DEFINITIVE FEASIBILITY STUDY CONFIRMS CHILALO AS A HIGH MARGIN GRAPHITE PROJECT

Graphex Mining Limited (ASX: GPX) ('Graphex' or the 'Company') is pleased to announce the results of the Definitive Feasibility Study ('DFS') for its Chilalo Graphite Project ('Chilalo' or the 'Project'), located in south-east Tanzania.

The DFS has been prepared to a bankable standard to support a decision to mine and finance. It is underpinned by updated and detailed assumptions including pricing, product qualification timeframes, production and sales ramp-up. The results demonstrate that the Chilalo Project has strong margins with a significant near-term value-add market opportunity. The DFS reflects Graphex positioning itself as a vertically integrated manufacturer of high-value graphite products, as opposed to purely a graphite mining company.

HIGHLIGHTS

STRONG PROJECT ECONOMICS

- **Post-tax NPV_8 of US$331M** and **post-tax IRR of 36%** on a capital cost of US$87.4M (economics include cash flows from value-added products)
- Annual improvements in post-tax cash flow until **steady state average from year 5 of US$58M per annum**

PREMIUM PRODUCT

- Variability testwork and pilot plant production confirm **Chilalo continues to produce one of the coarsest flake size distributions in the world**
- High value concentrate product with 31% larger than 300 microns, **delivering attractive weighted average sales price of US$1,534 per tonne** over the life of mine

CHILALO PROJECT

- **Annual throughput of 500 ktpa to produce approximately 50,000 tpa** over an 18-year mine life
- Feed to the processing plant is derived entirely from the Ore Reserve, which has increased by 52% from the previous Ore Reserve
- High-conviction opportunities for mine life extensions and reductions in operating costs from near-mine exploration upside
- Documentation associated with environmental and community factors aligns with IFC Performance Standards and the Equator Principles
- **Permitted to commence development in 2020** – progression to construction is subject to financing which is at an advanced stage

MARKETS FIRST

- **Market is primed for additional coarse flake supply** – unfulfilled demand in graphite foil, gaskets, seals and fire-retardants
- Continued advancement of value-added strategy, including **signing of expandable graphite processing term sheet with China's leading expandable graphite manufacturer, Yichang Xincheng Graphite Co Ltd**

Graphex Managing Director, Phil Hoskins commented

"The DFS demonstrates that Chilalo will be a robust project based on a Probable Reserve of 9.2 million tonnes, underpinning an estimated 18-year mine life producing approximately 50,000tpa of high-value graphite products.

"The Chilalo Project demonstrates strong margins and cashflow with substantial opportunities for improvement through exploration, production expansion and continued advancements in the Company's value-added products strategy.

"Since we first discovered Chilalo, we have applied a 'markets-first' approach, with a commitment to understanding market requirements and aligning the Company's production and sales strategy accordingly. The ability to access high-value markets is a result of two key factors – the aforementioned commitment to understanding market requirements and the characteristics of Chilalo graphite with its predominance of coarse flake, superior expandability and ability to reach 99% grade with simple flotation.

"With key approvals in place, including a mining licence, environmental certificate and community relocation arrangements and compensation agreed and approved, we are in a strong position to readily commence development with first production by Q4 2021. We now look forward to finalising the financing arrangements for the development of Chilalo.

"The Graphex team has demonstrated experience in developing and operating mines successfully and is excited about the journey ahead to build the first commercial scale graphite project in Tanzania. We look forward to continuing to work with the Government of Tanzania, the district Government of Ruangwa and the surrounding communities as we advance the project for the benefit of all stakeholders.

"On behalf of the Board, I'd like to thank our staff, study managers, respected consultants and mining contractors who were engaged for the various scopes, and in particular GR Engineering Services Limited, which has done the heavy lifting on the processing plant and cost estimates to bring the DFS together."

KEY RESULTS

Project operations are forecast to commence following a 12-month construction phase. Operations entail open pit mining, with conventional crushing, grinding and flotation processing. Estimated key project outcomes including economics from value-added products are shown in Table 1 with Figure 1 showing the anticipated production and sales profile of concentrate and value-added products.

