Geologist Yusuph Karim Mnnbagal. The tasks carried out are tabulated in Table 9. The purpose was to ascertain and measure graphite mineralization continuity along strike and down dip, mineralogical composition, mineralized domains, TGC%, flake size, and deleterious minerals or elements. All samples, collected at 1m intervals, were packed, marked, and sampled according to DMT guidelines.



Table 9: Summary of Historica	I Exploration - 2017
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Task	Area	Number of samples	Comments
Shallow grab	PL10327/2014	12	-
ş	PL10332/2014	24	-
Trenching	PL10332/2014	30 trenches (Approximately 1023m 491 samples)	Each trench mapped across, and various rock types were distinguished, and samples taken at approximately 1.0m intervals by creating a trough parallel to the trench. Observations made regarding trenches indicate that, oxidation does extend beyond 5.0m in depth and it is rare to get fresh graphitic schist at shallow depths.
RC drilling	PL10332/2014	9 drillholes (630 samples)	carried out to confirm continuity of graphitic schist, both down dip and along strike, reported in previous mapping program

#### 6.1.3.1 Quality Assurance and Quality Control (QAQC) – Sampling Procedure.

An assaying QA/QC protocol was applied to the Pula Graphite samples, which involved repeats from preceding sample batches, certifiable and commercially available standard reference material ("CRM") and "blank" samples derived from acceptable source lithologies known to contain negligible quantities of contaminant elements. These were inserted into the sample stream to check for laboratory accuracy, precision, and cross-contamination.

#### **Certified Reference Material - Standards.**

The standard, CDN-GR-1, was sourced from CDN Resource Laboratories Ltd. located in Langley, British Columbia, Canada. This CRM has a certified value of 3.12% TGC  $\pm 0.11$  and its assay results from ALS laboratory are shown as dots in Figure 9.





Figure 9: %TGC Original CRM versus Replicated CRM

A total of 10 CRMs" or Standard were inserted into the sampling stream. The author believed the standard findings were acceptable considering 70% of the 10 standard submissions were well within acceptable limits and 3 were near to the lower limit.

#### **Duplicates and Blanks**

Eleven duplicate samples were added to the sample stream. The analytical method error was less than 5% in 81% of these samples. One sample had less than 15% analytical error, whereas the other had 40%. Duplicate sample analyses showed a broad range of values, indicating UGC laboratory precision. DMT found that laboratory duplicate analysis precision and accuracy errors do not affect resource estimating assays. The sample stream received 1 blank sample for every 20 samples sent to the lab at regular intervals. In its own QA/QC procedures, the lab added blank material for analysis to the sample stream. Eleven (11) blank samples were added to the sample stream. Five samples had a TGC value of <0.05% (Bureau Veritas' detection limit), while the other six had readings between 0.06% and 0.10%. The Competent Person found laboratory precision adequate.

#### 6.1.3.2 Geochemical Analysis – Sample Security

The Bureau Veritas Laboratory in Johannesburg, South Africa, was used for analysis of the samples. A Carbon-Sulphur analyzer was used to measure TGC after removing carbonate material with hydrochloric acid, roasting each sample at 425°C to eliminate organic carbon, and analysing the residue for Total Combustion. The Leco CS632 Carbon-Sulphur analyzer was utilised.



## 5.2. Metallurgical Testing and Mineral Processing

The objective of the study was to evaluate flake size and, to a limited extent, extractive metallurgy and to advance the characterization of the potential value of graphite deposits associated with the two tenements. Geologist, Yusuph Karim Mmbaga<sup>1</sup> coordinated the current study and flake analysis and interpreted the findings. ISO 9001:2008-certified African Minerals and Geosciences Laboratory in Kinondoni, Tanzania, analysed the samples. TGC and elemental composition were assessed with metallurgical and flake-size evaluations.

Test results show graphite is abundant. The 36 samples' average carbon content is 9.5%, which exceeds economically viable resources in Tanzania (7–8%) and the world (2–4%). 22% of samples exceed 12% carbon. The deposits in PGP's holdings are shallow—less than 200m. Furthermore, eight (8) samples were prepared for flotation and sieve analysis by compositing samples collected from specific prospective zones as outlined below.

PLR037: PLR013+PLR014+PLR015+PLR016	PLR041: PLR029+PLR030+PLR031+PLR032
PLR038: PLR017+PLR018+PLR019+PLR020	PLR042: PLR033+PLR034+PLR035+PLR036
PLR039: PLR021+PLR022+PLR023+PLR024	PLR043: PLR002+PLR003+PLR004+PLR005
PLR040: PLR025+PLR026+PLR027+PLR028	PLR044: PLR001+PLR008+PLR009

#### 5.2.1. Test Work and samples Preparation.

The eight composite samples of graphite ore (8kg each) were subjected to froth flotation testing. In addition, the floats were passed through sieves with different aperture sizes to identify flake size. Preparation of the samples involved particle size reduction. To preserve graphite flakes in their original size, the samples were stage crushed using jaw and roll crushers. The jaw crusher reduced the sample to -2cm followed by the roll crusher, which reduced it to -2.6mm. From the roll crusher the samples were sieved without any milling using a 600-micron sieve to obtain enough samples for flotation tests.

#### 5.2.2. Flotation Work

Flotation tests were conducted using a WEMCO laboratory flotation machine. Float and sink products were filtered and their filter cakes dried at 105°C in a laboratory oven for 8 hours. The dried products weights were recorded. Average test conditions and reagent concentrations used for the flotation test are shown in Table 10.

<sup>1</sup> Yusuph Karim Mmbaga's earned a BSc. (Hons) in geology from the University of Dar es Salaam (Tanzania) in 1986 and holds a post graduate diploma in Mineral exploration from IT Delft (The Netherlands). He is a Member of the Geological Society of Tanzania.



РН	Collector (Kerosene)	Depressant (Sodium Silicate)	Frother Conditioning (Pine Oil) Time		% Solids By Weight	
7	300g/t	500g/t	150g/t	10 mins	15% – 20%	

#### Table 10: Flotation tests conditions

## 5.2.3. Particle Size Distribution (PSD) Analysis

Particle Size Distribution (PSD) analysis was conducted on the float products (concentrates). A representative portion from each dried float product was cut and sieved through 500, 300, 180,150, and 106-micron sieves to obtain particle size distribution of the flakes. After sieving using an Octagon 200 sieve shaker, each sieve fraction was weighed, and the weight recorded.

#### 5.2.4. Results

#### Flotation Test Work Results

The float fraction for each sample represents the amount of graphite that was recovered in the float fraction as concentrated, while the sink fraction represents the fraction of the sample that was recovered as tailings (mainly silica sand) (Figure 10).

#### **Particle Size Distribution Results**

Flake sizes are predominantly 300 microns. There is a small fraction in the 500-micron size and a smaller fraction below 300 microns. It should be noted that these samples were collected from near surface weathered zones (oxidized zone). Weathered zones include secondary minerals such as clay minerals; kaolinite. The latter tend to split graphite flakes. Generally, samples collected at depths beneath the weathered zone contain larger, un-impacted flakes, although studies from drilling samples will establish flake size at depth. Sample results clearly show that the graphite resource is, even in the weathered state, flaked and of carbon content suitable for industry, particularly for the battery industry. Importantly, the flake sizes associated with Pula tenements are larger than those identified in the neighbouring Magnis project. Further studies from drilling samples will prove that indeed the flake sizes on the oxidized zones extend further at depth in fresh rocks. In addition, because sizes may be reduced due to weathering, samples collected at depth from fresh rocks will contain better flake sizes. The following figures represent the percentage distribution of the carbon flakes in each of the samples. The bar charts (right axis) indicate the percent of flakes for each in each of the samples, whilst the line graphs (left axis) indicate the cumulative percentages of undersize and oversize flakes, respectively; see Figure 11 to Figure 14.





Figure 10: Sample Float Fractio







Figure 11: The cumulative percentages of undersize and oversize flakes per sample (PLR037 – PLR038)







Figure 12: The cumulative percentages of undersize and oversize flakes per sample (PLR039 – PLR040)







Figure 13: The cumulative percentages of undersize and oversize flakes per sample (PLR041 – PLR042)











### 5.3. Mineral Resource Estimates

Pula requested that DMT compliantly estimate the TGC Mineral Resources for their Pula Graphite Project located in southern Tanzania. This section will present an overview of the methodology used and results obtained from creating the April 2018 Mineral Resource model for the Pula Graphite Project. The client furnished DMT with data in the form of Excel TM spreadsheets. The spreadsheets received include Drillhole collars, Assays, Lithological logging codes, Drillhole surveys, and Specific gravity measurements.

In addition, 30 cross-sections showing the geological and structural interpretation were received in PDF format for the entire trench mapping. Recall that trenching and drilling only occurred in Zone A and partially in Zone B. The data was reviewed to ensure no zero grades and other erroneous data, such as negative grades. Drillhole numbering was checked to ensure no duplication of collar identifiers (i.e., BHID). No issues were discovered with data location. The lithological coding was merged with the assays. The final sample file was then de-surveyed as three-dimensional drillholes within Studio 3.0TM.

#### 5.3.1. Geological Modelling

Wireframes were constructed using the lithologies mapped along the trenches using the verified data as received. Each mapped trench, in native PDF format, was imported into AutoCAD<sup>™</sup> and appropriately stitched together to complete the entire trench. Once complete, each AutoCAD<sup>™</sup> file was appropriately scaled as indicated on the PDF documents. Vectors were then drawn (digitized) on each trench section to individually model the following three lithologies: Graphitic schist ("GSC"), Disseminated graphic schist ("DGSC"), and Barren pegmatite.

The individual files were subsequently manipulated to change their coordinate system from a sectional view (looking directly at a cross-section) to a plan view. The adjusted files were then imported into a final AutoCAD<sup>™</sup> drawing and exported as a DXF file. This file was subsequently imported into Studio 3.0TM. The sections were extended 1000m down-dip at a static angle of -45° to ensure that there would be sufficient volume for block-filling during the estimation phase. The dip angle was taken as the mean dips measured in the field and shown on the trench maps.

#### 5.3.2. Statistical Analysis- Naïve Statistics

A complete set of naïve statistics was performed on the drillhole database that was contained within the following limits: 8912200N and 8915200N, 489300E to 491400E, and -850E1 to 300E1.The statistics looked into the characteristics of TGC grade values as original samples. When the data was imported into GSLIB3, missing samples were treated as -1.0 (*the notation in GSLIB*). There were no zero values in the database. The un-composited dataset reveals fairly low coefficients of correlation which indicate low degrees of variability, especially for the trench samples.



## 5.3.3. Compositing

A separate set of statistics was done on the sampling lengths. The sampling length has a mean length of 1.0m with a median value of 1.0m. Therefore, the samples within the wireframe were composited (downhole and along each trench) at 1.0m intervals. The composited data was then compared to the original sample data to assess whether the compositing process had changed the population characteristics of the original sample set. It was therefore evident that, although slightly increasing the sample population by almost 6%, the trench mean value has increased insignificantly.

A swath plot was generated to examine and compare the composites to the original samples. Various trends are checked: Northings versus TGC grades, Eastings versus TGC grades, and Elevation versus TGC grades. The idea here is that whatever trends are present within the original dataset must also be reflected in the composites.

#### 5.3.4. Sample Spacing

The Euclidean spacing between samples was examined. Overall, the distances typically are about 80m; which is the drill spacing grid. A block size of 10.0m x 10.0m x 2.0m (XYZ) was chosen to discretize the block-model at Pula. This dimension is based on not having any more than 4 unsupported blocks in between 2 supported blocks (blocks pierced by drillholes). Ideally the block sizes should be bigger in the Y and Z directions, but the narrow 2.0m dimensions were chosen in order to better discretize the orebody going perpendicularly through the deposit and down the dip of the deposit.

#### 5.3.5. Grade Cutting/Outlier Limits

Cutting statistics were performed with the help of cumulative log probability plots, indicator correlation for lag 1 plots, coefficient of variation plots and finally percent metal contained plots. It should be noted that these are merely guidelines and that ultimately, the cutting limit chosen is a grade limit suggested by these plots.

The indicator correlation for lag 1 plots shows the correlation between samples for the first lag set. Plotting this indicator against increasing minimum thresholds for TGC values leads to a line tending closer towards zero. In other words, at ever increasing thresholds of TGC grades, there are fewer and fewer samples of similar grade. At this point, it indicates a lack of correlation between samples within the first lag set and suggests an ideal cutting limit for assay values. The coefficient of variation plots shows the change in this coefficient with increasing TGC values. A rapid change in this coefficient with increasing TGC values. A rapid change in this suggests an ideal cutting limit for a change in the mean. This suggests an ideal cutting limit for TGC values. Kinks, plateaus and/or changes in the cumulative log probability plots also suggest changes in populations (perhaps subpopulations) and serve as a good indicator of cutting limits for TGC values. A slightly different plot is the percent of contained metal in samples versus increasing trimming levels for metal grades. This plot enables one to check how much metal is



being lost to cutting at a certain TGC value threshold. Once performed, all plots indicated that there was no need to trim TGC values back to any threshold.

#### 5.3.6. Variography

The models were estimated using data only contained within the defined limits. Pairwise relative variograms were used in this study; therefore, no data transformation was necessary. There is some argument that this variogram is not a valid covariance model and should not be used for estimation, although in many practical applications this structural measure has been used as a variogram. Some consider that mixing all data together maximizes the variability of the data set and subsequently reduces the chances of deriving an interpretable variogram structure. This practice necessitates the use of non-linear transforms such as the pairwise relative variogram, to derive a measure of the spatial variability of grades. Logically, segregating the deposit into stratigraphically distinct entities should reduce the variance within the data subsets allowing better and more appropriate local variograms to be developed for each of the entities modelled. This process is aimed at further reducing the risks inherent in the estimation process. The reader is referred to additional work done on this subject refuting this argument in support of pairwise relative variograms (Robust Measures of Spatial Continuity, Mrs. M.Strivastava and H.M. Parker, Geostatistics Volume I, pp. 295 — 308), which concludes that heteroscedastic4 datasets in which samples have been preferentially located in areas with high values, cannot be characterized adequately with traditional sample variograms; relative variograms will produce more interpretable and reliable results.

In this study, variography was conducted on each dataset beginning at Oig and re-calculating clockwise in 20X increments. The first run was done with 0Eldip and OM plunge using a horizontal and vertical tolerance of  $\pm 12.5E1$ . The lag spacing was chosen as 75m and a maximum of 50 lags in any one direction was calculated.

Once complete, a second run was done beginning at OE and calculating clockwise in 20Elincrements using a horizontal and vertical tolerance of  $\pm 22.5$ Elbut at 100m and 125m lag spacing; also, for a maximum of 50 lags. Directional variography revealed weak anisotropy in the 90° direction, but given the shallow nature of the data, omni directional variograms were generated.

The nugget contribution was taken from down-the-hole variograms done on drillholes. Furthermore, Inverse distance squared was selected as the final estimation method of interpolating TGC values into a three-dimensional block-model. The block size chosen was identical to that discretizing the geological model for both models, 10 x 10 x 2 meters (*Northing x Easting x Elevation*). Within the project area there were 210 rows of blocks in the X direction, 300 columns of blocks in the Y direction and 576 stacks of blocks in the Z direction, for a total of 36,288,000 blocks. The project area consists of an area from: 8912200N and 8915200N, 489300E to 491400E, and -850EI to 300E. The cross-validation tests performed were done on the model. Numerous cross validation tests were performed on this block estimation study; one of them being naïve cross-validation.



### 5.3.7. Mineral Resource Estimates Results

Once the geological model and Mineral Resource Estimation were conducted, Mineral Resource results were tabulated at various TGC thresholds and are presented below for Indicated and Inferred Mineral Resources in Table 11 and Table 12 respectively.

Classification	TGC Cut-Off (%)	Tonnes	% TGC
	0.00	50,950,080	4.62
	1.00	44,405,280	5.24
	2.00	40,138,200	5.64
	3.00	34,663,680	6.13
	4.00	25,576,560	7.06
INDICATED	5.00	17,646,120	8.23
	6.00	11,696,400	9.64
	7.00	8,225,820	11.00
	8.00	5,570,640	12.67
	9.00	4,393,440	13.79
	10.00	4,393,440	13.79

#### Table 11: Indicated Mineral Resource Estimates - 2017

 Table 12: Inferred Mineral Resource Estimates - 2017

Classification	TGC Cut-Off (%)	Tonnes	% TGC
	0.00	107,958,420	3.91
	1.00	88,906,140	4.67
	2.00	75,982,860	5.19
	3.00	61,993,080	5.81
	4.00	43,843,140	6.75
INFERRED	5.00	21,881,880	8.90
	6.00	14,810,040	10.61
	7.00	10,290,780	12.39
	8.00	6,969,780	14.77
	9.00	6,072,840	15.71



# 6. GEOLOGICAL SETTING AND MINERALIZATION

### 6.1. Regional Geology

The Prospecting License PL10332/2014 is geologically classified under the Usagaran (Mozambique belt) Proterozoic system. The system constitutes high grade metamorphic rocks of sedimentary as well as igneous origin. Rock types range from schists to gneiss of Neo Proterozoic age and include marble, amphibolites, graphitic schist, mica and kyanite schist, acidic gneisses, quartzite and granulites. These lithologies are further overlain by Cretaceous and Karoo sediments in the east and southwest respectively (The Pula Group - Tanzania, 2016).

Structural trends within the Usagaran system are mainly north - south and host deposits such as gold, nickel, copper, gemstones (tourmaline, red garnet, tanzanite) as well as the highest-grade coarse graphite flakes in the country, see Figure 15, (The Pula Group - Tanzania, 2016).

The analysis of graphite ore samples in this region have shown on average a major content of large flakes of crystalline and expandable graphite with twenty percent (20%) jumbo flakes (+300 $\mu$ m), fifty percent (50%) large flakes (+180 $\mu$ m), twenty percent (20%) medium flakes (-180+106 $\mu$ m), and ten percent (10%) fine grains. In finished graphite flakes, this ore is upgradeable up to approximately 94% carbon. The jumbo and large flakes are the most demanded and expensive products (The Pula Group - Tanzania, 2016).

# Pula Graphite – Regional Geology



DMT Kai Batla (Pty) Ltd

Figure 15: Regional geology.



# 6.2. Property Geology

The study area is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists (Figure 16). Other rock types which were observed in the area include pegmatite and undifferentiated metamorphic sediments and gneisses. A large portion of the area is covered by deep red soils with little outcrop observed (The Pula Group - Tanzania, 2016).

Structural measurements taken within the northern portion of the study area, indicates that the graphitic schist strike east- west at approximately 250° to 260° and dip of 30° to 50° south-east. This graphitic schist does however occasionally seem to strike 356° and dip 35° towards west southwest. Based on outcrops within the study area, structural measurements have suggested rock formation trends which vary from 345° north-south to approximately 90° north to south-east. The angle of dip ranges from 25° to 40°. Within the vicinity of the Pula Graphite study area, schists and gneisses hosting graphite trend northeast to southwest and dip in a southeasterly direction of which PL10332/2014 is located within this mineralized corridor.

Based on a site visit by DMT, two assumptions have been made regarding the specific gravity and weathered state of the host rock (schist) and its graphite content:

- The higher the specific gravity, the higher the yield of quality graphite; and
- Graphite below the zone of weathered schist, the higher the quality.

# Pula Graphite – Local Geology







## 6.2.1. Lithologies

The Prospecting License PL10332/2014 is geologically classified under the Usagaran (Mozambique belt) Proterozoic system. The system constitutes high grade metamorphic rocks of sedimentary as well as igneous origin. Rock types range from schists to gneiss of Neo Proterozoic age and include marble, amphibolites, graphitic schist, mica and kyanite schist, acidic gneisses, quartzite and granulites. These lithologies are further overlain by Cretaceous and Karoo sediments in the east and southwest respectively.

#### 6.2.2. Structural Setting

Structural trends within the Usagaran system are mainly north - south and host deposits such as gold, nickel, copper, gemstones (tourmaline, red garnet, tanzanite) as well as the highest-grade coarse graphite flakes in the country.

Based on outcrops within the study area, structural measurements have suggested rock formation trends which vary from 345° north-south to approximately 90° north to south-east. The angle of dip ranges from 25° to 40°. Within the vicinity of the Pula Graphite study area, schists and gneisses hosting graphite trend northeast to southwest and dip in a southeasterly direction of which PL10332/2014 is located within this mineralized corridor.

#### 6.3. Deposit Mineralisation

The graphite deposit in the study area is predominantly hosted high grade metamorphic rocks. Graphite deposits within the Lindi region are relatively shallow, at a depth of less than 200 m deep, with an ore of 7 - 8 % mineable carbon (The Pula Group - Tanzania, 2016).

Graphite occurs as disseminated or multiple lenses and bands, hosted within micaceous schist. Disseminated graphitic schist tends to a friable and softer texture when it is subject to an oxidizing environment. Slightly-to-intensely silicified graphitic lenses composed of higher percentage of graphite tend to be resistant to erosion hence forming positive topography within the area.

Regional exploration work revealed extensive graphite schist zones. Zones with higher TGC values (13.5% to 23%) have larger flake sizes, and a consistent mineralogical composition resembling graphite schist. In contrast, there are zones with slightly lower TGC values (5.4% to 13.5%) but with similar geological setting. In addition, there are graphite schists zones with limited strike lengths, comprising smaller flake sizes but with economic notable TGC values (8.45%).