Table 1: Key project outcomes

PHYSICALS	UNIT	LIFE OF MINE
Mine life	Years	18
Total plant feed	Mt	8.9
Annual plant feed	ktpa	500
Average head grade	TGC %	10.1%
Average graphite concentrate production[1]	ktpa	50
Steady state expandable graphite sales	ktpa	12
Steady state micronised graphite sales	ktpa	8
PROJECT FINANCIALS	**UNIT**	**LIFE OF MINE**
NPV_8 (Post-tax)	US$M	331
NPV_8 (Post-tax) – at Year 4	US$M	510
IRR (Post tax)	%	36%
Post-tax payback period	years	3.5
Pre-production capital cost (incl. 10% contingency and pre-strip)	US$M	87.4
Average annual EBITDA	US$M	74

PRODUCT SEGMENT FINANCIALS	UNIT	CONC.	EXPANDABLE GRAPHITE	MICRONISED GRAPHITE	CONSOLIDATED PRODUCTION[3]
Average sales price (FOB)	US$/t	1,534	5,690	2,802	2,500
C1 operating costs per tonne (FOB)[2]	US$/t	778	512	383	905
Operating margin	US$/t	756	5,178	2,419	1,595

1. Average graphite concentrate production includes graphite concentrate used as feedstock into both value-added products.
2. Operating costs of expandable graphite and micronised graphite excludes the internal transfer price (purchasing feedstock from Chilalo).
3. Consolidated Production shows the average sales price, operating costs and margin for the consolidated operation (ie. Inclusive of concentrate, expandable graphite and micronised graphite).

UPDATED ORE RESERVE

The Ore Reserves underpinning the production target have been prepared by a competent person in accordance with the requirements in the JORC Code, the relevant proportions of which are set out in Table 9 of this announcement. The Company has not included exploration targets or Inferred or Indicated Resources in the forecast financial information set out in this announcement.

VERTICALLY INTEGRATED "MARKETS FIRST" GRAPHITE STRATEGY

Since discovering the Chilalo Graphite Project in south-east Tanzania, Graphex has adopted a ***'markets-first'*** approach to its development. In such an opaque market for graphite, potential graphite suppliers have experienced a steep learning curve to address the knowledge asymmetry that exists between developers and existing market participants. Graphex has always believed that sustained success in the graphite industry would be achieved through a detailed understanding of the graphite market and continued engagement with multiple diversified market participants.

The initial focus of this engagement has been in China and, with the assistance of experienced in-country graphite advisors, the Company developed numerous relationships with potential customers in target markets. This sustained marketing effort commenced in early 2015 and soon resulted in the Company focusing on becoming a supplier of coarse flake graphite, a strategy that is underpinned by the high-value coarse flake product that can be produced at Chilalo, the identified shortfall in coarse flake graphite for expandable graphite and other applications, and the overwhelming macro themes expected to drive growth in expandable graphite products.

This 'markets-first' strategy has evolved to include the manufacturing of value-added graphite products in addition to the sale of Chilalo graphite concentrate. As outlined in the ASX announcement dated 30 October 2019, a key development in the Company's strategy has been the advancement of a low-risk, low capital-intensive, value-added products strategy to enhance the value of its concentrate sales, including:

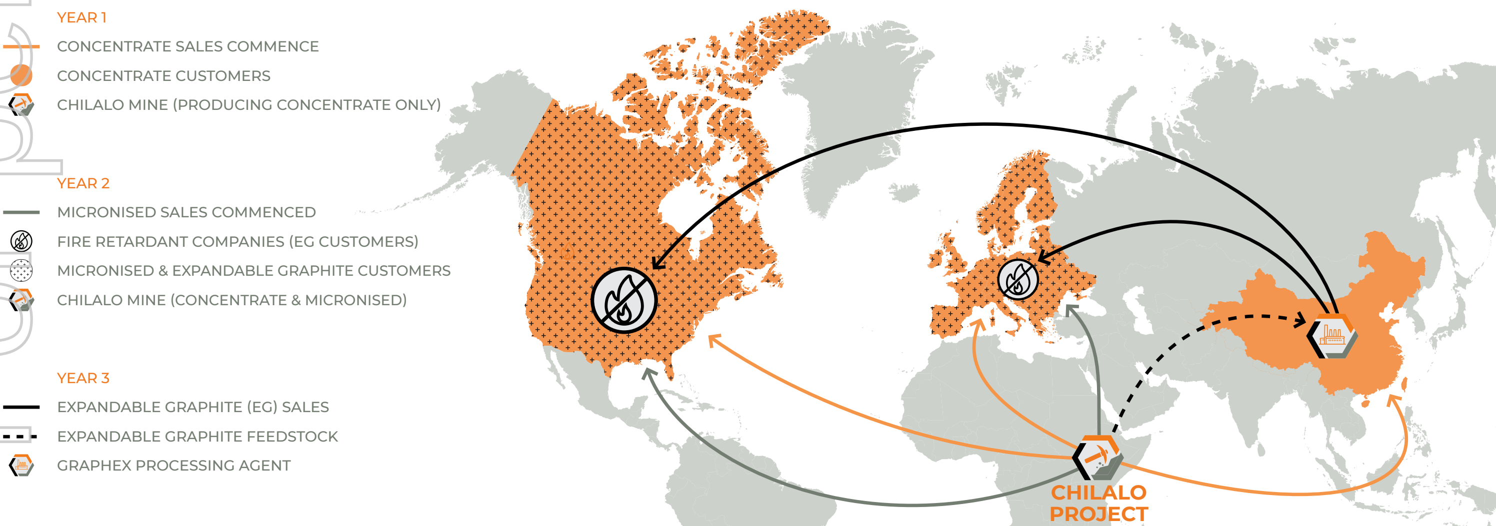
› Chinese toll-treatment of Chilalo flake graphite concentrate into expandable graphite for qualification and direct sale to fire-retardant customers identified by Graphex; and

› Installation of fine milling equipment to produce micronised graphite for qualification and sale to customers identified by Graphex.

This strategy has received a significant boost with the signing of a term sheet with China's largest expandable graphite manufacturer, Yichang Xincheng Graphite Co Ltd, to act as the Company's processing agent, effectively toll-treating Chilalo graphite concentrate into expandable graphite.

Graphex is positioning itself as a vertically integrated manufacturer of high-value graphite products, as opposed to a graphite mining company. Figure 1 below demonstrates the vertically integrated and geographically diversified nature of the Company's sales and marketing strategy.

Figure 1: Vertically integrated graphite strategy



Product Sales ('000)	1	2	3	4	5	6	7
FLAKE GRAPHITE CONCENTRATE SALES	43	56	50	48	45	39	28
FEEDSTOCK TO MICRONISED GRAPHITE	-	1	2	3	5	6	8
FEEDSTOCK TO EXPANDABLE GRAPHITE	-	-	3	6	9	12	12
ADDITIONS TO INVENTORY	3	2	-	-	-	-	-
TOTAL PRODUCTION	46	59	55	57	59	57	48

PRODUCT QUALITY

The defining characteristic of the Chilalo project is product quality and consistency. It is product quality and consistency, combined with the Company's markets-first approach to development, that underpins the opportunity for Graphex to become a supplier of high-value graphite products.

Since 2015, concentrate flotation testwork has occurred at six independent laboratories. Graphex has also conducted downstream testwork and specific analytical tests for target applications at five independent research institutes / laboratories to complement testwork conducted by equipment manufacturers and potential customers in their lab facilities.

Testwork has repeatedly confirmed that Chilalo product:

- Produces a very high proportion of coarse flake graphite at target purity levels;
- Is capable of achieving a purity level of >99% Loss on Ignition (LOI)[1] through standard flotation with no chemical intervention (not commercially available in current global graphite market); and
- Is suitable for a multitude of high-value applications.

POISED TO CAPITALISE ON VALUE-ADD OPPORTUNITIES

The product quality has been supported by a strong and sustained commitment to customer engagement which has broadened the market focus to include two value-added products; expandable graphite and micronised graphite. Work carried out over the past 12 months has Graphex strongly positioned to capitalise on the opportunities in the expandable graphite and micronised graphite markets, both of which enable enhanced project revenue, as each command materially higher prices than those paid for graphite concentrate. Table 2 below illustrates how Graphex is poised to capitalise on these highly lucrative markets.