# 7. DEPOSIT TYPES

### 7.1. Mineralization and Characteristics

Graphite is a naturally occurring solid entailing properties of both metallic and non-metallic and has a high melting temperature (3550°C). This makes it the most stable form of carbon at room temperature and high pressure. The physical and chemical properties of metallic and non-metallic forms include high refractory, thermal and electrical conductivity, compressibility, chemical inertness, high thermal resistance, non-poison, and lubricity. It is usually black to grey, opaque, soft, flexible and non-elastic, greasy with a metallic luster. Naturally, graphite occurs in metamorphic rocks such as marble, schist, and gneiss. The syngenetic graphite is formed by metamorphism of the preserved organic materials in the sediments that subsequently results in two forms: (1) crystalline flake graphite and (2) microcrystalline graphite (amorphous graphite). The flake size and crystallinity depend on the grade of metamorphism as both increase with the increase in temperature.

Flake graphite's medium graphitic carbon content is 9 wt.%, considerably lower than vein-type graphite's 99 wt.%. Vein-type graphite flake sizes are centimetres, while flake-type is millimetres. The vein-type graphite has flakes that fill in the host lithology's fractures and pore spaces, while the flake-type has flakes in the matrix with the silicate minerals.

In much of the Neoproterozoic Mozambique Mobile Belt (NMMB), graphite is found in eastern Tanzania's North-South strike. Moye and Msabi (2021) found that graphite mineralisation in Chenjere supports the syngenetic model due to its medium-to-coarse crystalline flake type. The graphite mineralization suggests metasedimentary origin, with a maximum grade of 16wt.% as dispersed flakes in graphitic gneiss host rock. The graphite mineralization host lithology follows the NE-SW trend of the area's lithologies with few exceptions. The extent, grade, and flakes size of biotite gneiss mineralized zones make the study area economically viable for graphite mining.



# 8. EXPLORATION

In May 2023, the Pula commissioned a study to collect additional data through DD and RC in Zone A and Zone B of its tenements. Table 13 provides a summary of the work completed by Pula Graphite to date in addition to historical exploration work completed on the Property as described in Section 6.1.3.

ompleted to date
;

Task	Area	Number of samples	Comments
Diamond Drilling	PL10332/2014	7 boreholes (721.83m)	Carried out to confirm continuity of graphitic schist, and increase the resource confidence level of the Mineral
RC drilling	PL10332/2014	3 drillholes (285 samples)	Resources as declared in 2018; ALS Geochemical laboratory (assays)

Since June 2023, Pula has completed the drilling and details of the 10 boreholes drilling campaign are covered in the following Section 10, Section 11, and Mineral Resource estimation in Section 14.



# 9. DRILLING

The initial data collection, Phase 1, including drilling, was conducted in 2017 (as detailed in section 6.1.3), with resource estimation results summarized in Table 11 under Section 6.3.7 above. However, to increase the resource confidence of the Pula graphite deposit, Pula Graphite embarked on an additional drilling program, Phase 2. Therefore, seven (7) diamond holes and three (3) RC holes were planned and drilled in June-July 2023, Phase 2. The drilling program was contracted for NQ core totalling approximately 721.83m and 285m RC chips, and DMT was commissioned to update the report. Worth noting, only the mineralized zone of the drill length as half-core samples was sampled for analytical testing at ALS Geochemistry laboratory, Johannesburg, South Africa.

## 9.1. Collar Survey: Type, Orientation and Extent

Drilling was conducted with various inclinations and directions. Phase 2 drilling was conducted to infill between the previous boreholes and to extent drilling to other parts of the deposit. Hence, Phase 2 drilling spacing was irregular. Moreover, Phase 2 drilling was focused on testing the 2018 geological model and has been planned considering the interpretation which was based on historical data including trenching as described in section 6. All ten of the Phase 2 boreholes, see Table 14, were drilled targeting the potential graphite mineral occurrences.

Drill Method	BHID	Northing	Easting	Elevation	Azimuth	Dip	Depth
Diamond	PRDD001	8914790	490361,3	182,688	347.43°	-50°	149,63
	PRDD002	8914807	490421,8	185,306	346°	-50°	142,20
	PRDD003	8914891	490567,6	187,272	348°	-50°	122,00
	PRDD004	8914932	490726,6	198,702	348°	-50°	109,20
	PRDD005	8914832	490236,2	175,141	348°	-50°	81,50
	PRDD006	8913667	490183,2	176,467	350°	-50°	55,10
	PRDD007	8913690	490404,5	174,235	350°	-50°	62,20
RC	PRRC010	8914745	490269,7	177,970	347°	-55°	112
	PRRC011	8914753	490146,0	167,226	348°	-65°	103
	PRRC012	8913635	490441,9	168,510	348°	-60°	70

#### Table 14: Pula Graphite Project borehole collar information for Phase 2 in 2023

# **Pula Graphite – Phase 2 exploration drillholes**



#### Note:

 The dips of the diamond boreholes were 50° whilst that of RC boreholes ranged from 55°- 65° with all holes inclined towards the graphite mineralization.

DMT Kai Batla (Pty) Lt/

- The depth of the boreholes ranges from 55,10m to 149.63m (see Table 7 above).
- Total meters drilled during Phase 2 is 1006,83m. The ten phase 2 drillholes are plotted in Figure 17.

Figure 17: Phase 2 drillholes

NI 43-101: Pula Graphite Mineral Resource Estimate 23 April 2024



#### 9.2. Drillhole Collar setup and location

DMT served as advisors to Phase 2 drilling and ensured drilling program was executed in line with standard operating procedures. The borehole was staked out as per planned collars using hand-held GPS prior to drilling. All drillholes were remeasured to get the true collar of each drillhole upon completion of the drilling program. The drill rig was placed on the setup collar with dips as per drill plan, see Figure 19.

#### 9.3. Drilling Diameter and Core Recovery

All the seven diamond boreholes were drilling using a NQ diamond drill bit size, which generates a 75.7 mm hole diameter and produces core with 47.6 mm diameter. The core recovery and core quality (RQD) in terms of percentages are shown below (Figure 20 and Figure 21). Generally, lower rates of recoveries ranged below 80% at approximately the first 7 meters of core runs and it is attributed to weathering in the lower intervals of core runs and it is and is most common at the beginning of the core. However, actual recoveries range from 87 % to 96 %, which is acceptable for this level of report. Rock-quality designation (RQD) was measured and recorded for each run.



Figure 19: Inclined drill rig as per drill plan





Figure 20: The core recovery





Figure 21: The core quality (RQD)



## 9.4. Geological logging

RC chips were marked and logged onsite by the project geologist before transportation to storage in Ruangwa. However, DD core was firstly transported to the storage site prior to logging and data acquisition was collected in the following manner by the geologist:

- Drill core was stored in plastic core boxes, marked with labels on the end of each core box detailing box number, borehole number and sampling intervals.
- Logging, core cutting, and sampling was done or supervised by project geologist.
  - All borehole logging was done based on coded lithologies: GSC- Graphite, DGSC-Disseminated Graphite Schist, QV – Quartz vein, PGE - Pegmatite, NR-No Recovery, SOL-Soil, MSC – Garnet Mica Schist; with focus on major and minor rock type, color, grain size, structure, texture, contact, type and degree of mineralization, type, and degree of alteration. Furthermore, logging included a geotechnical log including recovery (%), RQD, fractures and weathering.
  - The aim of the geological logging was to obtain the maximum amount of relevant standardized and accurate geological information from the drill core to form the basis of the delineation of mineralized zones (wireframing) The valuation of these mineralized zones was based on geologically controlled sampling.
- Mark the cutting line for core cutting.
- Dry and Wet core pictures were taken once the cutting line has been marked at the core shed. Finally, once sample intervals and numbers have been marked on the core.
- Selection of samples, for analytical testing. Prior to sending samples to the laboratory, all sample bags and number strings were checked for continuity and sample bag integrity. Worth noting is DMT undertook the insertion of appropriate quality control standards (see Section 11).
- Data was properly documented using the standard logging sheets. Information regarding lithologies, alteration, mineralization, structure, assay or geochemical samples and QA/QC samples were entered into EXCEL. All data including core photographs were stored digitally.



#### 9.5. Economic Zones

STATS	Element(s)								
	SOL	PEG	QF	QZT	MSC	NS	GSC	QV	DGSC
Count	8,00	9,00	3,00	1,00	24,00	2,00	139,00	21,00	221,00
Min	0,70	0,30	1,75	2,30	0,45	1,00	0,46	0,31	0,19
Мах	2,70	4,90	33,38	2,30	129,20	1,00	67,94	87,60	101,30
Average	1,81	1,28	14,25	2,30	13,60	1,00	3,67	10,71	3,06
Total Thickness (m)	14,50	11,55	42,75	2,30	326,50	2,00	509,90	224,97	676,30
Total Thickness (%)	0,80	0,64	2,36	0,13	18,03	0,11	28,16	12,42	37,34

#### Table 15: Economic zones of the total exploration samples

#### Note:

1. The Pula project has mineralization in two main lithologies: the GSC- Graphite, DGSC- Disseminated Graphite Schist.

2. The updated drilling database indicates that the GSC and DGSC typically average thickness of 3.67m and 3.06m respectively.

3. GSC samples accounts for 28.16% total thickness of the drilled samples whilst DGSC accounts for 37.34% (Figure 22).

4. The lithological distribution in terms of significant intersections is shown below .

NI 43-101: Pula Graphite Mineral Resource Estimate 23 April 2024





Figure 22: The lithological distribution of economic zones (%).



# 10. SAMPLE PREPARATION, ANALYSIS AND SECURITY

In 2023, additional drilling was commissioned by Pula Graphite additional to data collected in 2017 (see Section 6.1.3). Seven (7) DD drillholes (PRDD001 to PRDD007) and three (3) RC drillholes (PRRC010 to PRRC012) were drilled in Zone A and Zone B of Pula Graphite tenements and sampling focussed on the graphite mineralisation. Therefore, this section reviews all known sample preparation, analysis and security as it relates to the ten (10) new holes whilst the information related to historical exploration work and drilling, to the extent that it is known, is provided in Section 6 above.

Chief Geologist, Yusuph Karim Mnnbagal, was responsible for supervising the ongoing drilling and sampling program in Tanzania, whilst Thabang Phakoe and Kagisho Nondwangu, DMT Geologist, with support of the QP of this report, Mr. Dexter S. Ferreira, were responsible for the QA/QC sampling and dispatch of the samples to the laboratory in South Africa. Worth noting is that DMT and the authors of this report are independent of ALS Geochemical laboratory. Furthermore, it is the opinion of the Authors that the procedures, policies, and protocols for drilling verification are sufficient and appropriate and that the core sampling, core handling and core assaying methods used are consistent with good exploration and operational practices such that the data is reliable for a property at this stage of exploration and the purposes of the Report.

## 10.1. Sampling Procedure

Once the core was logged and marked for sampling, the sample depth intervals were generated on an Excel<sup>™</sup> spread sheet and transferred onto the core. Sample numbers as per generated sample sheet were marked on the core to facilitate sampling and minimize human error during the sampling procedure. Sample intervals were clearly marked on the core using a marker. The sample interval marks are perpendicular to the core. The sample number was marked on the corresponding core interval using a coloured marker on either side of the cut line. An average of maximum sample length of 1m were applied, these lengths were solely based on lithological boundaries. Sampling protocol was reviewed, and recommendations made by DMT. The sampling protocol, which formed part of the sampling standard procedure sets out the methods and parameters.

#### The following sampling procedure was implemented for the original RC chips samples:

- Chip samples were split from the drilling site using a splitter.
- Collect half sample and place into sample bag.
- Insert one tag inside sample bag with the sample.
- Insert second tag on outside.
- Seal the sample bag to ensure it is secured.


## The following sampling procedure was implemented for the original diamond core samples:

- Core sections marked for sampling were sawn in half using a diamond core cutter.
- Collect 1/2 core as sample and place it into sample bag.
- Insert one pre-printed tag inside sample bag with the sample.
- Insert second tag on outside.
- Seal the sample bag to ensure it is secured.
- Once sampling was completed, meter marks, lithological contacts and sample numbers was marked on the half core. The marking was done on the cut surface of the core. Similar marker colours previously used to mark the full core were used, see Figure 23 below.
- Remaining half-core is stored, cross-stacked, in palletized core boxes within the current secure logging facility in Ruangwa.

# Pula Graphite – Core sample for drillhole DD005.





Figure 23: Core tray sample



## 10.2. Data Verification: Quality Assurance/Quality Control (QA/QC) Procedures

An assaying quality assurance and quality control ("QA/QC") protocol was applied to the Pula graphite samples, which involved repeats from preceding sample batches, certifiable and commercially available standard reference material ("CRM") samples derived from acceptable source lithologies known to contain negligible quantities of contaminant elements. These were inserted into the sample stream to check for laboratory accuracy, precision and cross-contamination. CRMs and Duplicate samples were introduced at regular intervals into the sample stream at a ratio of 1 to every 20 samples submitted to the laboratory.

#### Care was taken in ensuring the security and quality in inserting QA/QC samples:

- All samples were sent to the ALS Geochemical laboratory for crushing and pulverisation.
- Once prepped, all samples were delivered from the commercial laboratory, brought to a separate and secure DMT area (DMT Office in Randburg), and QA/QC samples inserted.
- Once the QA/QC samples were inserted into a "regular" sample stream, all the samples were re-tagged for dispatch.
- Only the DMT Geologist and QP were entitled to have access to the final ("new") sample list.
- Once complete, the final sample stream was sent to the commercial laboratory for assaying.
- The new sample list, denoting which samples are regular/duplicates/CRMs was communicated accordingly.

Assay results for standards, and duplicates are reported on the sampling and assay spreadsheet in their original sample positions as submitted to ALS Geochemical laboratory in Johannesburg, South Africa by DMT. The results discussed in Section 11.5 below.

#### 10.3. Samples: Laboratory Submission

A sample list was prepared for all samples to be submitted to the laboratory. A laboratory submission form was completed for all samples being transported to the laboratory. The laboratory submission form correlated with the prepared sample list. The QP was consulted on the analytical methodology prior to submission of samples to the laboratory. A copy of the sample list and submission form signed by both DMT, and laboratory representatives were filed accordingly for records. Digital copies of these documents were also uploaded on the project folder. A total of 299 samples have been submitted for analysis and this includes 36 (12%) which were for QA/QC purposes.

All samples were submitted to the ALS Geochemical laboratory ("ALS"), South Africa. The Authors are not aware of ALS submitting any core or core pulp samples to a referee lab (third party) to check against primary lab results.



## 10.4. Sample Security: Analytical

ALS Geochemical Laboratory, a geochemical services company accredited to international standards, with assay lab ISO 17025:2017 certification and certification to ISO 9001:2015, was used for the analytical requirements related to the project. The ALS Geochemical Laboratory facility in Johannesburg, South Africa, carried out the sample registration, sample weighing, sample preparation and analyses.

Once the samples were received by the ALS Geochemical Laboratory in Johannesburg, South Africa, a complete log of them was undertaken. This was followed by a second check and finally by receipting acceptance. Samples were initially weighed, and their weights recorded followed by drying in ovens set at a temperature of 105°C. Each sample was crushed using a jaw crusher to 80% passing 2mm. A barren wash between samples was done during crushing.

The crushed samples were then riffle split to obtain 1.50kg of material. This split material was subsequently pulverized to 85% passing <75pm. A barren wash between samples was done during pulverizing.

The Total Graphitic Carbon ("TGC") content was determined whereby carbonate material is removed by a reaction with Hydrochloric acid, followed by roasting each sample at 425°C to remove any organic carbon, and having the residue analyzed to Total Combustion using a Carbon-Sulphur analyzer. The Carbon-Sulphur analyzer used was a Leco CS632.

#### 10.5. QA/QC Sample Results

#### **10.5.1. Certified Reference Material – Standards**

A total of 18 certified reference materials ("CRMs" or Standard) were inserted into the sampling stream. The standard, CDN-GR-1, was sourced from CDN Resource Laboratories Ltd. located in Langley, British Columbia, Canada. This CRM has a certified value of 3.12% TGC  $\pm 0.11$  and its assay results from ALS Geochemical laboratory are shown in Figure 24. DMT is of the opinion that the results show no systematic bias and trends over time.





Figure 24: TGC% value and mean CRM (%)

## Note:

1. 66% reported well within the acceptable limits whilst 6 assayed lower than the deviation of the total 18 submitted CRMs.



## 10.5.2. Duplicates

A total of 18 duplicate samples were inserted into the sample stream. All the duplicate samples have less than a 5% error in the analytical procedure, implying that the assaying laboratory has excellent repeatability. The results from the QA/QC protocols for duplicates are shown in Figure 25.



#### Figure 25: TGC% duplicates

Note:

- 1. The overall precision in the analysis of between-batch duplicate samples is reasonably expected to be limited to those levels indicated which relate to laboratory precision of CRMs.
- 2. Any improvement on this precision cannot reasonably be expected from duplicate samples.
- 3. The analyses of duplicate samples present a sufficiently wide range of values, providing a good indication of overall laboratory precision for TGC.
- 4. DMT concluded that precision and accuracy errors in laboratory duplicate analysis do not impact materially on the assays used to guide the resource estimation process.



## **10.6.** Sample Security

DMT geologists took custodian of the core samples from QAQC sampling, transportation, and submission to the laboratory. At the drill rig, the drilling contractors under supervision of Pula Geologist were responsible for removing the core from the core barrel (using manual methods) and placing the core in prepared core trays (1 m length). The core was, initially, cleaned to remove drilling additives, but attempts were made to ensure that fine material was not lost. Once completed, the geologists took ownership.

DMT's geologists were responsible for transporting the samples to the ALS laboratory in Johannesburg. Upon reception at the sample preparation facility, ALS checked that the samples received matched the work order and signed that it had accepted the samples. Once the sample preparation was completed, the laboratory dispatched the sample pulps by DMT geologist to DMT's offices in Johannesburg.

## 10.7. DMT Kai Batla's Opinion on Sample Data Adequacy

It is the opinion of the QP that the frequency of QA/QC samples inserted in the 2015 and 2021 campaigns is at an acceptable rate as global practice (5 % of the samples). In general, it is the opinion of DMT that the results of the QA/QC analysis display a reasonably good correlation to the original assays and are acceptable for use in defining a NI43-101 compliant Mineral Resource estimate. In the opinion of the QP, the sampling preparation, security, and analytical procedures used in both sampling campaigns are consistent with generally accepted industry best practices and are therefore adequate.

#### 10.8. Database Management

DMT received both unstructured and structured data regarding the Pula Graphite Project. This data included geological reports, geological maps, and cross section as well as surface geochemical sampling data, such as XYZ locations and the assay results. DMT subsequently captured all available unstructured data into Microsoft Excel <sup>™</sup>. The data was cross-checked and validated in Datamine Studio RM <sup>™</sup> software as far as possible.

Data from 2017 and 2023 was compiled in Microsoft Excel <sup>™</sup>. Furthermore, all interpreted data was transformed in a digital format using Datamine. Data validation and verifications were done using the software.



# 11. DATA VERIFICATION

#### 11.1. Site Visit

Two of DMT's Project Geologists, visited the site in June 2023, and took part in technical discussions, which were held with Pula appointed site geologists (see section 2.6 for details). SOPs procedures, set up specifically for this project, were implemented. The SOPs include a comprehensive QA/QC management to enable the project geologists to control the quality and representativeness of acquired data. A thorough site visit report was furnished to the Client.

#### 11.2. Data Verification

Data submitted by Pula was reviewed and validated by DMT. The DMT geologists conducted a site visit to the core yard to verify the recovered core and establish project sampling protocols (see section 2.6 above). Core sampling of the boreholes was conducted to acceptable industry standards for sampling. A stringent QA/QC program was also adopted for the sampling program. The borehole database was checked for data quality, assay results precision and accuracy by the QP. Logging and sampling of the diamond boreholes was carried out according to acceptable industry standards to ensure the data can be used in a future compliant Mineral Resource estimate.

In addition, data verification was done inter alia by checking for:

- Whether the FROM's and TO's were consistent for each Borehole sample
- No zero or negative grades
- Other obviously erroneous data
- No duplication of samples or borehole numbering (i.e., BHID).

No significant issues were discovered. Every spreadsheet was imported into Datamine Studio 3.0<sup>™</sup> and sorted accordingly. The lithological coding was merged with the assays, core recoveries and bulk density measurements. The resulting drill hole assay data base was imported into Studio 3.0<sup>™</sup> and then plotted as three-dimensional boreholes.



## 11.3. Data Quality Summary

As part of the study to attain an NI43-101 compliant MRE, DMT completed a detailed validation of the data used to generate the geological model and Mineral Resource. This validation included:

- Visit by a DMT team.
- Spatial verification of the geographic reference system for the topographic surface, and the Pula Graphite Project, hence Spatial verification between the surface collars and the surface topography of the Project was established and Verification of anomalous deviations from survey data.
- Validation of duplicate coordinates and/or anomalous height values outside the topographic surface.
- Consistency between the TGC data reported in the assay table versus the laboratory certificates.
- Search for duplicate or abnormal records in the various tables of the database, and QA/QC.
- Verification of the reported values of TGC in the modelling compounds, and their correspondence in the resource model.
- Verified the quality of geological and sampling information and developed an interpretation of TGC grade distributions appropriate to use in the resource model.
- Reviewed the QA/QC database for the recent drilling sampling programs.
- Sample preparation and assaying laboratory visits in ALS in Johannesburg by the DMT Project Geologist.