Table 2: Value-added strategy - key boxes have been ticked

	EXPANDABLE GRAPHITE	MICRONISED GRAPHITE
Suitability	Several independent labs confirm suitability for foils and fire-retardants	Suitability confirmed by micronisation equipment supplier
Marketing	Numerous international fire-retardant companies identified including technical specifications required by each	Numerous international micronised graphite customers identified including technical specifications required by each
Technical Risk	Expandable graphite processing term sheet signed with China's largest expandable graphite manufacturer – leveraging off existing technology and processing expertise	Micronisation equipment supplier is a respected supplier to the industry
Economics	Substantial value-add with no capital investment	Very low capital cost and substantial value-add (low-value -100 mesh feedstock)
Timing	Sales commence in year 3 following ~24 months qualification timeframe and follow progressive sales ramp-up	Micronisation equipment installed in year 2 with progressive sales ramp-up

1. Please refer to Appendix A for further information on LOI.

The processing and market applications for expandable graphite and micronised graphite are further described in Section 5 and Section 10 below.

Table 3 below shows the DFS production and sales profile assumptions from years 1 to 7 of the various graphite products expected to be produced by Graphex

Table 3: Graphite sales profile – increasing volumes to high-value applications

PRODUCT ('000)	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
Flake graphite concentrate sales	43	56	50	48	45	39	28
Feedstock to Expandable Graphite	-	-	3	6	9	12	12
Feedstock to Micronised Graphite	-	1	2	3	5	6	8
Additions to inventory	3	2	-	-	-	-	-
TOTAL PRODUCTION	46	59	55	57	59	57	48

Due to stringent regulatory requirements, it is conservatively assumed to take up to 24 months to qualify Chilalo's expandable graphite with international fire-retardant customers identified by the Company. These qualification timeframes along with realistic sales ramp-up assumptions have been recommended by the Company's specialist graphite market advisors who have extensive experience and contacts with these markets.

The fine milling equipment required to produce micronised graphite is expected to be installed at Chilalo at the beginning of the second year of operations. Again, the Company has applied realistic qualification timeframes and sales ramp-up parameters, based on the recommendations of its specialist graphite market advisors.

Table 3 also demonstrates that the Company is forecasting to hold inventory of graphite products to service high-value spot shipments and service stock requirements of higher value customers who request stock be held. This is also a more conservative assumption than selling all products as they are produced and is consistent with industry norms.

THE IMPROVING ECONOMICS OF THE CHILALO GRAPHITE PROJECT

As described in Table 4 below, Graphex expects the price it receives for its flake graphite concentrate to increase during the early years of the Project as the product is progressively qualified into higher value markets / applications where a premium is paid for quality and consistency. The increasing price is not dependent on rising graphite prices more broadly.

Table 4: Life of mine flake size distribution and weighted average sales price

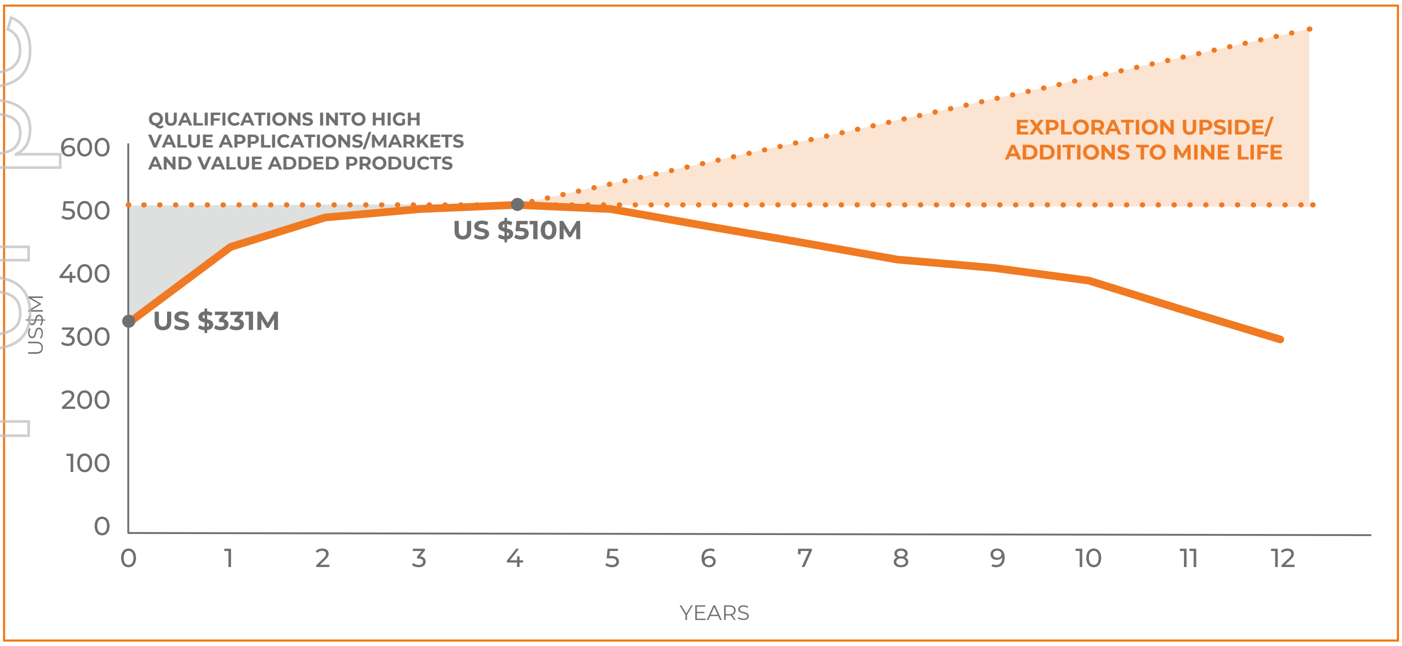
Mesh size	Microns	Mass Dist.%	Price Year 1	Price Year 2	Price Year 3	Price Year 4	Average (LOM)
+20	>850	0.7	5,000	5,000	5,000	5,000	5,000
+32	500 - 800	9.8	2,359	2,582	2,895	3,031	3,017
+50	300 - 500	20.6	1,745	1,935	2,235	2,357	2,242
+80	180 - 300	26.9	1,057	1,133	1,251	1,299	1,270
+100	150 -180	6.3	794	853	945	983	969
-100	<150	35.8	631	673	735	761	749
Weighted average sales price (US$/t)			**1,178**	**1,303**	**1,475**	**1,535**	**1,534**

In addition to discussions with potential customers, Graphex has considered pricing data from numerous independent sources including Roskill, Industrial Minerals, Benchmark Mineral Intelligence, RefWin-China as well as its own expert graphite market consultants.

Complementing the expected improving average sales price for Chilalo's flake graphite concentrate will be the qualification and growing sales of the Company's initial value-added products (expandable graphite and micronised graphite). These factors will result in revenue and cash flows increasing during the early years of the Project's life increasing the project value.

Figure 2 below shows the rolling NPV based on forward-looking discounted cashflows at each year for the initial 12 years of the Project's life.

Figure 2: Chilalo's improving NPV demonstrates the value to be added by exploration



Post-tax cash flow increases to US$69M by year 5. At Year 4, the NPV of the project has increased to US$510M as a result of expensed capital and the higher forward-looking revenue generated from the value-added products. To improve the NPV further, the Company will need to increase the quantity of value-added product sales or increase the economically mineable resource to allow production expansions.

The Opportunities section below highlights the strong potential for an increased mine life

FUNDING

In October 2018, the Company entered into financing agreements that included a term sheet setting out the proposed terms on which the financier and other market participants (subject to the satisfaction of agreed conditions) would provide up to US$40 million in equity and up to US$40 million from the issue of senior secured loan notes ('**Senior Funding Package**'). For further information on financing arrangements, please refer to ASX announcement dated 29 October 2018.

The DFS represents a step toward satisfying a condition to the Senior Funding Package. The Company is confident that the DFS has been prepared to a standard required by project financiers. Financier due diligence on the DFS and other outstanding conditions is ongoing. Graphex is working with the financier on procuring the finance necessary for development of the Project and the financier is open to working with others in this regard.