# 12. MINERAL PROCESSING AND METALLURGICAL TESTING

Although no new metallurgical study was conducted in 2023, Pula Graphite Group previously commissioned metallurgical and flake size evaluation and these tests were carried out in 2017. The laboratory analysis was conducted by African Minerals and Geosciences Laboratory in Kinondoni, Tanzania, which is ISO 9001:2008 certified. The study details are found in section 6.2 above.



# 13. MINERAL RESOURCE ESTIMATES

The Pula Group requested DMT-Kai Batla to compliantly estimate the total graphitic content ("TGC") Mineral Resources for their Pula graphite deposit located in southern Tanzania. This section will present an overview of the methodology used and results obtained from the creation of the January 2024 Mineral Resource model for the Pula graphite deposit.

## 13.1. Data Collection

Data was received from the Client as Excel TM spreadsheets which includes:

- Drillhole collars.
- Assays.
- Lithological logging codes.
- Drillhole surveys.
- Specific gravity measurements.

In addition, 30 cross sections, showing the geological and structural interpretation was received in PDF format for the entire trench mapping. Worth noting is that trenching and drilling only took place in all of Zone A and partially in Zone B.

Data verification was done by checking whether the FROM's and TO's were consistent for each drillhole sample. The data was reviewed to ensure that there were no zero grades and other obviously erroneous data such as negative grades. Drillhole numbering was checked to ensure no duplication of collar identifiers (i.e. BHID).

#### However, the following were found in the data:

The Z-elevation of the 2023 drillholes were significantly lower than that of 2017. The discrepancy was on average 40m. The Qualified Person requested resurvey of the drillholes to acquire actual coordinates. On the 20th of November 2023, Pula appointed a surveyor to measure final coordinates and the elevations were corrected for all the drillholes using coordinates as measured by a qualified surveyor.

All collar datafiles were corrected to reflect the accurate collar positions of the drillholes. However, since the trenches were not recoverable due to backfilling, trench elevations were corrected using the closest drillhole. The changes are shown in Table 16.



Zone	Trench No.	Elevation Correction	Closest Drillhole
А	PTR01A	-10.774	PRRC011
	PTR02A	-14.774	PRRC011
	PTR03A	-8.987	PRRC003
	PTR04A	No Change	-
	PTR05A	No Change	-
	PTR06A	No Change	-
	PTR07A	-5.728	PRDD003
	PTR08A	No Change	
	PTR09A	-12.648	PRRC004
	PTR10A	-6.211	PRRC006
	PTR11A	No Change	-
	PTR12A	No Change	-
	PTR13A	-5.740	PRRC004
	PTR14A	-3.740	PRRC004
	PTR15A	-12.400	PRRC002
	PTR16A	-9.400	PRRC002
	PTR17A	No Change	-
	PTR18A	No Change	-
	PTR19A	No Change	-
	PTR20A	-3.774	PRRC011
В	PRT01B	No Change	-
	PTR02B	No Change	-
	PTR03B	-14.495	PRRC008
	PTR04B	-13.148	PRRC008
	PTR05B	-2.591	PRRC007
	PTR06B	-8.148	PRRC007
	PTR07B	-11.490	PRRC012
	PTR08B	-7.490	PRRC007
	PTR09B	-5.490	PRRC007

## Table 16: Trench Elevation Adjustments



Each spreadsheet was imported into Datamine Studio 3.0TM and sorted accordingly. The lithological coding was merged with the assays. The final sample file was then de-surveyed as three dimensional drillholes within Studio 3.0TM.

## 13.2. Geological Modelling

Wireframes were constructed using the lithologies mapped along the trenches. Each mapped trench, in native PDF format, was imported into AutoCAD<sup>™</sup> and appropriately stitched together to complete the entire trench. Once complete, each AutoCAD<sup>™</sup> file was appropriately scaled as indicated on the PDF documents. Vectors were then drawn (digitized) on each trench section to individually model the following 3 lithologies:

- Graphitic schist ("GSC");
- Disseminated graphic schist ("DGSC");
- Barren pegmatite.

The files were scrutinized and modified to ensure that they were accurate and up to date. Each file's coordinate system was transformed from a sectional view to a plan view. The resulting files were seamlessly imported into an AutoCAD<sup>™</sup> drawing and exported as a DXF file. Lithological units were then drawn with precision and adjusted to reflect all drill-hole information. The sections were then imported into Studio 3.0<sup>™</sup>, wireframed with meticulous attention to detail; see Figure 26. The sections were extended 1000m down-dip at a static angle of -45° to ensure that there would be sufficient volume for block-filling during the estimation phase. The dip angle was taken as the mean dips as measured in the field and shown on the trench maps. Once the strings were finalized, the entire frame was then wireframed into a solid (Figure 27).

These wireframes were then discretized into blocks  $5m \ge 10m \ge 2m$  (XYZ) in size using the TRIFIL process within Studio  $3.0^{\text{TM}}$ . No sub-celling was done. Once the geology model was discretized into blocks, it was reviewed on a section-by-section basis. The wireframes were studied in Datamine Studio  $3.0^{\text{TM}}$  to verify if there was any lack of filling and errors in the triangulation; none were present.





## Figure 26: String construction



#### Figure 27: Wireframed Mineralized Zones



## 13.3. Statistical Analysis- Naïve Statistics

A complete set of naïve statistics was performed on the drillhole database that was contained within the following limits: 8912200N and 8915200N, 489300E to 491400E, and -850E1 to 300E1.The statistics investigated the characteristics of TGC grade values as original samples. The original, uncomposited and uncut dataset, presented in Table 17 shows the naive statistics for samples contained within the modelled wireframe for the mineralized zones. The previous study showed that data from trenches and drillholes were very similar therefore that datatypes were concatenated.

STATISTICS	ALL
Number of Data	425
Mean (%)	5.40
Standard Deviation	4.50
Coeff. Of Variation	0.80
Maximum (%)	31.50
Upper Quartile (%)	6.40
Median (%)	4.40
Lower Quartile (%)	2.90
Minimum (%)	0.01
Number of Holes/Trenches	44

#### Table 17: Naïve Statistics on Uncut Samples

Missing samples were treated as -1.0 (*the notation in GSLIB*) when the data was imported into GSLIB2. There were no zero values in the database. The un-composited dataset reveals fairly low coefficients of correlation which indicate low degrees of variability, especially for the trench samples. The population distributions of the various elements are shown in Figure 28.

<sup>2</sup> GSLIB: Geostatistical library from Stanford University, USA.





Figure 28: Frequency Distribution Plots - TGC – Samples



## 13.4. Compositing

A separate set of statistics was done on the sampling lengths. The sampling length has a mean length of 1.0m with a median value of 1.0m. Therefore, the samples occurring within the wireframe were composited (downhole and along each trench) at 1.0m intervals. The naïve statistics for the 1.0m composites are shown in Table 18 below.

STATISTICS	Drillholes
Number of Data	437
Mean (%)	5.20
Standard Deviation	4.50
Coeff. Of Variation	0.90
Maximum (%)	31.50
Upper Quartile (%)	6.00
Median (%)	4.10
Lower Quartile (%)	2.60
Minimum (%)	0.01
Number of Holes/Trenches	43

#### Table 18: Naive Statistics on Uncut 1.0m Composites

## 13.5. Compositing - Justification

The composited data was then compared to the original sample data to assess whether the compositing process had changed the population characteristics of the original sample set. The percent differences are shown in Table 19 below.



#### **Table 19: Percent Differences**

STATISTIC	All
Number of Data	+2.82%
Mean (%)	-3.70%
Standard Deviation	-
Coeff. Of Variation	+12.50%
Maximum (%)	-
Upper Quartile (/o)	-6.25%
Median (%)	-6.82%
Lower Quartile (%)	-10.34%

It is evident that the compositing process, although slightly increasing the sample population by almost 3%, has decreased the mean and median values insignificantly.

## 13.6. GSC and DGSC

Given that the geological model contains two lithologies, namely graphitic schist ("GSC") and disseminated graphitic schist ("DGSC"), it was important to assess if there are any statistical differences between both datasets. The wireframes were utilized to parse the drillhole samples into GSC and DGSC datasets, and naïve statistics conducted; see Table 20.



Statistic	GSC	DGSC
Number of Data	277	519
Mean (%)	4.90	5.10
Standard Deviation	4.10	4.50
Coeff. Of Variation	0.80	0.90
Maximum (%)	27.90	31.50
Upper Quartile (%)	6.30	6.10
Median (%)	4.20	4.20
Lower Quartile (%)	2.30	2.40
Minimum (%)	0.10	0.01
Number of Holes/Trenches	46	42

## Table 20: Naïve Statistics on Drillhole Samples per Lithological Unit - %TGC

The naïve statistics presented in appear to be very similar with both means and median values being nearly identical. The two datasets were further studied by comparing their population distributions; see Figure 29.





The logarithmic probability plot above reveals that the samples within the GSC and DGSC lithological units are nearly identical, negating the need to separate them and introduce hard boundaries between both units.

Figure 29: GSC and DGSC - Distribution Characteristics - %TGC



## 13.7. Bivariate Statistics

A bivariate study was made on the TGC dataset. This comprised plotting data percussion assay values against Northings, Eastings and Elevations (see Figure 30 below). This was done in order to assess whether the dataset contains any inherent data trends. No discernable trends were evident in all the plots.



Figure 30: Elevation, Northings and Eastings vs. TGC



## 13.8. Sample Spacing

The Euclidean spacing between samples was examined. Overall, the distances typically are about 50m; which is the drill spacing grid. Table 21 shows the spacing between samples in three-dimensional space for all elements for composited drillholes.

Variable	Average Meters	Lower Quart. Meters	Median Meters	Upper Quart. Meters
TGC	52.27	36.45	50.14	62.30

#### Table 21: Euclidean Spacing – Diamond Drillhole Samples

A block size of 5.0m x 10.0m x 2.0m (XYZ) was chosen to discretize the block-model at Pula. This dimension is based on not having any more than 4 unsupported blocks in between 2 supported blocks (*blocks pierced by drillholes*). Ideally the block sizes should be bigger in the Y and Z directions (Figure 31), but the narrow 2.0m dimensions were chosen to better discretize the orebody going perpendicularly through the deposit and down the dip of the deposit.



Figure 31: XYZ block-size used for block-modelling



## 13.9. Grade Cutting/Outlier Limits

Cutting statistics were performed with the help of cumulative log probability plots, indicator correlation for lag 1 plots, coefficient of variation plots and finally percent metal contained plots. It should be noted that these are merely guidelines and that ultimately, the cutting limit chosen is a grade limit suggested by these plots.

The indicator correlation for lag 1 plots shows the correlation between samples for the first lag set. Plotting this indicator against increasing minimum thresholds for TGC values leads to a line tending closer towards zero. In other words, at ever increasing thresholds of TGC grades, there are fewer and fewer samples of similar grade. At this point, it indicates a lack of correlation between samples within the first lag set and suggests an ideal cutting limit for assay values. The coefficient of variation plots shows the change in this coefficient with increasing TGC values. A rapid change in this coefficient indicates a rapid change in the standard deviation and/or a change in the mean. This suggests an ideal cutting limit for TGC values.

Kinks, plateaus and/or changes in the cumulative log probability plots also suggest changes in populations (perhaps subpopulations) and serve as a good indicator of cutting limits for TGC values. A slightly different plot is the percent of contained metal in samples versus increasing trimming levels for metal grades. This plot enables one to check how much metal is being lost to cutting at a certain TGC value threshold. Once performed, all plots indicated that there was no need to trim TGC values back to any threshold; see Appendix I.

## 13.9.1. Variography

The models were estimated using data only contained within the defined limits. Pairwise relative variograms were used in this study; therefore, no data transformation was necessary. There is some argument that this variogram is not a valid covariance model and should not be used for estimation, although in many practical applications this structural measure has been used as a variogram. Some consider that mixing all data together maximizes the variability of the data set and subsequently reduces the chances of deriving an interpretable variogram structure. This practice necessitates the use of non-linear transforms such as the pairwise relative variogram, to derive a measure of the spatial variability of grades. Logically, segregating the deposit into stratigraphically distinct entities should reduce the variance within the data subsets allowing better and more appropriate local variograms to be developed for each of the entities modelled. This process is aimed at further reducing the risks inherent in the estimation process. The reader is referred to additional work done on this subject refuting this argument in support of pairwise relative variograms (*Robust Measures of Spatial Continuity, Mssrs. M.Strivastava and H.M.Parker, Geostatistics Volume I, pp. 295 – 308*),



which concludes that heteroscedastic $\Omega$  datasets in which samples have been preferentially located in areas with high values, cannot be characterized adequately with traditional sample variograms; relative variograms will produce more interpretable and reliable results.

In this study, variography was conducted on each dataset beginning at  $0^{\circ}$  and re-calculating clockwise in  $20^{\circ}$  increments. The first run was done with  $0^{\circ}$  dip and  $0^{\circ}$  plunge using a horizontal and vertical tolerance of ±12.5°. The lag spacing was chosen as 80m and a maximum of 20 lags in any one direction was calculated. Once complete, a second run was done beginning at  $0^{\circ}$  and calculating clockwise in  $20^{\circ}$  increments using a horizontal and vertical tolerance of ±22.5° but at 80m and 125m lag spacing; also, for a maximum of 20 lags.

Directional variography revealed some anisotropy in the N73°E direction for composites within the A Zone, and 95°E direction for composites within the B Zone. Both azimuths coincide with the strike directions of the respective zones. Because of these differences, the geological model was numerically re-assigned as shown in Table 22 to allow differing orientations of the search ellipsoid whilst distinguishing between both lithological units.

Zone	Lithological Unit	Numerical Code
А	GSC	1
	DGSC	2
В	GSC	3
	DGSC	4

#### Table 22: Geological Model - Numerical Assignment

The directional variogram is available in Appendix II. Due to the data paucity in the B Zone, directional variograms were computed based on A Zone composites. The nugget contribution was taken from down-the-hole variograms done on drillholes.

#### 13.9.1. Interpolation

Inverse distance squared was selected as the final estimation method of interpolating TGC values into a three-dimensional block-model. The block size chosen was identical to that discretizing the geological model for both models,  $5 \times 10 \times 2$  meters (*Northing x Easting x Elevation*). Within the

 $<sup>\</sup>Omega$  Heteroscedastic is an adjective describing a data sample or data-generating process in which the errors are drawn from different distributions for different values of the independent variables. Most commonly heteroscedasticity takes the form of changes in variance with the magnitude of X. That is, in y = Xb + e that the e's vary in magnitude with the X's. If the errors are drawn from different distributions, or if higher moments of the error distributions vary systematically, these are also forms of heteroscedasticity



project area there were 420 rows of blocks in the X direction, 300 columns of blocks in the Y direction and 576 stacks of blocks in the Z direction, for a total of 36,288,000 blocks. The project area consists of an area from: 8912200N and 8915200N, 489300E to 491400E, and -850El to 300El.

A minimum of 2 and a maximum of 5 composites were utilized for an estimate. Inverse distance was performed with a discretization of  $2 \times 2 \times 1$  (XYZ). The search radii used approximately equalled the variogram ranges in the plane of the deposit. The search strategies utilized in the inverse distance runs are listed in Table 23.

Variable	Zone	Principal Direction		Minor Direction		Vertical Direction	
		Radius Meters	Azimuth/Dip Degrees	Radius Meters	Azimuth/Dip Degrees	Radius Meters	Azimuth/Dip Degrees
TGC	А	250.0	73°/0°	250.0	163/-45°	10.0	163°/+45°
	В	250.0	95°/0°	250.0	185/-45°	10.0	85°/+45°

#### Table 23: Estimation Search Strategies

Tests were previously performed to investigate the effects of certain interpolation parameters on the variability of the estimates. Firstly, the maximum number of samples utilized for an estimate was examined. In this estimation model, the maximum is set to 5 composites, with an average of 4 composites used. A number of ID<sup>2</sup> runs with various maximum sample values were done, and the average variance of each run was compared to the maximum number of samples utilized. As the maximum number of samples is increased, the change in the variance decreased. The maximum number of samples is then selected from the area where a change in slope (*becomes flatter*) occurs, which is in this case, anything more than 5 samples. At this point, the addition of more samples does not significantly change the variance at all. Thus, a maximum of 5 samples was chosen to generate an estimate.

Once complete, the model was exported from GSLIB into ASCII format. This file contains a header describing the fields. The block centroid location was output, along with the TGC values. The ASCII file was then imported into Studio  $3.0^{\text{TM}}$  and re-indexed using the IJKGEN process and the project limits file (as defined by the project limits).



## 13.10. Model Validation

## 13.10.1. Cross Validation

The cross-validation tests performed here were done on the model. Numerous cross validation tests were performed on this block estimation study; one of them being naïve cross-validation. This technique consists of removing one sample and using the parameters to estimate it, and them comparing it to the original sample.

This was done systematically for all samples with a final correlation, comparing estimates to actual values, being reported. This allows for the testing of the parameters utilized in the estimation process, Table 24 lists the results. Overall, the correlation for the entire project area has a correlation coefficient of 0.64 for TGC which indicates some degree of local variability and/or smoothing.

#### Table 24: Naïve Cross Validation Results

Variable	Number of Data	Correlation Coefficient
TGC	379	0.639

Another test was to take all the samples that interested an estimated block, weight them by length and them compare them to the estimated block. This test is one which done to verify the amount of variability and/or smoothing of the estimate.

Samples occurring within a certain estimated block should imply a grade very similar to the estimated grade itself, and the result is presented in Table 25. As a guide, a correlation of 0.8 represents an adequate level of smoothing within the estimate. The correlation coefficient reveals that very little smoothing has occurred in the estimation.

#### **Table 25: Cross Validation Results**

Variable	Number of Data	Correlation Coefficient
TGC	245	0.841



## 13.10.2. Residuals

The amount of residual bias was also studied by determining the difference between the actual grade and the estimated grade; a test done via naïve cross-validation. These differences are then plotted on a frequency distribution plot and the mean established. In a perfectly unbiased estimate, the mean should be zero. Table 26 shows the amount of bias for means of each estimated variable.

#### Table 26: Residual Analysis

Variable	Number of Composite	Mean difference (ppm)
TGC	379	+0.169



#### 13.10.3. Swath Plots

A study referred to as swath (*or trend*) analysis was undertaken after block-modelling. The study involves the examination of the composites used in the estimation process and comparing them to the final block-model. Various trends are checked, Northings versus TGC grades, Eastings versus TGC grades and Elevation versus TGC grades. The principle is that any trends are present within the dataset (*1.0m uncut composites*) must also be reflected in the final block-model; see Figure 32.



Figure 32: Swath Plot - %TGC



The trends indicate that the estimated block-model closely follows the trends as present in the composites, in all three directions: Northing, Easting and Elevation. Visual checks of the estimation methodologies revealed that inverse distance squared showed excellent grade variability.

## 13.11. Specific Gravity

Due to data paucity, the specific gravities were not estimated. The mean SG value of 2.70 was used to convert volumes into tonnages. This mean value was derived from 51 separate SG measurements completed at Bureau Veritas laboratory in Johannesburg, South Africa.

#### 13.12. Resource Classification

The estimated Mineral Resources were classified as Measured, Indicated and Inferred Mineral Resources and shown in Figure 33.





Figure 33: Pula Graphite Mineral Resource Model as at 1st March 2024



#### The scheme was based upon the following criteria:

- Measured Mineral Resources
  - These are estimates using a 60m x 60m x 5m (*strike/dip/thickness*) with a minimum of 2 composites and a maximum of 5 composites to interpolate an estimate.
  - The ellipsoid dimension was based on approximately half the range of the first range of the spherical variogram model.

#### Indicated Mineral Resources

- These are estimates using a 250m x 250m x 10m (strike/dip/thickness) with a minimum of 2 composites and a maximum of 5 composites to interpolate an estimate.
- The ellipsoid dimension was based on approximately half the second range of the spherical variogram model.

#### • Inferred Mineral Resources

- These are estimates using a 625m x 625m x 25m (strike/dip/thickness) with a minimum of 1 composite and a maximum of 3 composites to interpolate an estimate;
- > The ellipsoid dimension was based on 2.5x the range of the Indicated dimensions.

## 13.13. Topography

Since no digital terrain model ("DTM") was available for this study, the author created one utilising the trench topographic profiles and the drillhole collar locations. Datamine Studio 3.0<sup>™</sup> created a DTM and the block-model truncated accordingly.

## 13.14. Sections

Sections through the block-model, wireframes and drillholes and trenches are shown in Figure 34 to Figure 36.





Figure 34: Section 1 – East direction.

NI 43-101: Pula Graphite Mineral Resource Estimate 23 April 2024





Figure 35: Section 2 - Western direction.