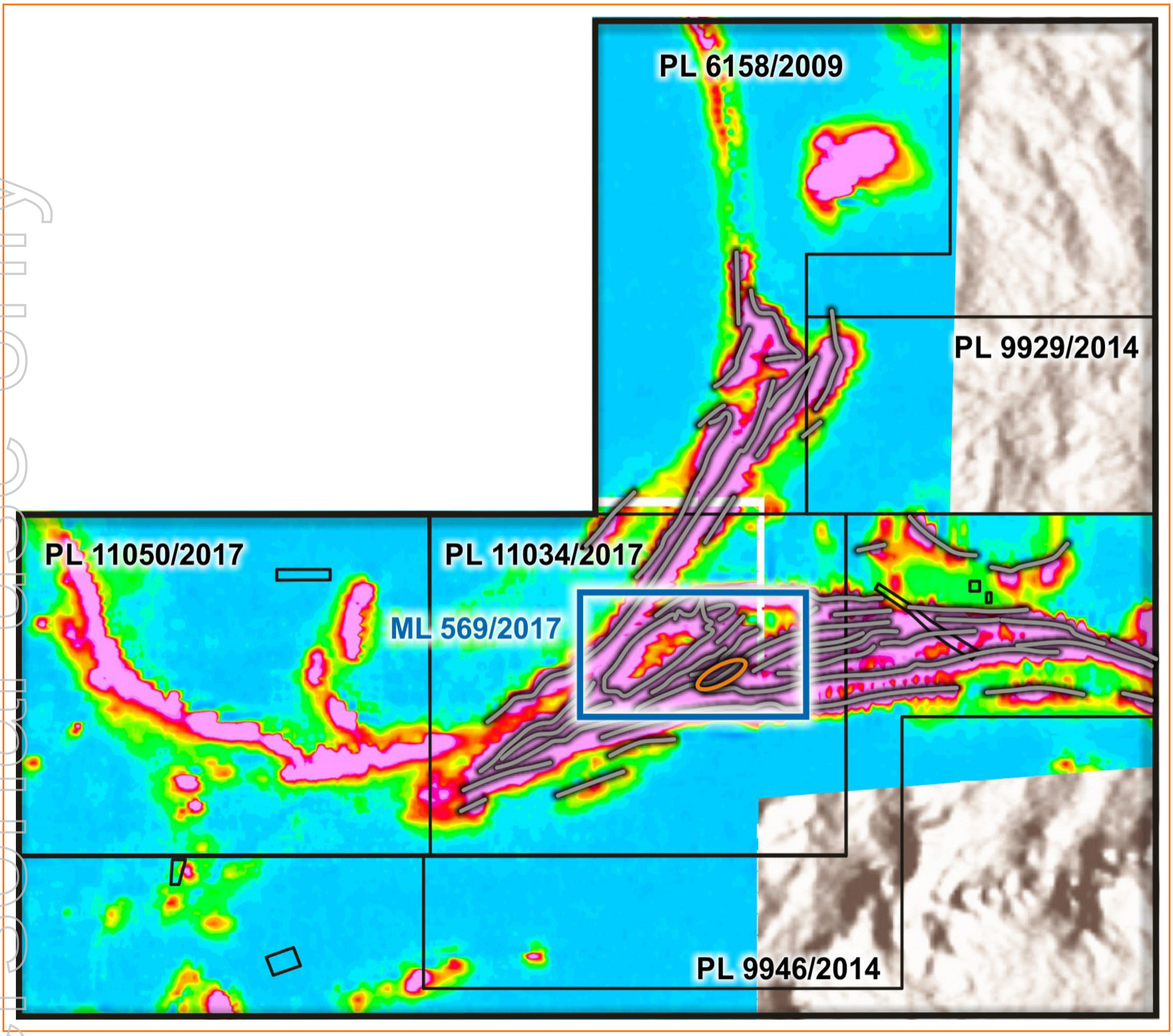
A key objective in preparing the DFS was to enable it to support a bankable level of due diligence. The Company has worked with specialist consultants and contractors who have experience and demonstrated expertise in graphite mine design, construction and operations. The environmental and social management planning and supporting impact assessments are aligned with applicable Tanzanian legislation, International Finance Corporation ('**IFC**') Performance Standards and the Equator Principles.