NI 43-101: Pula Graphite Mineral Resource Estimate 23 April 2024





Figure 36: Section 3 - Looking North-South



## **13.15. Mineral Resources Results**

Results were tabulated at various TGC thresholds and are presented below for Measured, Indicated and Inferred Mineral Resources. The Measured Mineral Resources are shown in Table 27, the Indicated Mineral Resources are shown in Table 28, both Measured and Indicated Mineral Resources are shown in Table 29, whilst the Inferred Mineral Resources are shown in Table 30.

#### **Table 27: Measured Mineral Resources**

MEASURED				
TGC Cut off (%)	Tonnes (Mt)	% TGC		
0.00	9.8	4.74		
1.00	9.4	4.95		
2.00	8.7	5.25		
3.00	7.2	5.81		
4.00	4.6	7.09		
5.00	2.7	9.01		
6.00	2.1	10.01		
7.00	1.6	11.06		
8.00	1.3	11.96		
9.00	1.0	12.73		
10.00	0.75	13.92		



#### **Table 28: Indicated Mineral Resources**

INDICATED			
TGC Cut off (%)	Tonnes (Mt)	% TGC	
0.00	57.8	4.98	
1.00	56.2	5.12	
2.00	52.7	5.35	
3.00	44.1	5.89	
4.00	30.8	6.93	
5.00	19.3	8.40	
6.00	15.1	9.22	
7.00	11.7	10.02	
8.00	8.7	10.89	
9.00	6.0	11.93	
10.00	4.4	12.85	

## Table 29: Measured & Indicated Mineral Resources

MEASURED & INDICATED			
TGC Cut-off (%)	Tonnes	% TGC	
0.00	67,731,930	4.95	
1.00	65,625,120	5.09	
2.00	61,414,470	5.34	
3.00	51,311,070	5.88	
4.00	35,443,440	6.95	
5.00	21,941,280	8.47	
6.00	17,180,640	9.32	
7.00	13,262,130	10.15	
8.00	9,950,310	11.03	
9.00	7,064,820	12.05	
10.00	5,186,160	13.01	


#### **Table 30: Inferred Mineral Resources**

INFERRED						
TGC Cut off (%)	TGC Cut off (%) Tonnes					
0.00	130.1	5.29				
1.00	119.2	5.74				
2.00	111.7	6.03				
3.00	93.5	6.72				
4.00	70.1	7.78				
5.00	52.9	8.87				
6.00	43.8	9.60				
7.00	35.2	10.34				
8.00	25.7	11.38				
9.00	15.4	13.32				
10.00	11.8	14.44				



# 14. MINERAL RESERVE ESTIMATE

Not applicable to this report.

# 15. MINERAL RESOURCE VALUATION

See Annexure III.

# 16. MINING METHODS

Not applicable to this report

# 17. RECOVERY METHODS

Not applicable to this report.

# **18. PROJECT INFRASTRUCTURE**

Not applicable to this report.

# **19. MARKET STUDIES AND CONTRACTS**

Not applicable to this report.

# 20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL IMPACT

Not applicable to this report.

# 21.CAPITAL AND OPERATING COSTS

Not applicable to this report.

# 22. ECONOMIC ANALYSIS

Not applicable to this report.



# 23. RISKS AND UNCERTAINITIES

The Pula Graphite Project, as any exploration project, is subject to common risks set as confronting other non-commodity mineral extraction-based operations, including:

- Access to sufficient resources and infrastructure to extract the resource effectively and efficiently from the ground.
- Accurate characterization of the deposit through modelling and drilling.
- Acceptance and cooperation from the local population, and municipal, provincial and national governments.
- Assurance that the Project will not harm the local and wider environment, and that remediation of the land after Project fulfilment is practicable.

Risks arising from spherical graphite product manufacturing perspective are:

- Market acceptance of a novel graphite material.
- Market penetration and competitiveness in the face of China dominance in graphite primary production.
- Research and development into value-added processing of graphite concentrate into spherical graphite by lithium-ion battery end-use segment to maximize use and revenue.

These and other risks have been mitigated and resolved to various degrees thus far in the project life, and will continue to be addressed, as described elsewhere in this assessment.

The following points are a list of potential risks associated with the mining sector in Tanzania:

- Due to the changes in legislation and the potential time being taken to implement new regulations, the sector has slowed down to a point where it is impacting exploration activities and a Companies/Potential Investors capacity to finalize the deals.
- Tanzania banned the export of gold and copper ore over a tax dispute with the country's biggest gold miner, London-listed Acacia to encourage the construction of domestic smelters.
- Under the new regulations, the government can force mining and energy companies to renegotiate contracts to give the state at least 16 percent in projects, rising to 50 percent in some cases, and raise export royalties.
- A portion of returns from mining projects must be re-invested in Tanzania. Preference must be given to goods produced in Tanzania and must be acquired and imported through Tanzanian companies.



# 24. ADJACENT PROPERTIES

The largest and most worked-on property near Pula's PL10332/2014 prospecting license is Magnis Resources' Nachu Graphite Project. Magnis was previously known as Uranex, a spin-off from Goldstream Mining and focused on projects in Tanzania and Western Australia. The uranium assets were spun out/demerged, and the company changed its name to Magnis in September 2014 to identify the company with the new graphite market.

A maiden Mineral Resource for the Nachu Graphite Project was announced in November 2014; 156Mt at an average grade of 5.2% TGC at a cut-off of 3.0% TGC. The resource contains over 8Mt of graphite, and 66% of the resource is in the Measured and Indicated categories. In late December 2014, Magnis released a pre-feasibility study with exceptionally strong economics, driven by a high percentage of graphite in the Large, Jumbo, and Super Jumbo Flake categories, which demand higher prices per ton. It gave an NPV of US\$1.04B with an internal rate of return of 84% using a 10% discount rate and a capital payback of 1.4 years at a cash margin of US\$1,600/t.

In late March 2016, Magnis completed a Bankable Feasibility Study, where the scale of the operation was increased to 5Mt per annum, resulting in an output of 240kt of graphite per annum in the early stages of operation and 220kt per annum over the life of the mine.

Pre-production capital expenditures increased to US\$269M, reflecting that the larger operation and operating costs were forecast to be US\$502/t over the first five years and US\$559/t over the life of the mine. The increased production and higher graphite prices, driven by the exceptional level of purity of the Nachu graphite, pushed the post-tax net present value to US\$1.69B at a 10% discount rate. Tanzanian-focused flake graphite development company Volt lodged its MLA's with the Minister for Minerals of Tanzania covering the Company's flagship Bunyu Graphite Project in February 2018. Notably, the MLA covers Stage 1 development, where an estimated 400,000tpa of ore will be processed, producing a nominal 20,000tpa of graphite products. Furthermore, MLA covers the Stage 2 expansion at Bunyu, which is targeted for completion by late 2020 and will be based on the Pre-Feasibility Study metrics of 3.8Mtpa of ore feed to produce 170,000tpa of graphite product.

As the footprint of the Stage 1 Bunyu Project also accommodates the Stage 2 development, with both development stages set to utilize the same mine infrastructure, two MLAs have been lodged with the Minister. The total area covered by the MLAs is approximately 18km2, with single MLs limited to 10km2 in size. Following assessment and approval by the National Environment Management Council ("NEMC"), Volt will be issued with its Environmental Certificate for the project. Volt has upgraded their JORC-compliant Resource estimate to 461Mt grading at 4.90% TGC, effectively the largest JORC-compliant Mineral Resource in Tanzania. The recently completed Pre-Feasibility Study results have revealed a pre-tax NPV of US\$1.31B with an internal rate of return ("IRR") of 87% and a payback of 1.4 years based on a 22-year life of mine. Its JORC-compliant Maiden Ore Reserve is listed at 127Mt grading at 4.40% TGC.



# 25. OTHER RELEVANT DATA & INFORMATION

DMT is not aware of any additional relevant data that might materially impact the interpretations and conclusions presented in this Technical Report.



# 26. INTERPRETATION AND CONCLUSION

The objective of the Report was to prepare an independent NI 43-101 Technical Report, capturing historical information and data available about the current Property that comprises the Pula graphite Project, Tanzania, and making recommendations for future work on the Project.

Geologically, the study area is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists. Structural trends within the Usagaran system are mainly north - south and host deposits such as gold, nickel, copper, gemstones and the highest-grade coarse graphite flakes.

Based on the Property's favourable location within the Neoproterozoic Mozambique Mobile Belt (NMMB) and the exploration potential for finding additional graphite mineralization within the Property (*i.e.*, Pula Graphite Deposit), the project presents an excellent opportunity to expand current Mineral Resources and to grow graphite resources and make additional discoveries of graphite mineralization. Characteristics of the Pula Graphite Deposit MRE are of sufficient merit to justify:

- Additional surface exploration work;
- Metallurgical and mineralogical studies; and
- Further drilling and updated Mineral Resource estimations with the view to undertaking preliminary engineering, environmental, and metallurgical studies aimed at further characterizing the graphite mineralization and offering economic guidelines for future exploration strategies (i.e., a Preliminary Economic Assessment).



# 27. RECOMMENDATIONS

It is the QP' professional opinion that additional exploration expenditures are warranted on the Pula Graphite Project and include diamond drilling (aimed at upgrading the resource confidence (*i.e.*, Inferred to Indicated and Measured) through infill drilling within the Pula deposit and expanding resources (Inferred category) along the strike, from the current MRE. An updated Mineral Resource Estimate, processing and metallurgical test work (necessary to fully understand the extractability of the graphite within Pula Graphite project), and environmental baseline studies are thus required. The aim of this program is to complete the work necessary to move the Project into Preliminary Economic Assessment (PEA) stage.



# 28. REFERENCES

- Ferreira, D. S. and Naicker, S. (2018). Ni43-101 Competent Persons Report On The Pula Graphite Project In Tanzania.
- Mmbaga, Y.K. and Jennings, Dr K. J (2016). A field study and mapping survey: Pula Graphite Partners Licenses PL10327 & PL10332 The Ruangwa District, Lindi, Tanzania.



# 29. APPENDICES

## 29.1. Appendix I: Trimming Statistics





# 29.2. Appendix II: Variogram





# 29.3. Appendix III: Mineral Resource Valuation Report



# RUANGWA GRAPHITE PROJECT MINERAL PROPERTY VALUATION - PREPARED IN ACCORDANCE WITH THE CIMVAL STANDARDS

Bowline Project Number : P24002

Prepared for

# **PULA GROUP LLC**

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#### **EXECUTIVE SUMMARY**

### Terms of Reference

Bowline Professional Services (Pty) Ltd (Bowline) was appointed by The Pula Group LLC to conduct a mineral asset valuation of their Ruangwa Graphite Project located in the Lindi region of the Ruangwa District in Tanzania.

The Ruangwa Graphite Project, owned by Pula Graphite Partners Limited (a wholly owned subsidiary of The Pula Group) comprises four prospecting licenses; of which this valuation report focuses on prospecting license PL 12456/2023 only. The following table highlights the four prospecting licenses:

Prospecting Licenses for Ruangwa Graphite Project						
Prospecting License	Prospecting License Status and Comments					
PL 12456/2023 Previously known as PL 10332/2014	Prospecting license is in the name of Pula Carbon Tanzania Limited, which has appointed Pula Graphite Partners Limited as its duly authorized representative. Prospecting license is at an advanced stage of exploration, including preliminary					
	easibility studies and economic assessment of future operational potential. The asset has a declared Mineral Resource statement as per NI43-101 Technical Reporting (DMT Kai Batla (Pty) Ltd, 2024), which includes Measured, Indicated and Inferred Resources.					
	This asset is included in this valuation report.					
PL 12457/2023 Previously known as	Prospecting license is at an early stage of development, with geology reconnaissance and field mapping data.					
PL 10327/2014	This asset is not included in this valuation report.					
PL 12453/2023 Previously known as	Prospecting license is at an early stage of development, with geology reconnaissance and field mapping data.					
PL 10438/2014	This asset is not included in this valuation report.					
PL 12454/2023 Previously known as PL 10379/2014	Prospecting license is not yet explored. This asset is not included in this valuation report.					

This valuation report was to be prepared in accordance with the standards and guidelines as prescribed in the recognised code for the valuation of mineral properties known as "The CIMVal Code"; as adopted by the Canadian Institute for Mining, Metallurgy and Petroleum (the "CIM"). This valuation is also to be read in conjunction with the NI43-101 Technical Report completed by DMT Kai Batla in March 2024.

The main purpose of this valuation report is to provide The Pula Group with an updated value of the PL 12456/2023 prospecting license based on the recent upgrade of the mineral resource estimation emanating from additional exploration drilling conducted during 2023. It is intended to be used in support of The Pula Group's efforts to raise the appropriate capital funding to further develop the project and take it into project execution; with the ultimate aim of taking the project into operation.

This valuation report is dated 27 March 2024; and the valuation date is effective as of 1 March 2024.



The Ruangwa Graphite Project, with specific reference to PL12456/2023, is located in the Ruangwa District within the Lindi Region of Tanzania. The license area is approximately 19 km north of Ruangwa Town itself. The following table provides the coordinates of the prospecting license area:

License area for PL12456/2023					
CORNERS LATITUDE LONGITUDE					
1	09°53′30.00″	38°55'00.00"			
2	09°53'30.00"	38°54'00.00"			
3	09°48′58.40″	38°54'00.00″			
4	09°48′58.40″	38°55'00.00"			
5	09°49'00.07"	38°55'00.00″			
6	09°49'00.25″	38°54'58.91″			
7	09°51′24.29″	38°55'00.00″			

The following figure shows the locality of the prospecting license within the Lindi Region:



PL12456/2023 is owned by Pula Carbon Tanzania Limited, with its address stated as PO Box 23124, Dar es Salaam, Tanzania. The prospecting license was renewed on 2 August 2023 and is valid for 48 months from the date of renewal.

This report has been prepared by Mr Breton Scott, an independent consultant working for Bowline Professional Services (Pty) Ltd, which an independent mining and mineral project development firm based in Johannesburg, South Africa. Neither Mr Scott nor the members of Bowline Professional Services (Pty) Ltd have or will have any material interest in The Pula Group, its subsidiaries or the Ruangwa Graphite Project.

#### **Basis of Value**

This valuation report has been prepared on the basis of determining a fair market value for the Ruangwa Graphite Project's prospecting license PL 12456/2023.



The Organisation for Economic Co-operation and Development (OECD) defines Fair Market Value as the price a willing buyer would pay a willing seller in a transaction on the open market. (International Valuation Standards Council, 2016)

The valuation estimations were conducted and presented in United States Dollars (USD).

This valuation has utilized two valuation approaches, with the Market approach being the primary valuation approach and the Income Approach as the secondary valuation approach; as defined by the CIMVAL Standards (Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum, 2019).

### Scope of Work

This mineral property valuation has evaluated all the material information provided to the Qualified Valuator in terms of the current project development status as well as information projecting future operational performance emanating from early-stage feasibility studies.

The valuation report was prepared by Bowline Professional Services (Pty) Ltd and has not relied on any other specific experts in conducting the valuation itself; other than those experts responsible for generating the technical data and reports highlighted in the Valuation Report itself.

The Qualified Valuator, by virtue of his skills and expertise outside of mineral property valuations, conducted an internal due diligence and review of all the technical and economic information provided. The Pula Group provided copies of the associated prospecting licenses comprising the Ruangwa Graphite Project, to Bowline, and as such confirming the legal status of the licenses themselves as well their ownership. The Qualified Valuator has deemed the information provided to be materially reliable and suitable for use in this valuation report.

#### Compliance with the CIMVAL Standards

This valuation report has followed the guidelines and standards of the CIMVAL Codes (2019) and, within the constraints of the current status of the Ruangwa Graphite Project's development, the valuation report complies with the CIMVAL standards. The structure of the valuation report is in line with Section 2.10 of the CIMVAL Codes.

## **History of Exploration and Production**

The Pula Group has been systematically upgrading their geological database for the mineral property since 2016. The mineral property has only been owned by The Pula Group and no other parties have conducted exploration works. The following list, provides a summary of the exploration activities, to date:

- Geological mapping, soil geochemistry, IP dipole-dipole, magnetic surveys, and 30 trenches of approximately 1023 m were conducted in 2016. The two main graphite blocks (known as Zone A and Zone B) included massive Mineral Resources with over 50% high-grade material with large flakes. Approximately 100 million tonnes of hypothetical graphite ore were identified in both blocks.
- Additional exploration was conducted in July 2017 by The Pula Group. Nine (9) RC drill holes were drilled to confirm graphite mineralization continuity along strike and down dip; mineralogical composition, mineralized domains, TGC%, flake size, and deleterious minerals or components were measured.



## Geology and Latest Exploration

The Prospecting License PL102456/2023 is geologically classified under the Usagaran (Mozambique belt) Proterozoic system with structural trends within the Usagaran system hosting deposits such as gold, nickel, copper, gemstones (tourmaline, red garnet, tanzanite) and the highest-grade coarse graphite flakes in the country (DMT Kai Batla (Pty) Ltd, 2024). The analysis of graphite ore samples in this region have shown on average a major content of large flakes of crystalline and expandable graphite with twenty percent (20%) jumbo flakes (+300 $\mu$ m), fifty percent (50%) large flakes (+180 $\mu$ m), twenty percent (20%) medium flakes (-180+106 $\mu$ m), and ten percent (10%) fine grains. In finished graphite flakes, this ore is upgradeable up to approximately 94% carbon.

The study area, which hosts a shallow deposit outcropping on surface and evaluated to a depth of approximately 200 m, is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists. Structural measurements taken within the northern portion of the study area, indicates that the graphitic schist strike east-west at approximately 250° to 260° and dip of 30° to 50° south-east. Within the vicinity of the Ruangwa study area, schists and gneisses hosting graphite trend northeast to southwest and dip in a southeasterly direction of which PL102456/2023 is located within this mineralized corridor.

Summary of evolution drilling work – 2023 (DMT Kai Batla (Ptv) Ltd. 2024)					
Task	Area	Number of samples	Comments		
Diamond Drilling	PL10332/2014	7 drillholes (721.83m)	This work was conducted to confirm the continuity of the graphitic schist, and to increase the resource confidence level of the Mineral Resource as declared in 2018.		
RC Drilling	PL10332/2014	3 drillholes (285 samples)	ALS Geochemical was appointed to conduct the laboratory work (assays)		

In May 2023, the Pula Group commissioned further exploration programmes to collect additional data through diamond and reverse circulation drilling in Zone A and Zone B of its tenement.

#### **Mineral Resources and Mineral Reserves**

DMT Kai-Batla released the Mineral Resource Estimate on the 29<sup>th</sup> February 2024. The Classified Resources stated below are estimated as values above a minimum cut-off grade of 3.0% TGC:

- Measured Mineral Resource of 7.2Mt grading at 5.81% TGC.
- Indicated Mineral Resource of 44.1Mt grading at 5.89% TGC.
- Inferred Mineral Resource of 93.5Mt grading at 6.72% TGC.

#### **Environmental and Social Considerations**

The mineral property does not have any major environmental risks that could materially influence the value of the property. There are, however, certain aspects that need to be highlighted. Although these are addressed briefly below, it must be acknowledged that they are not insurmountable and are actually typical of most mining projects.



- There is a small community with their village located on the northern boundary of PL12456. The village stretches between 100 m and 200 m from the proposed first mining pit. There are several dwellings that may require relocation. The Pula Group is already conducting negotiations with the relevant community leaders and a decision as to where these dwellings will be relocated is still to be concluded. The budgetary costs for these relocations are incorporated into the project's capital budget estimate.
- There are other villages on the PL12456 property, but they are located much further south. Only
  once the geology zones C, D and E prove to be viable for mining, will the future environmental
  authorisations be amended to accommodate any impact the Pula operation may have on these
  communities. It is anticipated that the Pula operation will only reach these areas in
  approximately 15 to 20 years from now.
- It is important to highlight that The Pula Group has a long-standing relationship with these communities over the past decade and no risk imposed by community interactions is foreseen.
- The Mbemkuru River cuts the northeast corner of PL12456. This is a major waterway for the area. It is approximately 700 m away from the proposed first mining pit. Owing to the strike and dip of the graphite orebody, as mining activity advances, the mining pit will systematically advance further away from the river.
- The entire PL12456 license is largely agricultural land with very little undisturbed natural land left. The majority of the farming activity involves the growing and harvesting of cashew nuts and fruit; farmed by the local communities.

The Pula Group has appointed a local environmental consultant to conduct the various environmental impact assessments and related specialist studies for the environmental authorisations. These submissions will comply with the Tanzanian laws and regulations, with specific reference to The Environmental Management (Control and Management of Carbon Trading) Regulations, 2022, The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021, Amendments to the Tanzania Carbon Trading Regulations, 2023 and National Environmental Policy (NEP) 2021. It is planned to have this work concluded in the first quarter of 2024.

#### Key Assumptions, Risks and Limitations

In preparation for the mineral property valuation, it was prudent to identify the material assumptions and limiting conditions that affect the analyses, opinions, and conclusions reached and upon which the valuation of the mineral property is based.

- The Ruangwa Project is advancing through the traditional project development stages as is typical for mining projects in Africa, and as would be expected by financing institutions.
- The understanding and confidence in the geology modelling and mineral resource estimates is at a high level of confidence; and is comparable to the neighbouring projects.
- There is sufficient measured resources identified to keep the Stage 1 First Pit First Plant production project (12 ktpa graphite concentrate) sustainable for a minimum of 25 years, without a ramp-up in production. Should the Stage 2 production project (80 ktpm graphite concentrate) be executed within 2 years after the start of Stage 1; the measured resources can sustain a life of



mine operation of at least 5 years, by itself. Once the indicated resources are included, the life of mine extends by a further 25 years at full production.

- Albeit that the project has a high level of confidence in the mineral resource, with an abundance of relatively high-grade graphite deposits; from a feasibility study point of view, the project is at a relatively early stage of development and this has been factored into the valuation results.
- The political and social outlook for Tanzania is positive for the foreseeable future, with no risk of country instability anticipated. With public reporting showing that political reforms are planned, the slow execution of these reforms may keep the political risk elevated, but not damaging to the business environment. Similarly, continuing disinflation will be positive for social stability and will help to reduce the likelihood of any anti-government protests driven by the slow reform progress (BMI a FitchSolutions Company, 2023), (The World Bank in Tanzania, 2023).
- The graphite commodity market is not as well established as other commodities, such as gold or base metals, for example. However, commodity pricing is predominantly driven by the pricing appetite of commodity traders dealing with graphite consumers. Therefore, pricing used in the valuation of the Ruangwa property is directly linked to the pricing model proposed in the memorandum of understanding between The Pula Group and their Singaporean off-taker (Pula Graphite Partners (T) Ltd & Fortune Bay Resources Pte. Ltd, 2023).
- The Pula Group has no legal disputes, land claims or any other impediments to their mineral exploration and project development activities.

## Valuation Approach and Methodology

Owing to the fact that the Ruangwa Graphite Project is at an advanced stage of exploration and that the future operability of the project has been evaluated to a pre-feasibility study level of confidence, Bowline has opted to consider two approaches for the valuation, i.e. the Market Approach and the Income Approach.

Based on the market approach, the market comparables methodology was utilized. This methodology was chosen owing to the extent of relevant transactional data available in the public domain and to Bowline, for comparable projects of a similar size and nature.

Based on the income approach, a discounted cashflow model was developed and a value was determined accordingly. This methodology allowed the Valuator to apply various technical and economic parameters to determine future potential cashflows, discount the cumulative net cashflows to a net present value, which could then be used to establish a value or price that a potential willing buyer and willing seller could negotiate. These key parameters included:

- Graphite pricing based on current negotiations with a interested off-taker
- Production forecasts, which includes mining production and process plant performances
- Operating Costs, including both on-mine cost assumptions as well as off-mine cost assumptions
- Capital Costs, including budget estimates for the purchase of equipment, material and for the project execution of site infrastructure. These costs, also incorporate budget assumptions for ongoing or stay-in-business capital costs.
- Discount rates for the determination of the time value of money



#### **Previous Valuations**

Bowline Professional Services (Pty) Ltd conducted a high-level valuation report dated 28 May 2018 and was then revisted in February 2023. This valuation report formed part of the Independent Business Plans with references, (Bowline Profoessional Services (Pty) Ltd, 2018), (Bowline Professional Services (Pty) Ltd, 2023).

Previous valuation results						
Valuation	Tonnage [t]	Grade [TGC%]	Low -25%	Base	High +25%	
Indicated Resource	34 663 680	6.13	\$31 920 000	\$37 553 000	\$46 941 000	
Inferred Resource	61 993 080	5.81	\$54 106 000	\$63 654 000	\$79 567 000	
Total	96 656 760	5.92	\$86 026 000	\$101 207 000	\$126 508 000	

The previous valuation results for PL10332/2014 (now PL12456/2023) were as follows:

These valuation results were based on market comparables only, due to the nature and stage of project development at that point in time.

#### Valuation

With regards to the market comparables methodology, Bowline was able to source additional information regarding several mineral property transactions from the public domain and from Bowline's database. Bowline consolidated the applicable data for comparison and was able to determine a weighted average price per tonne of graphite ore per percent of graphite grade (TGC). By applying the weighted average unit price, the following valuation results are achieved:

Market Approach Valuation Results						
Valuation	Tonnage [t]	Grade [TGC%]	Low -25%	Base	High +25%	
Measured Resource	7 200 000	5.81	\$7 696 000	\$9 054 000	\$11 318 000	
Indicated Resource	44 100 000	5.89	\$43 009 000	\$50 598 000	\$63 248 000	
Inferred Resource	93 500 000	6.72	\$86 695 000	\$101 994 000	\$127 493 000	
Total	144 800 000	6.42	\$137 400 000	\$161 646 000	\$202 059 000	

Therefore, utilizing a confidence factor of 85%, Bowline estimates the **Mineral Property Value to be** in the order of between US\$ 137 million and US\$ 202 million.

With regards to the discounted cashflow methodology, Bowline developed a technical economic model to simulate the future operation's performance. The following key assumptions were used in the development of the model:

- Mineral Resources
  - $\circ$  ~ 100% of Measured and Indicated Resources of 51.3 Mt @ 5.88 % TGC
  - 20% of Inferred Resources of 18.7 Mt @ 6.72 % TGC
  - With a total tonnage applied in financial model of 70 Mt @ 6.10 % TGC
- Production Data
  - Full Production Rate 150 000 tonnes of coal (run of mine) per month generating a life of mine of a minimum of 30 years.



- Production ramp-up includes Stage 1 First Pit First Plant
- Yields post beneficiation average of 80% producing approximately 80 000 tonnes of graphite concentrate at 95 % TGC, for export sales
- Capital Expenditure of \$ 105 million
- Additional, ongoing capital of approximately 1% of revenue was applied per month in the techno-financial model.
- All unit cost estimates emanate from benchmarking exercises done by Bowline and The Pula Group
  - Mining cost \$ 5.00 per tonne of RoM ore (assuming 10% of this cost is fixed)
  - Processing cost of \$ 34.00 per tonne of RoM ore (assuming 50% of this cost is fixed)
  - Overhead cost of \$ 6.00 per tonne of RoM ore (assuming 100% of this cost has fixed)
  - Off-mine logistics and sales costs at an average of 2% of the Graphite concentrate basket price
- Sales terms (as per the MOU with The Pula Group's Singaporean offtaker) \$ 1700 / tonne of graphite concentrate (as a basket price for various flake sizes)
- Discount rate 10 % (typical for financial institutions when doing their own project evaluations)

Following the details described in the Valuation report itself, the following results were achieved:

Income Approach Valuation Results					
Valuation	Low -25%	Base	High +25%		
Mineral Property Value	\$ 122 415 000	\$ 144 018 000	\$ 180 022 000		
Equivalent Graphite Concentrate Price Sensitivity	US\$ 1630	US\$ 1700	US\$ 1817		

## **Valuation Conclusion**

Emanating from the two sets of valuations conducted, i.e. market approach and the income approach, the valuations ranges can be summarized as follows:

Summary of Valuations' Results					
Mineral Property Valuation	Base	High +25%			
Market Approach (Market Comparables methodology)	\$137 400 000	\$161 646 000	\$202 059 000		
Income Approach (DCF methodology)	\$ 122 415 000	\$ 144 018 000	\$ 180 022 000		

Comparing the results from the two valuation approaches, it is found that there is a minor variation of approximately 12%. Therefore, Bowline is comfortable applying an average of the two approaches and presenting the final valuations results as follows:

Final Valuations' Results					
Mineral Property Valuation	Low -25%	Base	High +25%		
Valuation Average Results	\$129 900 000	\$152 800 000	\$191 300 000		



# 1. DISCLAIMERS

## 1.1. Disclaimer and Risks

This report has been prepared by Bowline Professional Services (Pty) Ltd ("Bowline") and has utilised information relating to expectations provided to it by The Pula Group LLC, the holding company for Pula Graphite Partners Tanzania Limited and Pula Carbon Tanzania Limited, who is the owner of the Ruangwa Graphite Project ("mineral asset" or "mineral property"). Where possible, Bowline has attempted to verify this information from independent sources after conducting high level reviews on all material issues that are required for this report. Bowline and its directors accept no liability for any losses arising from reliance upon the information presented in this report.

The valuation estimates involve a number of risks and uncertainties that could cause actual results to differ materially.

This report includes calculations that may involve a degree of rounding and consequently introduce minor errors. Where such errors occur, Bowline does not consider them to be material.

### 1.2. Macro-economic Risks

Factors such as political and industrial disruption, Governmental actions, currency fluctuation and interest rates could have an impact on Ruangwa Project's future operations, and potential revenue streams. The majority of these factors are, and will be, beyond the control of the mine owner or any other operating business.

#### **1.3.** Forward Looking Statements

Certain statements contained in this document other than statements of historical fact, contain forward-looking statements regarding the Ruangwa Project's development, operations and future potential economic performance; including but not limited to information concerning the economic outlook for the graphite market.

Although Bowline believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to be correct.

#### 1.4. Declarations

Bowline will receive a fee for the preparation of this report in accordance with normal professional consulting practice. Bowline does not have, at the date of this report, any financial interest in the Ruangwa Project. Bowline considers itself to be independent as defined in The Canadian Institute of Mining, Metallurgy and Petroleum Code for the Valuation of Mineral Properties ("CIMVAL").



# 2. INTRODUCTION

# 2.1. Terms of Reference

Bowline Professional Services (Pty) Ltd (Bowline) was appointed by The Pula Group LLC to conduct a mineral asset valuation of their Ruangwa Graphite Project located in the Lindi region of the Ruangwa District in Tanzania.

The Ruangwa Graphite Project, owned by Pula Graphite Partners Limited (a wholly owned subsidiary of The Pula Group) comprises four prospecting licenses; of which this valuation report focuses on prospecting license PL 12456/2023 only. The following table highlights the four prospecting licenses:

Table 1 – Prospecting Licenses for Ruangwa Graphite Project				
Prospecting License	Status and Comments			
PL 12456/2023 Previously known as PL 10332/2014	Prospecting license is in the name of Pula Carbon Tanzania Limited, which has appointed Pula Graphite Partners Limited as its duly authorized representative.			
	Prospecting license is at an advanced stage of exploration, including preliminary feasibility studies and economic assessment of future operational potential.			
	The asset has a declared Mineral Resource statement as per NI43-101 Technical Reporting (DMT Kai Batla (Pty) Ltd, 2024), which includes Measured, Indicated and Inferred Resources.			
	This asset is included in this valuation report.			
PL 12457/2023 Previously known as PL 10327/2014	Prospecting license is at an early stage of development, with geology reconnaissance and field mapping data. This asset is not included in this valuation report.			
PL 12453/2023 Previously known as PL 10438/2014	Prospecting license is at an early stage of development, with geology reconnaissance and field mapping data. This asset is not included in this valuation report.			
PL 12454/2023 Previously known as PL 10379/2014	Prospecting license is not yet explored. This asset is not included in this valuation report.			

This valuation report was to be prepared in accordance with the standards and guidelines as prescribed in the recognised code for the valuation of mineral properties known as "The CIMVal Code"; as adopted by the Canadian Institute for Mining, Metallurgy and Petroleum (the "CIM"). This valuation is also to be read in conjunction with the NI43-101 Technical Report completed by DMT Kai Batla in March 2024.

## 2.2. Purpose of the Valuation

The main purpose of this valuation report is to provide The Pula Group with an updated value of the PL 12456/2023 prospecting license based on the recent upgrade of the mineral resource estimation emanating from additional exploration drilling conducted during 2023.



# 2.3. Intended Use of the Valuation

This valuation report is intended to be used in support of The Pula Group's efforts to raise the appropriate capital funding to further develop the project and take it into project execution; with the ultimate aim of taking the project into operation.

This valuation may also be used to support any shareholding value that The Pula Group may assign to the project itself, or indirectly into any other company valuation that The Pula Group may consider for itself or its subsidiaries, as may apply.

## 2.4. Report And Valuation Date

This valuation report is dated 27 March 2024; and the valuation date is effective as of 1 March 2024.

#### 2.5. Mineral Property Identification

The Ruangwa Graphite Project, with specific reference to PL12456/2023, is located in the Ruangwa District within the Lindi Region of Tanzania. The license area is approximately 19 km north of Ruangwa Town itself. The following table provides the coordinates of the prospecting license area:

Table 2 – License area for PL12456/2023					
CORNERS	LATITUDE	LONGITUDE			
1	09°53′30.00″	38°55'00.00″			
2	09°53′30.00″	38°54'00.00″			
3	09°48′58.40″	38°54'00.00"			
4	09°48′58.40″	38°55'00.00"			
5	09°49′00.07″	38°55′00.00″			
6	09°49'00.25″	38°54′58.91″			
7	09°51′24.29″	38°55'00.00"			

The following figure shows the locality of the prospecting license within the Lindi Region:





PL12456/2023 is owned by Pula Carbon Tanzania Limited, with its address stated as PO Box 23124, Dar es Salaam, Tanzania. The prospecting license was renewed on 2 August 2023 and is valid for 48 months from the date of renewal. (refer to Appendix A)

# 2.6. Description of the Mineral Property

The Ruangwa Graphite Project, and with specific reference to PL 12456/2023, covers an area of approximately 1517 ha. This particular prospecting license is an extension of the graphite schist deposit found in the Magnis Nachu Graphite Project.

## 2.7. Qualified Valuator AND Statement of Independence

This report has been prepared by Mr Breton Scott, an independent consultant working for Bowline Professional Services (Pty) Ltd, which an independent mining and mineral project development firm based in Johannesburg, South Africa.

Neither Mr Scott nor the members of Bowline Professional Services (Pty) Ltd have or will have any material interest in The Pula Group, its subsidiaries or the Ruangwa Graphite Project.

## 3. BASIS OF VALUE

This valuation report has been prepared on the basis of determining a fair market value for the Ruangwa Graphite Project's prospecting license PL 12456/2023.

The Organisation for Economic Co-operation and Development (OECD) defines Fair Market Value as the price a willing buyer would pay a willing seller in a transaction on the open market. (International Valuation Standards Council, 2016)

The valuation estimations were conducted and presented in United States Dollars (USD).

The determination of fair market value forms the basis of what The Pula Group could use to raise the necessary equity and/or debt finance to further develop the project, or to potentially determine shareholder value for the Ruangwa Graphite Project if it were to be sold, in an arm's length transaction, in its current form.

"in an arm's length transaction" is one between parties who do not have a particular or special relationship, e.g., parent and subsidiary companies or landlord and tenant, that may make the price level uncharacteristic of the market or inflated because of an element of special value. (International Valuation Standards Council, 2016)

This valuation has utilized two valuation approaches, with the Market approach being the primary valuation approach and the Income Approach as the secondary valuation approach; as defined by the CIMVAL Standards (Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum, 2019). This is discussed in more detail in Section 17 below.

The list of terms, definitions, abbreviations and acronyms used in this report are as follows:



Table 3 – List of Terms and Definitions				
Basis of Value	Bases of Value (sometimes called standards of value) describe the fundamental premises on which the reported values will be based, commonly refers to Market Value or Fair Market Value.			
Competence	Means having relevant qualifications and relevant experience in the particular subject matter or area of expertise.			
Competent / Qualified Person	Means an individual who (a) is an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining; (b) has at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice; (c) has experience relevant to the subject matter of the mineral project and the technical report; (d) is in good standing with a Professional Association; and (e) in the case of a professional association in a foreign jurisdiction, has a membership designation that (i) requires attainment of a position of responsibility in their profession that requires			
	the exercise of independent judgment;			
Fair Market Value	Means the highest price, expressed in terms of money or money's worth, obtainable in an open and unrestricted market between knowledgeable, informed and prudent parties, acting at arm's length, neither party being under any compulsion to transact at a given point in time.			
Income Approach	This a valuation approach based on the principle of anticipation of benefits and includes all methods that are based on the income or cash flow generation potential of the Mineral Property.			
Independence	Means that the Qualified Valuator has no financial or beneficial interest, either present or contingent, in the Commissioning Entity, the Mineral Property being valued, other parties involved in a transaction on the Mineral Property, or the outcome of the Valuation, other than professional fees and disbursements related to the Valuation assignment. It also refers to the Qualified Valuator's independent train of thought while conducting the various valuation activities.			
Market Approach	This valuation approach is based primarily on the principle of substitution. The Mineral Property being valued is compared with the attributed transaction value of similar Mineral Properties, transacted in an open market.			



Materiality	Means all relevant information that investors and their professional advisers would reasonably require, and reasonably expect to find in a Valuation Report for the purpose of making a reasoned and balanced judgement regarding the Valuation.
Mineral Asset	In this report <i>Mineral Asset</i> may be used interchangeably with <i>Mineral Property</i> .
Mineral Property	Means any right, title, or interest to property held or acquired in connection with the exploration, development, extraction, or processing of minerals that may be located on or under the surface of such property, together with all fixed plant, equipment, and infrastructure owned or acquired for the exploration, development, extraction, and processing of minerals in connection with such property. Such property shall include, but not be limited to, Real Property, unpatented mining claims, prospecting permits, prospecting licences, reconnaissance permits, reconnaissance licences, exploration permits, exploration licences, development permits, development licences, mining licences, mining leases, leasehold patents, crown grants, licences of occupation, patented mining claims, and royalty interests.
Mineral Reserves	Means the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at a Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant, whereby a saleable product can be generated.
Mineral Resources	Means a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.
Objectivity	Means acting impartially and without bias.
Qualified Valuator	Means an individual who (a) is a professional with demonstrated extensive experience in the Valuation of Mineral Properties, (b) has experience relevant to the subject Mineral Property or has relied on a Current Technical Report on the subject Mineral Property by a Qualified Person, and (c) is regulated by or is a member in good



	standing with a Professional Association or a relevant Self-Regulatory Professional Organization. Qualified Valuator also means a corporation, partnership, or other entity, that can demonstrate that (d) it has relevant experience in providing Valuations of Mineral Properties, (e) it is a member in good standing of a relevant regulated or self regulated organization, which has the ability to discipline its members, and (f) its professional employee or partner responsible for the Valuation is an individual who is a Qualified Valuator.		
Reasonableness	Means that other Qualified Valuators with access to the same information for the same Valuation Date and Basis of Value as the Valuator of a Mineral Property would consider the Valuator's estimate of Value to be within a reasonable range of Values.		
Transparency	Means a clear and unambiguous presentation of the Valuation in the Valuation Report, which includes all Material information on which the Valuation is based, such that the reader can understand the Valuation and not be misled.		
Valuation	The estimation of the Value of a Mineral Property in money or monetary equivalent.		
Value	Is a generic term that may refer to any one of the definitions in this CIMVAL Code using the word "Value", such as "Basis of Value", "Fair Market Value", "Investment Value", "Special Value", "Synergistic Value", "Valuation", and "Valuation Conclusion".		



Table 4 – List of Abbreviations and Acronyms				
PL	Prospecting License			
BFS	Bankable Feasibility Study			
CIM	Canadian Institute of Mining, Metallurgy & Petroleum			
CIMVAL	The Canadian Institute of Mining, Metallurgy and Petroleum Code for the Valuation of Mineral Properties			
CRM	Certified Reference Material			
DCF	Discounted Cashflow			
EPCM	Engineering, Procurement and Contract Management			
EV	Electric vehicles			
DMT	Refers to DMT Kai-Batla (Pty) Ltd			
IRR	Internal rate of return			
JORC	The Australasian Code for reporting of exploration results, mineral resources and ore reserves; managed by the Australian Joint Ore Reserves Committee.			
LoM	Life of Mine			
MOU	Memorandum of understanding			
MRE	Minera; Resource estimate			
NI 43-101	The Canadian Securities Administrators' National Instrument 43-101 Standards of Disclosure for Mineral Projects			
NPV	Net present value			
NQ	Acronym for drill rods of a particular N-size and Q-group wireline diamond drilling system			
PFS	Pre-feasibility Study			
PSD	Particle size distribution			
Pula	Refers to The Pula Group and/or Pula Graphite Partners, and is used interchangeably in the report depending on the context in the specific section referenced			
QA / QC	Quality assurance and quality control			
RC Drilling	Reverse circulation drilling			
RoM	Run of Mine			
SAMREC	The South African Code for the Reporting of Exploration Results, Mineral Resources and Reserves Estimation			
SAMVAL	The South African Code for the Reporting of Mineral Asset Valuation			
TGC%	Total graphitic carbon percentage			
TSF	Tailings storage facility			
USD or US\$	United States dollar			
ZAR	South African rand			



## 4. SCOPE OF WORK

This mineral property valuation has evaluated all the material information provided to the Qualified Valuator in terms of the current project development status as well as information projecting future operational performance emanating from early-stage feasibility studies.

### 4.1. Information Reviewed and Utilised

The following list of information was reviewed, utilized and relied upon while determining the fair market value of the mineral property (International Valuation Standards Council, 2016):

- Information available to the Qualified Valuator at the time of preparation of this report.
- Assumptions and valuation criteria as set out in this report.
- Data, reports, and other information supplied by The Pula Group.
- Pula Graphite Independent Business Plan February 2023 Rev0
- Pula Graphite Independent Business Plan June 2018
- NI 43-101 Mineral Resource Estimation Technical Report, Pula Graphite Project, Tanzania
- Various sources of market data found in the public domain, specifically referenced in the Section 16 and 17.