OPPORTUNITIES

The DFS has identified a number of opportunities that could improve the project's economics as follows:

- **Exploration upside**
  As highlighted further above, the Project's annual cash flows are forecast to increase as the products are qualified into higher value markets/applications. To ensure this translates into a sustainable,higher project valuation, the Company would need to add economically mineable resources during operations. This is achievable via:
  - the conversion of additional Indicated and Inferred Resources to Reserves (high-grade Indicated and Inferred Resources of 11.2Mt are not currently included in the mine plan). These require further infill drilling; and
  - additional near-mine exploration targets. The Company has drilled only 10% of the strike length indicated by high-conductance anomalies similar to the main deposit. Figure 3 below shows a significant number of high-conductance targets on the Company's tenements (see ASX announcement 2 September 2015).

Figure 3: VTEM survey showing near-mine targets

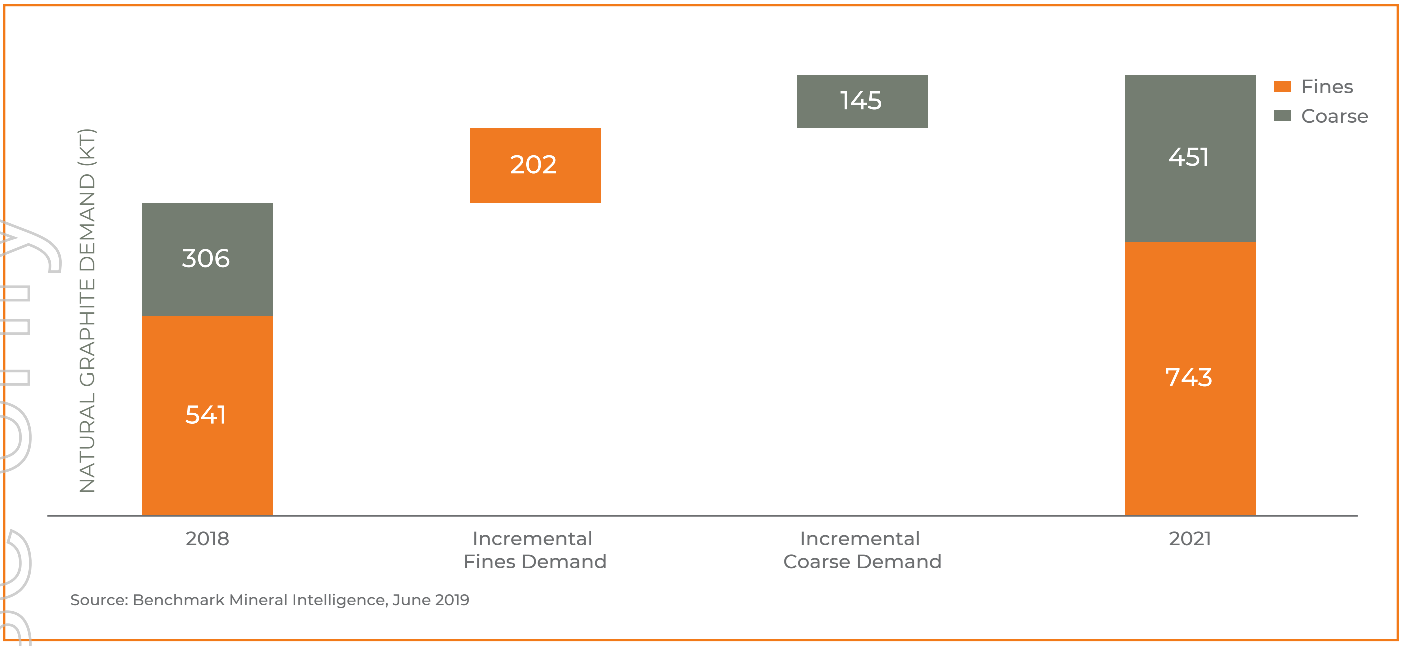


Any additional deposits may also contribute to a reduction in mining operating costs by deferring the need to mine the deepest parts of the main ore body. Some analysis of the impact of exploration on mining costs is provided in Section 4 below, whilst sensitivity analysis of the project economics to a change in mining costs is presented in Section 13.

- **Optimisation of flake size distribution**
  Graphex has conducted extensive testwork on Chilalo product including variability testwork at two separate world-class independent laboratories. Following this DFS, Graphex will continue to conduct optimisation testwork aimed at improving the preservation of coarse flake graphite. Initial results appear encouraging and, if successful, could yield an improved flake size distribution, average sales price and therefore revenue.