## 4.2. Reliance on Other Experts

The valuation report was prepared by Bowline Professional Services (Pty) Ltd and has not relied on any other specific experts in conducting the valuation itself; other than those experts responsible for generating the data and reports highlighted in the previous sub-section (Section 4.1)

## 4.3. Data Verification

The Qualified Valuator, by virtue of his skills and expertise outside of mineral property valuations, conducted an internal due diligence and review of all the technical and economic information provided.

The Pula Group provided copies of the associated prospecting licenses comprising the Ruangwa Graphite Project, to Bowline, and as such confirming the legal status of the licenses themselves as well their ownership.

The Qualified Valuator has deemed the information provided to be materially reliable and suitable for use in this valuation report.

#### 4.4. Site Visit Conducted

Mr Breton Scott has conducted several site visits to the PL 12456 project area, with the most recent site visits conducted during,

- 15 November 2023 to 17 November 2023
- 28 November 2022 to 30 November 2022
- 19 October 2020 to 27 October 2020



## 4.5. Additional Disclaimers

The graphite market is a relatively informal and immature market when compared to other commodities such as coal, chrome, gold or ferrous and non-ferrous metals. Therefore, Bowline has relied on information readily available in the public domain as well as information emanating from discussion held with The Pula Group's future off-takers, of which The Pula Group has a signed memorandum of understanding (MOU). Bowline has used this information to inform the assumptions regarding future market outlook for the graphite industry as well as for forecasting graphite concentrate pricing.

### 5. COMPLIANCE WITH THE CIMVAL STANDARDS

This valuation report has followed the guidelines and standards of the CIMVAL Codes (2019) and, within the constraints of the current status of the Ruangwa Graphite Project's development, the valuation report complies with the CIMVAL standards.

The structure of the valuation report is in line with Section 2.10 of the CIMVAL Codes.

### 6. PROPERTY LOCATION, ACCESS AND INFRASTRUCTURE

With further reference to Section 2.5 and Table 2 above, the prospecting licence PL12456 is located in the Ruangwa District within the Lindi Region of Tanzania. The license area is approximately 19 km north of Ruangwa Town itself and more specifically, is in QDS 283\_3 (Matandarwe), 80 km north of the Nachingwea airport and 20 km north of Mbekenyera town.





The project license area can be easily accessed via recently upgraded highways and provincial roads. The Lindi Region itself, can be accessed via road from Dar Es Salaam, but is becoming more popular to fly in to the domestic airports of either Mtwara, Lindi or Nachingwea Airports.

For the future mining operation, reliable road access from the project site to the Mtwara Port exists. This route is approximately 200 km. The Mtwara Port has been recently upgraded to accommodate future graphite concentrate storage prior to shipping to the overseas markets.



The project site has local infrastructure in place, and in particular bulk power supply and access to sufficient ground water suitable for a future graphite processing operation. Albeit that a power line runs through the prospecting license, The Pula Group has a strategic project objective to introduce as much green energy technology into the project development and mine infrastructure designs.

Various services and supplies to the future operation can easily be managed via shipping to the Mtwara Port and/or via road to the project site directly.

Tanzania as a whole, is a stable and mature country with no political or social unrest and has no material risk of terrorist activity in the country. The same hold true for the Runagwa District within the Lindi Region.

## 7. PROPERTY OWNERSHIP, STATUS AND AGREEMENTS

With further reference to Section 2.5 and Table 2 above, the prospecting licence PL12456 is 100% owned by Pula Carbon Tanzania Limited, which is 100% owned by The Pula Group LLC. While Pula Graphite Partners Tanzania Ltd, is also a 100% owned subsidiary of the Pula Group, Pula Graphite Partners Tanzania Limited has been duly appointed, by the Board of Pula Carbon Tanzia Limited, as its authorized representative. There is a formal Board resolution and agreement in place confirming the same (Directors Pula Carbon Limited, 13 December 2023).



The following diagram, provides the organizational structure of The Pula Group LLC:



Table 5 – Prospecting License for the valuation						
Prospecting License	Rene Da	ewal te	Expiration Date	Status and Comments		
PL 12456/2023 Previously known as PL 10332/2014	02 / 20.	Aug 23	01 Aug 2027	Prospecting license is in the name of Pula Carbon Tanzania Limited, which has appointed Pula Graphite Partners Limited as its duly authorized representative. Prospecting license is at an advanced stage of exploration, including preliminary feasibility studies and economic assessment of future operational potential. The asset has a declared Mineral Resource statement as per NI43-101 Technical Reporting (2024), which		
		1		Includes Measured, Indicated and Inferred Resources.		
			Corners		Latitude	Longitude
			1		09°53'30.00"	38°55'00.00"
License Area		2			09°53′30.00″	38°54'00.00"
		3			09°48′58.40″	38°54'00.00″
		4			09°48′58.40″	38°55'00.00"
		5			09°49'00.07"	38°55'00.00"
					09°49'00.25"	38°54'58.91"
		7			09°51'24.29"	38°55'00.00"

The project area specifically being valued can be summarized as follows:

Pula Graphite Partners, on behalf of Pula Carbon, is currently preparing the documentation for its mining license application and is awaiting the outcome of its environmental authorisation application. No specific constraints have been identified by the authorities at this point in time.



There is a small community directly adjacent to the site identified for the first mining pit. Consultations are underway with this community for their possible relocation in the near future. At this stage of the project's development, this is deemed a commercial or capital cost risk only, which has been included in the capital cost estimates applied to the project evaluations to date.

# 8. HISTORY OF EXPLORATION AND PRODUCTION

The Pula Group has been systematically upgrading their geological database for the mineral property since 2016. The mineral property has only been owned by The Pula Group and no other parties have conducted exploration works. The following list, provides a summary of the exploration activities, to date:

- Geological mapping, soil geochemistry, IP dipole-dipole, magnetic surveys, and 30 trenches of approximately 1023m were conducted in 2016. This research suggested the region has significant amount of graphite. Studies found graphite schist and coarse flake, high-grade graphite ores. This ore contains zones of mineralization comprising 3%–5%, 5%–18%, and 25%–50% total graphitic carbon (TGC%). The two main graphite blocks (known as Zone A and Zone B, referred to in Section 10) included massive Mineral Resources with over 50% high-grade material with large flakes. Approximately 100 million tonnes of hypothetical graphite ore were identified in both blocks.
- Additional exploration was conducted in July 2017 by The Pula Group. Nine (9) RC drill holes were drilled to confirm graphite mineralization continuity along strike and down dip; mineralogical composition, mineralized domains, TGC%, flake size, and deleterious minerals or components were measured. All 1 m-interval samples were packed, marked, and sampled according to DMT requirements.

Table 6 – 2018 Mineral Resource Estimate				
Indicated Resource	TGC Cut-off %	ff % Tonnes		
	0.0	50 950 080	4.62	
	1.0	44 405 280	5.24	
	2.0	40 138 200	5.64	
	3.0	34 663680	6.13	
	4.0	25 576 560	7.06	
	5.0	17 646 120	8.23	
	6.0	11 696 400	9.64	
	7.0	8 225 820	11.00	
	8.0	5 570 640	12.67	
	9.0	4 393 440	13.79	
	10.0	4 393 440	13.79	
Inferred Resource	TGC Cut-off %	Tonnes	TGC%	
	0.00	107 958 420	3.91	

The previous Mineral Resource Estimates compiled by DMT in 2018, post the 2017 exploration programme is highlighted below:


1.00	88 906 140	4.67
2.00	75 982 860	5.19
3.00	61 993 080	5.81
4.00	43 843 140	6.75
5.00	21 881 880	8.90
6.00	14 810 040	10.61
7.00	10 290 780	12.39
8.00	6 969 780	14.77
9.00	6 072 840	15.71
10.00	4 571 640	17.70

**\*Note:** DMT declared the tonnages above a 3% TGC cutoff grade as the official Mineral Resource Estimate

Further exploration work was conducted in 2023 and is detailed in Section 10 below.

At this point in the project's development, there have no formal Mineral Reserves being estimated as yet; and also there is no production history that can be reported as yet.

The Ruangwa mineral property has two major neighbouring projects, i.e. the Lindi Jumbo owned Walkabout Resources and the Nachu project owned by Magnis Resources. The Ruangwa mineral property is a direct extension of the Nachu Project.

- Lindi Jumbo Project (Energy Capital & Power, 2023), (Barradas, 2023)
  - Location: South-east Tanzania.
  - Project Owner: Walkabout Resources.
  - Mineral Resources and Reserves of approximately 42 million tonnes
  - Total Graphitic Carbon (TGC): 17.9%.
  - Mine Life: Approximately 24 years
- Nachu Project (Energy Capital & Power, 2023), (Mining Technology, 2016)
  - Location: West of the coastal city of Lindi, south-east Tanzania.
  - Owner: Magnis Resources.
  - Mineral Resources of approximately 174 million tonnes.
  - Total Graphitic Carbon: 5.4% at a 3% Cg cut-off grade.
  - Mine Life: Approximately 40 years.



# 9. GEOLOGY AND MINERALISATION

#### 9.1. Geological setting and mineralization

The Prospecting License PL102456/2023 is geologically classified under the Usagaran (Mozambique belt) Proterozoic system with structural trends within the Usagaran system hosting deposits such as gold, nickel, copper, gemstones (tourmaline, red garnet, tanzanite) and the highest-grade coarse graphite flakes in the country (DMT Kai Batla (Pty) Ltd, 2024). The analysis of graphite ore samples in this region have shown on average a major content of large flakes of crystalline and expandable graphite with twenty percent (20%) jumbo flakes (+300 $\mu$ m), fifty percent (50%) large flakes (+180 $\mu$ m), twenty percent (20%) medium flakes (-180+106 $\mu$ m), and ten percent (10%) fine grains. In finished graphite flakes, this ore is upgradeable up to approximately 94% carbon.

The study area, which hosts a shallow deposit outcropping on surface and evaluated to a depth of approximately 200 m, is underlain by mica schists, quartzite, quartz feldspar gneisses, granitic gneisses, amphibolites and garnetiferous amphibolitic gneisses, marble and micaceous graphitic schists. Structural measurements taken within the northern portion of the study area, indicates that the graphitic schist strike east- west at approximately 250° to 260° and dip of 30° to 50° south-east. Within the vicinity of the Ruangwa study area, schists and gneisses hosting graphite trend northeast to southwest and dip in a southeasterly direction of which PL102456/2023 is located within this mineralized corridor.

#### 9.2. Deposit Mineralisation

The NI43-101 Technical Report (DMT Kai Batla (Pty) Ltd, 2024) advise that most graphite mines worldwide have 2% to 4% carbon ore, however the Lindi district has 7% to 8%. Lindi's graphite resources are less than 200 m deep. Micaceous schist hosts graphite lenses and bands. Disseminated graphitic schist becomes friable and softer in oxidising environments. Slightly-to-intensely silicified graphitic lenses with a high graphite content resist erosion and generate positive topography. The Pula Licences' graphite are similar to the Nachu and Lindi Project's strike. Thus, flake distribution is approximately 70% medium to extra large and 30% fine. This ratio is better than global 25:75 ratios.

#### 9.3. Deposit Type

In much of the Neoproterozoic Mozambique Mobile Belt (NMMB), graphite is found in eastern Tanzania's North-South strike. Moye and Msabi (2021) found that graphite mineralisation in Chenjere supports the syngenetic model due to its medium-to-coarse crystalline flake type. The graphite mineralization suggests metasedimentary origin, with a maximum grade of 16wt.% as dispersed flakes in graphitic gneiss host rock. The graphite mineralisation host lithology follows the NE-SW trend of the area's lithologies with few exceptions. The extent, grade, and flakes size of biotite gneiss mineralised zones make the study area economically viable for graphite mining.

#### **10. EXPLORATION RESULTS AND POTENTIAL**

In May 2023, the Pula Group commissioned further exploration programmes to collect additional data through diamond and reverse circulation drilling in Zone A and Zone B of its tenements. Table **7** provides a summary of the work completed in addition to the historical exploration work completed on the property as described in Section 8 above.



Table 7	Table 7 – Summary of exploration drilling work – 2023 (DMT Kai Batla (Pty) Ltd, 2024)										
Task	Area	Number of samples	Comments								
Diamond Drilling	PL10332/2014	7 drillholes (721.83m)	This work was conducted to confirm the continuity of the graphitic schist, and to increase the resource confidence level of the Mineral Resource as declared in 2018.								
RC Drilling	PL10332/2014	3 drillholes (285 samples)	ALS Geochemical was appointed to conduct the laboratory work (assays)								

It is important to highlight that this exploration was conducted on Zones A and B only within the prospecting license. The license area has already identified Zones C to E, where graphitic schist outcrops have been found (Refer to the diagram below). Therefore, it would be prudent to note that further exploration potential exists on the prospecting license area.



The oversight of the drilling programme was conducted by a reputable and independent consulting firm, i.e. DMT KaiBaltla, who were also responsible for the estimation of the Mineral Resources as stated in the NI43-101 Technical Report.



## 11. DRILLING, SAMPLING, ASSAYING AND DATA VERIFICATION

## 11.1. Drilling

With reference to the NI43-101 technical report (2024), the initial data collection was conducted in 2017; Phase 1. To increase the resource confidence of the Pula graphite deposit, Pula embarked on an additional drilling programme; Phase 2. A further seven (7) diamond drillholes and three (3) RC drillholes were planned and drilled in June-July 2023. Approximately 721.8 m of diamond core and 285 m RC chips were additionally drilled within the mineralised zone. The drill-core was split in half these were used to generate samples for analytical testing at ALS Geochemistry laboratory, Johannesburg, South Africa.

The phase 2 drilling was conducted to infill between the previous drillholes and to extend drilling to other parts of the deposit targeting the potential graphite mineral occurrences, in particular to include Zone B. Moreover, the phase 2 drilling focused on enhancing the 2018 geological model and was planned to increase the confidence in the interpretation of historical data.

DMT served as the advisory towards the phase 2 drilling and ensured the drilling programme was executed in line with standard operating procedures. All seven diamond drillholes were drilled using a NQ diamond drill bit of size that generates a 75.7 mm hole diameter and produces core with 47.6 mm diameter. Generally, lower rates of recoveries ranged below 80% at approximately the first 7 meters of core runs. However, the actual recoveries reported range from 87 % to 96 %, which is acceptable for the level of project development.

Subsequent to drilling, all samples were logged according to the predetermined coding for lithologies; i.e. GSC- Graphite, DGSC- Disseminated Graphite Schist, QV – Quartz vein, PGE - Pegmatite, NR-No Recovery, SOL-Soil, MSC – Garnet Mica Schist; including notes for the major and minor rock types, colour, grain size, structure, texture, contact, type and degree of mineralization, type, and degree of alteration. Data was formerly documented using the standard DMT logging sheets. Information regarding lithologies, alteration, mineralization, structure, assay or geochemical samples and QA/QC samples were captured into the geology database.

#### **11.2.** Sample Preparation, analysis and security

This section summarises the approach to sample preparation, analysis, and security as it relates to the ten (10) drillholes drilled during 2023 drilling programme. Pula Graphite Partners' Chief Geologist was responsible for supervising the drilling and sampling program in Tanzania, and the DMT Geologists were responsible for the quality assurance (QA) and quality control (QC) sampling and dispatch of the samples to the laboratory in South Africa.

Once the core was logged and marked for sampling, the sample number was marked on the corresponding core interval. The average core interval or sample length of 1 m was applied. These lengths were based on the lithological boundaries observed. The RC chip samples were collated on site and were appropriately split into the sample size required and were then sealed and labelled accordingly. The original diamond core samples, were halved and then, bagged, and labelled in a similar fashion. The remaining half core was relabeled to indicate meter marks, lithological contacts and sample numbers. The marking was done on the cut surface of the core.



An assaying quality assurance and quality control (QA/QC) protocol was applied to the Pula graphite samples, including insertion of certified reference material (CRM), and duplicates (at a ratio of 1 to every 20 samples) to check for laboratory accuracy, precision and cross-contamination. All samples were sent to the ALS Geochemical laboratory (ISO 17025:2017 certification and certification to ISO 9001:2015) to carry out the sample registration, sample weighing, sample preparation and analyses. A total of 299 samples were submitted for analysis and this included 36 samples that were submitted for QA/QC purposes.

The Total Graphitic Carbon (TGC) content was determined whereby carbonate material is removed by a reaction with Hydrochloric acid, followed by roasting each sample at 425°C to remove any organic carbon, and having the residue analyzed to Total Combustion using a Carbon-Sulphur analyzer.

A total of 18 CRMs (or Standard) were inserted into the sampling stream. The standard, CDN-GR-1, was sourced from CDN Resource Laboratories Ltd. located in Langley, British Columbia, Canada. This CRM has a certified value of 3.12% TGC ± 0.11.

A total of 18 duplicate samples were inserted into the sample stream. All the duplicate samples have less than a 5% error in the analytical procedure, implying that the assaying laboratory has excellent repeatability.

#### 11.3. Data Verification

Data submitted by Pula was reviewed and validated by DMT. The DMT geologists conducted a site visit to the core yard to verify the recovered core and establish project sampling protocols. A stringent QA/QC programme was also adopted. The borehole database was checked for data quality, assay results precision and accuracy by the qualified person (QP) preparing the NI43-101 report and Mineral Resource Estimate (MRE). Logging and sampling of the diamond boreholes was carried out according to acceptable industry standards to ensure the data could be used in the compliant Mineral Resource estimate.

As part of the study to attain an NI43-101 compliant MRE, DMT completed a detailed validation of the data used to generate the geological model and Mineral Resource. This validation included:

- Visits by the DMT team to conduct the relevant project site and laboratory inspections.
- Verification of the geographic reference system for the topographic surface, and the Ruangwa Project, hence spatial verification between the surface collars, the surface topography as well as any anomalous deviations from survey data could be concluded.
- Validation of duplicate coordinates and/or anomalous height values outside the topographic surface.
- Consistency between the TGC data reported in the assay table versus the laboratory certificates.
- Search for duplicate or abnormal records in the various tables of the database, and QA/QC.
- Verification of the reported values of TGC in the geology / mineral resource model.
- Verification of the quality and interpretation of geological and sampling information developed, specifically TGC grade distributions appropriate for the mineral resource model.
- Reviewed the QA/QC database for the drilling sampling programmes.
- Sample preparation and assaying laboratory visits in ALS in Johannesburg by the DMT Project Geologist.



#### 12. MINERAL RESOURCES AND MINERAL RESERVES

DMT Kai-Batla prepared a Mineral Resource Estimate in accordance with NI 43-101 technical report standards (Canadian Securities Administrators, 2011) for the Ruangwa Project, which incorporates the reverse circulation and diamond drilling completed in 2023 for which the drill hole data could be confidently confirmed. The classification of the mineral resource is based upon the ranges observed in the variogram models and the number of the drill hole composites that went into estimating the blocks (comprising the geology block model).

The results disclosed in the Report are graphitic carbon Mineral Resources estimated to be contained within different lenses of considerable thickness, which are relatively homogenous and with some discontinuities present within several different lithologic units in the Ruangwa Project's deposit.

DMT Kai-Batla released the Mineral Resource Estimate on the 29<sup>th</sup> February 2024. The results are tabulated at various TGC thresholds and are presented below for Measured, Indicated and Inferred Mineral Resources (refer to Table 8). The Classified Resources stated below are estimated as values above a minimum cut-off grade of 3.0% TGC:

- Measured Mineral Resource of 7.2Mt grading at 5.81% TGC.
- Indicated Mineral Resource of 44.1Mt grading at 5.89% TGC.
- Inferred Mineral Resource of 93.5Mt grading at 6.72% TGC.

	Table 8 – 2024 Miner	al Resource Estimate			
	TGC Cut-off %	Tonnage (Mt)	TGC%		
	0.0	9.8	4.74		
	1.0	9.4	4.95		
	2.0	8.7	5.25		
	3.0	7.2	5.81		
Massured Persource	4.0	4.6	7.09		
weasured Resource	5.0	2.7	9.01		
	6.0	2.1	10.01		
	7.0	1.6	11.06		
	8.0	1.3	11.96		
	9.0	1.0	12.73		
	10.0	0.75	13.92		
	TGC Cut-off %	Tonnage (Mt)	TGC%		
	0.0	57.8	4.98		
	1.0	56.2	5.12		
Indicated Resource	2.0	52.7	5.35		
	3.0	44.1	5.89		
	4.0	30.8	6.93		
	5.0	19.3	8.40		



	6.0	15.1	9.22		
	7.0	11.7	10.02		
	8.0	8.7	10.89		
	9.0	6.0	11.93		
	10.0	6.015.19.227.011.710.028.08.710.899.06.011.9310.04.412.85TGC Cut-off %Tonnage (Mt)TGC%0.00130.15.291.00119.25.742.00111.76.033.0093.56.724.0070.17.785.0052.98.876.0043.89.607.0035.210.348.0025.711.389.0015.413.3210.0011.814.44	12.85		
	TGC Cut-off %	Tonnage (Mt)	TGC%		
	0.00	130.1	5.29		
	1.00	119.2	5.74		
	2.00	111.7	6.03		
	3.00	93.5	6.72		
Informed Deservice	4.00	70.1	7.78		
interred Resource	5.00	52.9	8.87		
	6.00	43.8	9.60		
	7.00	35.2	10.34		
	8.00	25.7	11.38		
	9.00	15.4	13.32		
	10.00	11.8	14.44		

The three mineral resource classifications, as estimated by DMT, honoured the following criteria, built into the geology block model:

- Measured Mineral Resources
  - These are estimates using a 60 m x 60 m x 5 m (strike/dip/thickness) with a minimum of 2 composite samples and a maximum of 5 composite samples to interpolate an estimate.
  - The ellipsoid dimension was based on approximately half the range of the first range of the spherical variogram model.
- Indicated Mineral Resources
  - These are estimates using a 250 m x 250 m x 10 m (strike/dip/thickness) with a minimum of 2 composite samples and a maximum of 5 composite samples to interpolate an estimate.
  - The ellipsoid dimension was based on approximately half the second range of the spherical variogram model.
- Inferred Mineral Resources
  - These are estimates using a 625 m x 625 m x 25 m (strike/dip/thickness) with a minimum of 1 composite sample and a maximum of 3 composite samples to interpolate an estimate;
  - The ellipsoid dimension was based on 2.5x the range of the Indicated dimensions.

Refer to the diagrammatical representation of the mineral resource classifications within the geology model below:



In addition to the MRE presented in this sub-section, it is important to highlight that while The Pula Group is conducting feasibility investigations internally, there have been no code compliant Mineral Reserves estimated or declared at this point in time.

# 13. METALLURGY

Mineral processing and metallurgical testing studies were carried out in 2017 to evaluate flake size and, to a limited extent, extractive metallurgy and to advance the characterization of the potential value of graphite deposits associated with the PL12456 and PL 12457. ISO 9001:2008-certified African Minerals and Geosciences Laboratory in Kinondoni, Tanzania, analysed the samples. Total graphite carbon (TGC) and elemental composition were assessed along with metallurgical and flakesize evaluations. Test results show graphite is abundant. The 36 samples' average headgrade was 9.5%, which exceeds economically viable resources in Tanzania. It must also be noted that 22% of these samples exceeded 12% TGC.

# 13.1. Flotation work and results

Furthermore, eight (8) additional samples were prepared for flotation and sieve analysis by compositing samples collected from specific prospective zones. This programme was conducted in April 2022. The float fraction for each sample represents the amount of graphite that was recovered in the float fraction as concentrated, while the sink fraction represents the fraction of the sample that was recovered as tailings (mainly silica sand). The laboratory conducting the testwork was Peacocke&Simpson based in Harare, Zimbabwe. This testwork show that it was possible to achieve 95% TGC concentrate after 2 stages of flotation, and with a third stage, it was possible to achieve a 96.5% TGC concentrate; with an overall yield over the 3 stages of >80% (Peacocke&Simpson, 2022).



#### 13.2. Particle Size Distribution analysis and results

Particle size distribution (PSD) analysis was performed on float products (concentrates) (DMT Kai Batla (Pty) Ltd, 2018). A representative sample of each dried float product was cut and sieved through 500, 300, 180,150, and 106-micron sieves to determine the flakes' particle size. Each fraction was weighed and recorded after sieving using an appropriate sieve shaker. Results showed mostly 300-micron flake sizes. There is a relatively small percentage below 300 microns and 500 microns. Note that these samples were taken from near-surface oxidized zones.

Clay and kaolinite are secondary minerals in the weathered zones at the project site. They have a tendency to further split graphite flakes. However, the sample results suggest that even weathered graphite is flaked and carbon-rich enough for industry, notably batteries. Importantly, Pula tenements have more significant flake sizes than the Magnis Nachu project (DMT Kai Batla (Pty) Ltd, 2018). Studies on drilling samples will show that oxidized zone flake sizes extend deeper in the fresh, unweathered rocks. It is anticipated, that should deep samples from fresh rocks be taken, they most likely have more intact and larger flake sizes.

The basic processing methodology can be summarized as follows:

Ore will be transported from the openpit onto the run of mine (ROM) pad where it will be stockpiled ahead of reporting to the plant. Ore will be fed from these stockpiles into a primary bin where an apron feeder will convey the material over a vibrating grizzly feeder designed to cut at around 150 mm.

Oversize from the grizzly feeder will be fed into a jaw crusher set to produce a -150 mm product. This crushed material will join the grizzly undersize onto a conveyor feeding a double deck vibrating screen. The screen oversize will be fed through a secondary and possibly a tertiary roll crusher to further reduce the size down to -15 mm. Care should be taken to reduce the crushing and grinding steps to ensure only minimal ultra-fines are generated, as these would be detrimental to the flotation circuit and ultimately affect the quality of the final product.

Material from the secondary and tertiary crushers will be in closed circuit with the jaw crusher discharge screen. The double deck screen undersize at -15 mm will be fed through a rod mill. Rod mills typically produce a coarser product that the equivalent ball mill; however, the use of ball mills as opposed to rod mills should also be considered pending the outcome of the testwork.

Rod mill discharge will be fed to the rougher flotation circuit with the tails from these cells reporting to a regrind ball mill to further grind the material to a suitable size for the scavenger flotation circuit.

Concentrate from the rougher and scavenger flotation cells will be fed to the cleaning and recleaning flotation circuits. The recleaner concentrate will be filtered to produce a filer cake ready for drying and then dispatch as the final product.

Pine oil is typically used as a frother to stabilize froth in the flotation cells and the collector used is normally kerosene and/or pine oils. Again, a comprehensive testwork campaign will determine the most suitable processing route along with the optimum chemicals to maximize recoveries.



#### 14. ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The mineral property does not have any major environmental risks that could materially influence the value of the property. There are, however, certain aspects that need to be highlighted. Although these are addressed briefly below, it must be acknowledged that they are not insurmountable and are actually typical of most mining projects.

- There is a small community with their village located on the northern boundary of PL12456. The village stretches between 100 m and 200 m from the proposed first mining pit. There are several dwellings that may require relocation. The Pula Group is already conducting negotiations with the relevant community leaders and a decision as to where these dwellings will be relocated is still to be concluded. The budgetary costs for these relocations are incorporated into the project's capital budget estimate.
- There are other villages on the PL12456 property, but they are located much further south. Only
  once the geology zones C, D and E prove to be viable for mining, will the future environmental
  authorisations be amended to accommodate any impact the Pula operation may have on these
  communities. It is anticipated that the Pula operation will only reach these areas in
  approximately 15 to 20 years from now.
- It is important to highlight that The Pula Group has a long-standing relationship with these communities over the past decade and no risk imposed by community interactions is foreseen.
- The Mbemkuru River cuts the northeast corner of PL12456. This is a major waterway for the area. It is approximately 700 m away from the proposed first mining pit. Owing to the strike and dip of the graphite orebody, as mining activity advances, the mining pit will systematically advance further away from the river.
- The entire PL12456 license is largely agricultural land with very little natural undisturbed land left. The majority of the farming activity involves the growing and harvesting of cashew nuts and fruit; farmed by the local communities.

The Pula Group has appointed a local environmental consultant to conduct the various environmental impact assessment and related specialist studies for the environmental authorisations. These submissions will comply with the Tanzanian laws and regulations, with specific reference to The Environmental Management (Control and Management of Carbon Trading) Regulations, 2022, The Environmental Management (Registration and Practice of Environmental Experts) Regulations, 2021, Amendments to the Tanzania Carbon Trading Regulations, 2023 and National Environmental Policy (NEP) 2021. It is planned to have this work concluded in the first quarter of 2024.





# 15. OPERATIONAL AND ECONOMIC PARAMETERS

The Ruangwa Graphite Project, with specific reference to PL12456, is current at the feasibility study stage of development. The overarching strategy for the project is to develop it in a staged approach.

- Step 1: Adopt a strategy that involves the incorporation of modular technologies
- Step 2: Simultaneous pre-project activities, i.e. various technical studies and mining licence application
- Step 3: Streamlined procurement, i.e. sourcing of modular process plant technologies
- Step 4: Expedited Project Execution phase i.e. First Pit-First Plant (12ktpa concentrate) phasing into Full Production (80ktpa concentrate)

The Stage 1 First Pit-First Plant project is ready for a detailed bankable feasibility study (BFS). The Stage 2 Full Production project will undergo a pre-feasibility study (PFS) while the Stage 1 BFS is being conducted.

Bowline Professional Services (Pty) Ltd updated the Ruangwa Project's Independent Business Plan (add reference) in 2023. This document details all the technical and economic evaluation of the Ruangwa Project, where the Stage 1 project is at a PFS level of confidence and the Stage 2 project is at a conceptual level of confidence. This section summarises the operational and economic parameters pertinent to the valuation approaches done in this report.

Table 9 – Operational and Economic Parameters (Bowline Professional Services (Pty) Ltd, 2023)									
Area of	Description	Key Economic							
Responsibility	Description	Parameters							
	Mineral Resource used in the Operations evaluation:	Included under stay							
Mineral Resource	100% Measured & Indicated @ 51.3 Mt at 5.88% TGC	included under stay-							
	20% of Inferred @ 18.7 Mt at 6.72% TGC	in-business capital							



Table 9 – Operatio	onal and Economic Parameters (Bowline Professional Ser	vices (Pty) Ltd, 2023)
Mining	Method: Openpit Surface Mining – Truck and shovel operation, with no blasting required for the first 5 years. Details: Stage 1 First Pit-First Plant – 20 ktpm RoM ore (refer to Figure 8 below showing the location and extent of the first pit as well as the proposed mine site layout) Stage 2 Full Production – 160 ktpm PoM ore	<b>Capex:</b> Stage 1 – \$ 0.5 M Stage 2 - \$ 10 M <b>Opex:</b> Stage 1 - \$7/tRoM Stage 2 - \$5/tRoM
Processing	Stage 2 Full Flotdection = 100 ktph kow oreMethod:2 stage Flotation process – comprising ore beneficiation, rougher flotation and cleaner flotationDetails:Stage 1 First Pit-First Plant – 12 ktpa concentrate @ 95% TGCStage 2 Full Production – 80 ktpa concentrate @ 95% TGCConcentrate separation (i.t.o. flake sizes) will be done by the interested off-taker.MOU for off-take is in place with a Singaporean	<b>Capex:</b> Stage 1 – \$ 1.8 M Stage 2 - \$ 50 M <b>Opex:</b> Stage 1 - \$34/tRoM Stage 2 - \$34/tRoM
Infrastructure and Engineering	<ul> <li>Trader</li> <li>Identified: <ul> <li>General Mine office and administration facilities, including ablutions and changehouse</li> <li>Tailings Storage Facility (TSF)</li> <li>Mine Roads</li> <li>Bulk power supply (a 11kV power lines runs through PL12456 within 2 km from the project site.</li> <li>Bulk water supply (sufficient ground water is available to service the various mine operations)</li> <li>A small water treatment plant is being considered predominantly for sustainable potable water supply</li> <li>Mine roads and fencing</li> </ul> </li> <li>Level of detail design: <ul> <li>The design of the above infrastructure is at a conceptual level of design.</li> <li>The detail designs will take place in the next round of feasibility studies planned to commence in the second quarter of 2024.</li> </ul> </li> </ul>	Capex: Stage 1 - \$7.7M (including EPCM) Stage 2 - \$45M (including EPCM) Ongoing Stay-in Business Capital: 1% of revenue, or Stage 1 - \$0.02M per month Stage 2 - \$0.13M per month Opex (overheads): Stage 1 - \$6/tRoM Stage 2 - \$6/tRoM





In addition to the economic parameters summarized above, all other pertinent economic parameters such as the following list is addressed in more detail in Section 17 below.

- closure costs, taxes, and royalties
- commodity prices
- foreign exchange rates, where applicable
- treatment and refining charges,
- marketing costs
- transportation costs.

The following programme is in place to develop the project to the point where it is ready for the Stage 1 production:



Table 10 – Project Development Schedule													
Technical Activities	Pre-2023		20	23		2024			2025				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Pre-exploration and early stage exploration	Complete												
Maiden Code Compliant Mineral Resource Estimation	Complete												
Prelim Metallurgical and Process Testwork	complete												
Feasibility for First Pit-First Plant	In progress												
Comprehensive Metallurgical Testwork	In progress												
Advanced exploration activities	Complete												
Environmental Studies	In progress												
Mining License Application and Approvals	In progress												
Pre-feasibility Study for Full production													
Project Execution First Pit-First Plant													
Bankable Feasibility Study Full Production													
Code Compliant Mineral Resource and Reserve Estimate	complete												
<b>Commercial Activities</b>													
Fundraising for pre-project execution	In-progress	In-progress											
Negotiate MOUs for project offtake	complete												
Fundraising for Stage 1 project execution													
Secure off take agreements	In-progress												

# 16. KEY ASSUMPTIONS, RISKS AND LIMITATIONS

In preparation for the mineral property valuation, it was prudent to identify the material assumptions and limiting conditions that affect the analyses, opinions, and conclusions reached and upon which the valuation of the mineral property is based.

- The Ruangwa Project is advancing through the traditional project development stages as is typical for mining projects in Africa, and as would be expected by financing institutions.
- The understanding and confidence in the geology modelling and mineral resource estimates is at a high level of confidence; and is comparable to the neighbouring projects referenced in Section 8.
- There is sufficient measured resources identified to keep the Stage 1 First Pit First Plant
  production project sustainable for a minimum of 25 years, without a ramp-up in production.
  Should the Stage 2 production project be executed within 2 years after the start of Stage 1; the
  measured resources can sustain a life of mine operation of at least 5 years, by itself. Once the
  indicated resources are included, the life of mine extends by a further 25 years at full production.
- Albeit that the project has a high level of confidence in the mineral resource, with an abundance of relatively high-grade graphite deposits; from a feasibility study point of view, the project is at a relatively early stage of development and this has been factored into the valuation results.
- The political and social outlook for Tanzania is positive for the foreseeable future, with no risk of country instability anticipated. With public reporting showing that political reforms are planned,



the slow execution of these reforms may keep the political risk elevated, but not damaging to the business environment. Similarly, continuing disinflation will be positive for social stability and will help to reduce the likelihood of any anti-government protests driven by the slow reform progress (BMI a FitchSolutions Company, 2023), (The World Bank in Tanzania, 2023).

- The graphite commodity market is not as well established as other commodities such as gold or base metals, for example. However, commodity pricing is predominantly driven by the pricing appetite of commodity traders dealing with graphite consumers. Therefore, as discussed later in this report, pricing used in the valuation of the Ruangwa property is directly linked to the pricing model proposed in the memorandum of understanding between The Pula Group and their Singaporean off-taker (Pula Graphite Partners (T) Ltd & Fortune Bay Resources Pte. Ltd, 2023).
- The Pula Group has no legal disputes, land claims or any other impediments to their mineral exploration and project development activities.

# 17. VALUATION APPROACH AND METHODOLOGY

#### 17.1. Valuation Approach

Owing to the fact that the Ruangwa Graphite Project is at an advanced stage of exploration and that the future operability of the project has been evaluated to a pre-feasibility study level of confidence, Bowline has opted to consider two approaches for the valuation, i.e. the Market Approach and the Income Approach.

<u>The Market Approach</u> (SAMVAL Working Group, 2016) is defined as the approach that relies on the 'willing buyer, willing seller' principle and requires that the amount obtainable from the sale of the Mineral Asset is determined as if in an arm's-length transaction. In the context of the CIMVAL standards, the market approach refers to the Mineral Property being valued is compared with the attributed transaction value of similar Mineral Properties, transacted in an open market (Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum, 2019).

- This valuation approach was treated as the primary valuation approach in this report.
- The market approach was considered because of the level of confidence in the mineral resource estimate, which is comparable to other projects (mineral properties) of a similar size and nature in the market place. Also, there is relevant transactional data regarding these comparable projects available in the public domain.

<u>The Income Approach</u> (SAMVAL Working Group, 2016) is defined as the approach that relies on the 'value-in-use' principle and requires determination of the present value of future cash flows over the useful life of the Mineral Asset. In the context of the CIMVAL standards, the income approach refers to the principle of anticipation of benefits and includes all methods that are based on the income or cash flow generation potential of the Mineral Property (Special Committee of the Canadian Institute of Mining, Metallurgy and Petroleum, 2019).

- The valuation approach was treated as the secondary valuation approach in this report.
- The income approach was considered because the Ruangwa Project has reached a stage in its project development whereby sufficient technical and economic evaluation has taken place to simulate a future mining operation and to get a reasonable indication of the future performance of the project once it enters the operational stage and saleable product is produced.



#### 17.2. Methodology

Based on the market approach, the market comparables methodology was utilized. This methodology was chosen owing to the extent of relevant transactional data available in the public domain and to Bowline, for comparable projects of a similar size and nature. The key parameters captured into a database, for each respective and comparable project, included:

- Mineral Resource or Reserve Estimate i.t.o. quantum (resource tonnage), quality (TGC% grade value) for each of the mineral resource or reserve categories as estimated using either JORC, SAMREC and/or NI43-101 standards.
- General location of the comparable project
- Graphite related saleable products being targeted
- The amount or price paid for the purchase of the comparable project or part thereof.
- Estimated value per percentage of shareholding in the project, where appropriate.
- Various exchange rates were applied to the amounts paid for a transaction, such that all amounts were reflected in US Dollars (USD or US\$).
  - Canadian (C\$) to USD C\$ 0.74 / US\$ 1.00
  - Australian Dollars (A\$) to USD A\$ 0.65 / US\$ 1.00
  - Rands (ZAR) to USD ZAR 0.05 / US\$ 1.00
  - Euros (€) to USD € 1.08 / US\$ 1.00
- Escalations were only applied to transactions that took place pre-2018.
- The database was then appropriately consolidated such that a weighted average price per tonne per TGC percentage could be determined, and then applied to the Ruangwa mineral property, to determine its value.

From the key comparables above, several limitations had to be kept in mind during the valuation process;

- Where properties were at different stages of project development, a discount factor was applied to the transaction price or valuation quantum;
  - Projects with Mineral Reserve Estimates discount factor of 1.0 was applied
  - Projects with Mineral (Measured) Resource Estimate discount factor of 0.9 was applied
  - Projects with Mineral (Indicated) Resource Estimate discount factor of 0.75 was applied
  - Projects with Mineral (Inferred) Resource Estimate discount factor of 0.5 was applied
  - Projects at an early exploration stage discount factor of 0.25 was applied
- When considering the quality or grade of the mineralisation in the various projects investigated, it was extremely difficult to compare directly as the main target minerals for each project was not necessarily exactly the same.
- Also, Bowline has attempted to source project information from projects in a similar location and geography to the Ruangwa Project. However, the respective project owners emanate from a wide variety of countries around the world; hence, previous work on these projects had resulted in valuations in different currencies, such as Australian dollars, Canadian dollars and United States dollars. All the work done by Bowline attempted to convert these currencies into US dollars using current exchange rates. Therefore, some inaccuracies could have been introduced into the valuation, but cannot be quantified specifically. Bowline believes that for this valuation, the inaccuracies introduced as a result of exchange rates are insignificant and do not materially impact the valuation results.



Based on the income approach, a discounted cashflow model was developed and a value was determined accordingly. This methodology allowed the Valuator to apply various technical and economic parameters to determine future potential cashflows, discount the cumulative net cashflows to a net present value, which could then be used to establish a value or price that a potential willing buyer and willing seller could negotiate. These key parameters included (Refer to Sections 15 and 16 for further details):

- Graphite pricing based on current negotiations with a interested off-taker
- Production forecasts, which includes mining production and process plant performances
- Operating Costs, including both on-mine cost assumptions as well as off-mine cost assumptions
- Capital Costs, including budget estimates for the purchase of equipment, material and for the project execution of site infrastructure. These costs, also incorporate budget assumptions for ongoing or stay-in-business capital costs.
- Discount rates for the determination of the time value of money

Once all the parameters were consolidated, a technical-economic financial model was developed to simulate the future cashflows for the Ruangwa Project operation, that ultimately calculated a net present value (NPV) and internal rate of return (IRR).

In order to establish a value for the mineral property, Bowline's approach is to identify the value a potential buyer would reasonably accept so as to still generate a positive NPV and an acceptable IRR for the future operation.

The reason Bowline does not use the NPV value, itself, as the quantum for the mineral property value, is simply that should a buyer purchase the mineral property at this value, they may never realise a return on their investment throughout the life of the operation. Therefore, Bowline deliberately includes an item in the financial model that allows for the back-calculation of an acceptable purchase value assuming a reasonable NPV and IRR can be achieved.

#### **18. PREVIOUS VALUATIONS**

Bowline Professional Services (Pty) Ltd conducted a high-level valuation report dated 28 May 2018 and was then revisted in February 2023. This valuation report formed part of the Independent Business Plans with references, (Bowline Professional Services (Pty) Ltd, 2018), (Bowline Professional Services (Pty) Ltd, 2023).

Table 11 – Previous valuation results										
Valuation	Tonnage [t]	Grade [TGC%]	Low -25%	Base	High +25%					
Indicated Resource	34 663 680	6.13	\$31 920 000	\$37 553 000	\$46 941 000					
Inferred Resource	61 993 080	5.81	\$54 106 000	\$63 654 000	\$79 567 000					
Total	96 656 760	5.92	\$86 026 000	\$101 207 000	\$126 508 000					

The previous valuation results for PL10332/2014 (now PL12456/2023) were as follows:



These valuation results were based on market comparables only, due to the nature and stage of project development at that point in time, as well as the limited transaction information that was available. There were much fewer transactions taking place in this particular market, pre-2020.

Owing to the recent upgrade in the mineral resource estimate and the level of confidence, it was prudent to re-value the mineral property in accordance with the approaches and methodologies described in this report.

#### 19. VALUATION

#### 19.1. Market Approach Valuation

Bowline was able to source additional information regarding several mineral property transactions from the public domain and from Bowline's database. Bowline consolidated the applicable data necessary for comparison and was able to determine an average price per tonne of graphite ore per percent of graphite grade (TGC). This is summarized in the tables below:

Table	Table 12 – Normalised data to determine a price / tonne / 1% TGC											
Project Owners	Year of Transaction	Country	Country Commodity		In-situ Market Value / tonne	Weighted Average Grade (TGC%)	Price / tonne / 1% TGC					
Posco	2020	Tanzania	Graphite	Project Execution	\$0.13	7.95	\$0.016					
EcoGraf	2021	Malawi	Graphite	Feasibility Study	\$0.04	7.41	\$0.006					
Volt Resources	2021	Mozambique	Graphite	Feasibility Study	\$0.11	10.77	\$0.011					
EcoGraf	2022	Namibia	Graphite	Feasibility Study	\$0.11	8.83	\$0.012					
BlackEarth Minerals	2022	Madagascar	Graphite	Feasibility Study	\$9.56	6.49	\$1.474					
Volt Resources	2022	Ukraine	Graphite	Feasibility Study	\$0.43	8.65	\$0.050					
Mason Graphite Inc.	2016	Canada	Graphite	Feasibility Study	\$0.19	17.18	\$0.011					
IMX Resources Limited	2016	Tanzania	Graphite	Pre-feasibility study	\$0.04	6.15	\$0.007					
Discovery Africa Limited	2014	Uganda	Graphite	Early exploration	\$0.32	5.00	\$0.064					
Armadale Capital	2015	Tanzania	Graphite	Early exploration	\$0.04	12.37	\$0.003					
Magnis Resources Limited	2018	Tanzania	Graphite	Project Execution	\$2.90	4.80	\$0.604					
Syrah Resources Limited	2018	Mozambique	Graphite	Operation	\$8.80	16.00	\$0.550					
Volt Resources Limited	2018	Tanzania	Graphite	Pre-feasibility study	\$0.03	4.40	\$0.006					
						Average	\$0.216					

*Note:* Refer to Appendix B for further details, where the consolidated database is captured.

The normalized data presented in the table above, only shows the most recent transactions and these transactions were utilized in determining the value of the mineral property.

By applying the weighted average unit price as shown above, the following valuation results are achieved:

Table 13 – Market Approach Valuation Results											
Valuation	Tonnage [t]	Grade [TGC%]	Low -25%	Base	High +25%						
Measured Resource	7 200 000	5.81	\$7 696 000	\$9 054 000	\$11 318 000						
Indicated Resource	44 100 000	5.89	\$43 009 000	\$50 598 000	\$63 248 000						
Inferred Resource	93 500 000	6.72	\$86 695 000	\$101 994 000	\$127 493 000						
Total	144 800 000	6.42	\$137 400 000	\$161 646 000	\$202 059 000						

Therefore, utilizing a confidence factor of 85%, Bowline estimates the **Mineral Property Value to be** in the order of between US\$ 137 million and US\$ 202 million.



#### 19.2. Income Approach Valuation

Bowline developed a technical economic model, discounted cashflow, to simulate the future operation's performance. The following key assumptions were used in the development of the model:

- Mineral Resources Refer to Table 8
  - 100% of Measured and Indicated Resources of 51.3 Mt @ 5.88 % TGC
  - o 20% of Inferred Resources of 18.7 Mt @ 6.72 % TGC
  - With a total tonnage applied in financial model of 70 Mt @ 6.10 % TGC
- Production Data Refer to **Table 9** 
  - Full Production Rate 150 000 tonnes of coal (run of mine) per month generating a life of mine of a minimum of 30 years.
  - Production ramp-up includes Stage 1 First Pit First Plant
  - Yields post beneficiation average of 80% producing approximately 80 000 tonnes of graphite concentrate at 95 % TGC, for export sales
- Capital Expenditure of \$ 105 million Refer to Table 9
- Additional, ongoing capital of approximately 1% of revenue was applied per month in the techno-financial model.
- All unit cost estimates emanate from benchmarking exercises done by Bowline and The Pula Group Refer to **Table 9** 
  - Mining cost \$ 5.00 per tonne of RoM ore (assuming 10% of this cost is fixed)
  - Processing cost of \$ 34.00 per tonne of RoM ore (assuming 50% of this cost is fixed)
  - Overhead cost of \$ 6.00 per tonne of RoM ore (assuming 100% of this cost has fixed)
  - Off-mine logistics and sales costs at an average of 2% of the Graphite concentrate basket price
- Sales terms (as per the MOU with The Pula Group's Singaporean offtaker) \$ 1700 / tonne of graphite concentrate (as a basket price for various flake sizes)
- Discount rate 10 % (typical for financial institutions when doing their own project evaluations)
- > A snapshot of the techno-financial model is annexed to this report (Appendix C).

The following tables provide a summary of the annual financial model cashflows:

	Table 14 – Annual Freecashflow Year 0 to 10												
			Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
				Mar 24	Mar 25	Mar 26	Apr 27	Mar 28	Mar 29	Mar 30	Apr 31	Mar 32	Mar 33
	ROM production	ktpa	0.00	0.01	141.36	1583.65	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00
Production	TGC grade	%	0.00	0.00	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10
	Recovered TGC	ktpa	0.00	0.00	7.01	78.59	89.32	89.32	89.32	89.32	89.32	89.32	89.32
Revenue	Product Value	M\$pa	0.00	0.00	11.69	130.93	148.81	148.81	148.81	148.81	148.81	148.81	148.81
Cost	Operating Cost	M\$pa	0.00	0.00	21.91	75.70	81.00	81.00	81.00	81.00	81.00	81.00	81.00
GrossMargin	Operating Margin	M\$pa	0.00	0.00	-10.23	55.23	67.81	67.81	67.81	67.81	67.81	67.81	67.81
Royalty	State Royalty	M\$pa	0.00	0.00	0.18	5.24	5.95	5.95	5.95	5.95	5.95	5.95	5.95
Net Margin	Margin after Royalty	M\$pa	0.00	0.00	-10.41	49.99	61.86	61.86	61.86	61.86	61.86	61.86	61.86
CAPEX	CAPEX & Ongoing CAPEX	M\$pa	0.00	181.01	89.33	11.72	1.49	1.49	1.49	1.49	1.49	1.49	1.49
EBIT	Cash Before Tax	M\$pa	0.00	-181.01	-99.74	38.27	60.37	60.37	60.37	60.37	60.37	60.37	60.37
ТАХ	Taxation	M\$pa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.82	18.11	18.11
EAT	Cash After Tax	M\$pa	0.00	-181.01	-99.74	38.27	60.37	60.37	60.37	60.37	42.56	42.26	42.26



	Table 15 – Annual Freecashflow Year 11 to 20												
			Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	
			Mar 34	Apr 35	Mar 36	Mar 37	Mar 38	Apr 39	Mar 40	Mar 41	Mar 42	Apr 43	
	ROM production	ktpa	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	
Production	TGC grade	%	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	
	Recovered TGC	ktpa	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32	
Revenue	Product Value	M\$pa	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81	
Cost	Operating Cost	M\$pa	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00	
GrossMargin	Operating Margin	M\$pa	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81	
Royalty	State Royalty	M\$pa	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	
Net Margin	Margin after Royalty	M\$pa	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86	
CAPEX	CAPEX & Ongoing CAPEX	M\$pa	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	
EBIT	Cash Before Tax	M\$pa	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37	
ТАХ	Taxation	M\$pa	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11	
EAT	Cash After Tax	M\$pa	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	

Table 16 – Annual Freecashflow Year 21 to 30												
			Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
			Mar 44	Mar 45	Mar 46	Apr 47	Mar 48	Mar 49	Mar 50	Apr 51	Mar 52	Mar 53
	ROM production	ktpa	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00	1800.00
Production	TGC grade	%	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10	6.10
	Recovered TGC	ktpa	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32	89.32
Revenue	Product Value	M\$pa	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81	148.81
Cost	Operating Cost	M\$pa	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00
GrossMargin	Operating Margin	M\$pa	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81	67.81
Royalty	State Royalty	M\$pa	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95	5.95
Net Margin	Margin after Royalty	M\$pa	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86	61.86
CAPEX	CAPEX & Ongoing CAPEX	M\$pa	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
EBIT	Cash Before Tax	M\$pa	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37	60.37
ТАХ	Taxation	M\$pa	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11	18.11
EAT	Cash After Tax	M\$pa	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26	42.26

Taking into consideration the above financial performance forecasts, the following is observed:

Table 17 – Discounted Cashflow Financial Results									
RESULTS									
Constant Money I	10								
	IRR - %pa								
Cash before Tax	M\$ 204.27		17.4						
Cash after Tax	M\$	118.14	15.0						
Payback	7.0								

In order to establish a value for the mineral property, Bowline's approach is to identify the value a potential buyer would reasonably accept so as to still generate a positive NPV and an acceptable IRR for the future operation.

The reason Bowline does not use the NPV value, itself, as the quantum for the mineral property value, is simply that should a buyer purchase the mineral property at this value, they may never realise a return on their investment throughout the life of the operation. Therefore, Bowline deliberately includes an item in the financial model that allows for the back-calculation of an acceptable purchase value assuming a reasonable NPV and IRR can be achieved.

In this instance, Bowline has opted to fix the IRR at 15%, which resulted in the following range of values for the mineral property:



Table 18 – Income Approach Valuation Results									
Valuation	Low -25%	Base	High +25%						
Mineral Property Value	\$ 122 415 000	\$ 144 018 000	\$ 180 022 000						
Equivalent Graphite Concentrate Price Sensitivity	US\$ 1630	US\$ 1700	US\$ 1817						

According to K-Mine (2023), the global graphite production has been predominantly led by nations such as China, Russia, India, and Brazil. According to the United States Geological Survey, the estimated global graphite mine production in 2021 was around 1.0 million tonnes, with China contributing approximately 80% of this total yield. Conversely, countries like Canada and the United States, despite actively promoting the transition from fossil fuel vehicles to electric vehicles (EVs) and having known graphite deposits, make minimal contributions to the global supply. However, since China's ban on graphite exports, this has resulted in higher demands and lower supply into markets outside of China (Liu, 2023).

In addition, the lack of a viable alternative for flake graphite in the lithium-ion battery sector indicates that its demand is expected to surge. Industry experts estimate that an additional 4-5 million tonnes of flake graphite will be required to meet the energy storage demands driven by the growing EV market. Furthermore, S&P Analytics projects a staggering 400% increase in EV sales by 2030. Consequently, it becomes imperative for more nations to enhance exploration and development activities to domestically meet this demand. This also suggests that graphite market pricing should remain stable, if not increase, over the foreseeable future.

#### 20. VALUATION CONCLUSION

Emanating from the two sets of valuations conducted, i.e. market approach and the income approach, the valuations ranges can be summarized as follows:

Table 19 – Summary of Valuations' Results										
Mineral Property Valuation	Low -25%	Base	High +25%							
Market Approach (Market Comparables methodology)	\$137 400 000	\$161 646 000	\$202 059 000							
Income Approach (DCF methodology)	\$ 122 415 000	\$ 144 018 000	\$ 180 022 000							

Comparing the results from the two valuation approaches, it is found that there is a minor variation of approximately 12%. Therefore, Bowline is comfortable applying an average of the two approaches and presenting the final valuations results as follows:

Table 20 – Final Valuations' Results									
Mineral Property Valuation	Low -25%	Base	High +25%						
Valuation Average Results	\$129 900 000	\$152 800 000	\$191 300 000						



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#### 22. CERTIFICATE OF QUALIFIED VALUATOR

I, Breton Neil Scott, Pr.Eng (20060044), PMP, BSc Mining Eng., MBA, FSAIMM, MSANIRE do hereby certify that:

- I am a consultant of Bowline Professional Services (Pty) Ltd, 15 Paula Road, Olivedale, Johannesburg 2188
- I graduated with a Bachelor of Science degree in Mining Engineering in 1998.
- I graduated with a Master of Business Administration in 2011.
- I am a registered Professional Engineer with the Engineering Council of South Africa
- I am a Fellow of the South African Institute for Mining and Metallurgy.
- I have worked as a mining engineer for a total of 26 years since my graduation from university.
- I have read the definition of "Qualified Valuator" as set out in the CIMVAL Code ("CIMVAL") and certify that by reason of my education, affiliation with professional associations and past relevant work experience, I fulfil the requirements to be a "Qualified valuer" for the purposes of a CIMVAL Property Valuation.
- I have had prior involvement with the properties that are the subject of the Valuation Report. My involvement has been strictly independent while providing various consulting services.
- I am not aware of any material fact or material change with respect to the subject matter of the Valuation Report that is not reflected in the Valuation Report, the omission to disclose which makes the Valuation Report misleading.
- I have read the CIMVAL Code, and the Valuation Report has been prepared consistently in compliance with the standards as presented in the code.

Dated this 27<sup>th</sup> day of March, 2024.

Signature of Qualified Valuator

#### **23.** DATE AND SIGNATURE PAGE

The undersigned, Breton Neil Scott, compiled this Valuation Report entitled "RUANGWA GRAPHITE PROJECT MINERAL PROPERTY VALUATION - PREPARED IN ACCORDANCE WITH THE CIMVAL STANDARDS" with an effective date of 1 March 2024 in support of the disclosure of the valuation aspects of the Ruangwa Graphite Prospecting License PL12456/2023.

Signed,

Breton Neil Scott 27 March 2024



24. APPENDICES



#### **APPENDIX A – PROSPECTING LICENSE**

PL 12456/2023

# THE UNITED REPUBLIC OF TANZANIA MINISTRY OF MINERALS MINING COMMISSION

# PROSPECTING LICENCE NO. PL 12456/2023

# GRANTED PURSUANT TO SECTION 32 OF THE MINING ACT, CAP. 123

WHEREAS M/S PULA CARBON TANZANIA LIMITED of P.O. Box 23124, Dar es Salaam, Tanzania has fulfilled the conditions for grant of Prospecting Licence pursuant to Section 31 of *The Mining Act, Cap. 123*;

I, Eng. Yahya I. Samamba, EXECUTIVE SECRETARY, subject to the provisions of *The Mining Act, Cap. 123* and of the regulations made thereunder or which may come into force during the continuance of this Licence, or any renewal thereof and pursuant to the powers conferred upon me under Section 32 of *The Mining Act, Cap. 123* hereby grant to M/S PULA CARBON TANZANIA LIMITED (hereinafter called the Licensee) a Prospecting Licence - Industrial Minerals, to prospect for Graphite, in Ruangwa District, over an area described in Annex A (hereinafter called the Licence Area), conferring on the Licensee the right to carry on such prospecting operations, abide to Annex B, Annex C and Annex D and execute such other works as are necessary for that purpose.

This Licence, unless sooner cancelled, suspended or surrendered pursuant to the provisions of *The Mining Act, Cap. 123* shall be valid for a period of forty-eight (48) months, effective from the date of grant.

02 Granted this ..... . day of 2023 Eng. Yahya I. Samamba EXECUTIVE SECRETARY



#### Transaction Discount Weight Value In-situ New / Partial Previous ed Ave Weighted Factor Year of Project Grade and/or Market Project Project Country Commodity **Project Status Total Estimated Resource** according in-situ average Transaction Name TGC% Market Value / Owners Owners Resource market grade Capitalisatio tonne Category value n Proven Reserve 16600000 8.60 \$50 000 000 \$0.18 1 \$0.13 7.95218 Probable Reserve 53500000 8.50 \$0.18 1 8.50 Measured Resource 70000000 \$0.16 0.9 Black Rock Mahenge Posco 2020 Tanzania Graphite Development Minerals Graphite Indicated Resource \$0.13 0.75 Inferred Resource 142000000 7.40 \$0.09 0.5 \$0.04 0.25 Inventory Proven Reserve 3100000 9.50 \$5 000 000 \$0.07 1 \$0.04 7.413137 Probable Reserve 6400000 9.50 \$0.07 1 9500000 9.50 \$0.06 Sovereign Malingunde Measured Resource 0.9 EcoGraf 2021 Malawi Graphite Feasibility Study Metals Graphite Indicated Resource \$0.05 0.75 Inferred Resource 55600000 6.70 \$0.03 0.5 0.25 Inventory \$0.02 Proven Reserve 4200000 12.50 \$5 019 557 \$0.17 1 \$0.11 10.76791 Probable Reserve 2800000 12.50 \$0.17 1 Balama Volt Central and Measured Resource \$0.15 0.9 2021 Mozambique Graphite Feasibility Study Resources Lalaua Indicated Resource 5900000 12.04 \$0.13 0.75 Graphite Inferred Resource 16700000 9.59 \$0.08 0.5 \$0.04 0.25 Inventory \$4 563 233 Proven Reserve 6600000 8.80 \$0.15 1 \$0.11 8.828479 Probable Reserve 1200000 8.70 \$0.15 1 Measured Resource \$0.13 0.9 Gecko Okanjande Feasibility Study EcoGraf 2022 Namibia Graphite \$0.11 0.75 Namibia Graphite Indicated Resource 12800000 9.20 Inferred Resource 10300000 8.40 \$0.07 0.5 Inventory \$0.04 0.25 Proven Reserve 3700000 6.50 \$357 891 757 \$14.55 1 \$9.56 6.486992 Probable Reserve 700000 6.50 \$14.55 1 1600000 6.30 \$13.09 0.9 Measured Resource BlackEarth Maniry Development & Luxcarbon 2022 Madagascar Graphite \$10.91 0.75 Minerals Graphite Trial Mining Indicated Resource 4100000 6.50 Inferred Resource 14500000 6.50 \$7.27 0.5 \$3.64 0.25 Inventory \$8 500 000 Proven Reserve 4900000 8.70 \$0.48 1 \$0.43 8.652809 Probable Reserve 1200000 8.70 \$0.48 1 8900000 8.70 \$0.43 0.9 Volt Zavaliensky Measured Resource AMG 2022 Ukraine Graphite Feasibility Study Resources Graphite Indicated Resource 2800000 8.40 \$0.36 0.75 Inferred Resource \$0.24 0.5 \$0.12 0.25 Inventory

#### APPENDIX B – CONSOLIDATED DATA FOR MARKET COMPARABLES



		2016	Lac Guéret	Quebec, Canada	Graphite	Feasibility Study				\$15 000				
							Proven Reserve	2003000	25.05	000	\$0.24	1	\$0.19	17.18048
	Mason						Probable Reserve	2783000	29.77		\$0.24	1		
Unknown	Graphite						Measured Resource	16929000	16.98		\$0.21	0.9		
	Inc.		graphite				Indicated Resource	41205000	16.03		\$0.18	0.75		
							Inferred Resource				\$0.12	0.5		
							Inventory				\$0.06	0.25		
							Proven Reserve						\$0.04	6.148066
					1		Probable Reserve							
University	IIVIX	2016	Chilalo	Tananaia	Currentite	Pre-feasibility	Measured Resource							
Unknown	Resources	2016	Graphite	Tanzania	Graphite	study	Indicated Resource							
	Limited						Inferred Resource							
					1		Inventory	18100000	6.15	\$757 748	\$0.04			
							Proven Reserve						\$0.32	5
							Probable Reserve							
11.1	Discovery	2014	Kitgum	i tana da		Early exploration	Measured Resource							
Unknown	Africa	2014	Graphite	Uganda	Graphite		Indicated Resource							
	Limited						Inferred Resource							
							Inventory	2000000	5.00	\$639 593	\$0.32			
	Armadale Capital	2015	Mahenge Liandu Graphite	Tanzania	Graphite	Early exploration	Proven Reserve						\$0.04	12.37179
							Probable Reserve							
11.1							Measured Resource							
Unknown							Indicated Resource							
							Inferred Resource							
							Inventory	3900000	12.37	\$1 515 496	\$0.04			
										\$220 504				
							Proven Reserve	76000000	4.80	660	\$2.90	1	\$2.90 4	4.8
			Nuclea			Dustant	Probable Reserve					1		
Unknown	Resources	2018	Granhito	Tanzania	Graphite	Froject	Measured Resource					0.9		
	Resources		Graphite			Execution	Indicated Resource					0.75		
							Inferred Resource					0.5		
							Inventory					0.25		
										\$716 071				
				Mozambique			Proven Reserve	81400000	16.00	835	\$8.80	1	\$8.80	16
	Surah		Palama				Probable Reserve					1		
Unknown	Pesources	2018	018 Balama Graphite		Graphite	Operation	Measured Resource					0.9		
	Resources						Indicated Resource					0.75		
							Inferred Resource					0.5		
							Inventory					0.25		
				yu Tanzania iite			Proven Reserve					1	\$0.03	4.4
					Graphite	Pre-feasibility study	Probable Reserve	127000000	4.40	\$3 292 591	\$0.03	1		
Linknown	Volt	2018	Bunyu Graphite				Measured Resource					0.9		
	Resources						Indicated Resource					0.75		
							Inferred Resource					0.5		
							Inventory					0.25		





#### **APPENDIX C – SNAPSHOT OF THE TECHNO-FINANCIAL MODEL**