- **Future production expansion**
  Expansions to production in the future can increase the Project's cash flows and NPV. The DFS assesses a single-stage development whilst the 2018 PFS assessed a two-stage production scenario. Consistent with other assumptions in the DFS, Graphex has chosen a more conservative approach. There remains a clear need for new sources of coarse flake graphite, as highlighted in Figure 4 below. To satisfy the incremental demand of 145,000 tonnes of coarse flake graphite (shown in Figure 4) approximately four mines the size of Chilalo's planned production would be required by 2021.

Figure 4: Anticipated coarse and fine flake demand growth from 2018 to 2021



The timing and scale of any expansion will be dictated to by market appetite for product and the availability of funding for the expansion.

- **Qualification timeframes and sales ramp-up assumptions**
  Graphex has assumed conservative timeframes for qualifications and sales ramp-up into higher value markets/applications and value-added products. If actual qualification timeframes exceed the DFS assumptions, this can bring forward higher revenues and margins. Graphex has conducted substantial downstream testwork and analytical tests to determine Chilalo product suitability for targeted markets, including graphite foils and fire-retardants. Sales into these applications has great potential to increase the value of the Project.

- **Grid power or lower cost power**
  The DFS assumes that power for the Project will be provided by diesel generators at an average cost of US$0.31/kWh. Power costs represent approximately 10% of the life of mine operating costs of the project (US$84 per tonne of product). There are potential grid power opportunities in southern Tanzania that if realised, would reduce the average power generation cost to approximately US$32/t. The Company will also continue to assess alternatives including the use of LPG and heavy fuel oil and solar generation. This saving in operating costs would contribute towards positive, permanent improvements in cash flows.

NEXT STEPS

In the coming months, Graphex will focus on finalising the funding arrangements for Project development, advancing discussions with potential customers as part of the progression towards binding sales agreements and obtaining the necessary local approvals.

The Company is aiming for a final investment decision in the second quarter of 2020, which if achieved, would see commissioning at Chilalo in the third quarter of 2021, as shown in Table 5.

Table 5: Project development schedule

	Task	2020				2021				
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
		Project/ Construction						Operations		
1	Final Investment Decision									
2	Relocation and compensation of displaced persons									
3	Engineering and design									
4	Procurement									
5	Enabling Works (Camp, Road, Water supply)									
6	Process plant fabrication and delivery									
7	Bulk Earthworks									
8	Concrete Works									
9	Erection of Steel, Mechanical and Platework									
10	Piping, Electrical and Instrumentation									
11	TSF Construction									
12	Mining (establishment and pre-production only)									
13	Commissioning (pre and water commissioning)									
14	Ramp -up (on ore)									
15	Name Plate Production									

The Company will also continue to further investigate those opportunities outlined above which have been identified as having the capacity to deliver improved financial outcomes for the Project.

Further details on the DFS are included in the following pages.

By order of the Board.

Phil Hoskins
Managing Director

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1. DFS SCOPE

Graphex has undertaken a 12-month program of work to ensure the DFS meets the standards required by international resources financiers. The Study has been prepared with an approximate accuracy of ±15%. Potential value-adding opportunities have also been identified and will be incorporated as further investigation of these opportunities is carried out.

The DFS was undertaken by independent experts with substantial experience in the graphite sector and resources projects in Africa. Graphex would like to acknowledge the DFS team, which included:

GR Engineering Services	Process Plant, Engineering Design, Overall Cost Estimation and Report Compilation
BatteryLimits	Metallurgy and Flow Sheet Development
SGS Lakefield	Metallurgy and Pilot Plant Production
CSA Global	Geology, Mineral Resource, Mining and Ore Reserve
ATC Williams	Tailings Storage Facility
AQ2	Hydrology and Hydrogeology
Mine Waste Management	Acid and Metalliferous Drainage
Graphite Market	Independent expert consultants in China and USA
Financial Modelling	Azure Capital

Warren King was engaged by the Company as the Project Manager. Mr King has successfully delivered projects in remote areas of Australia, Asia and Africa.

The scope of work undertaken for the DFS included:

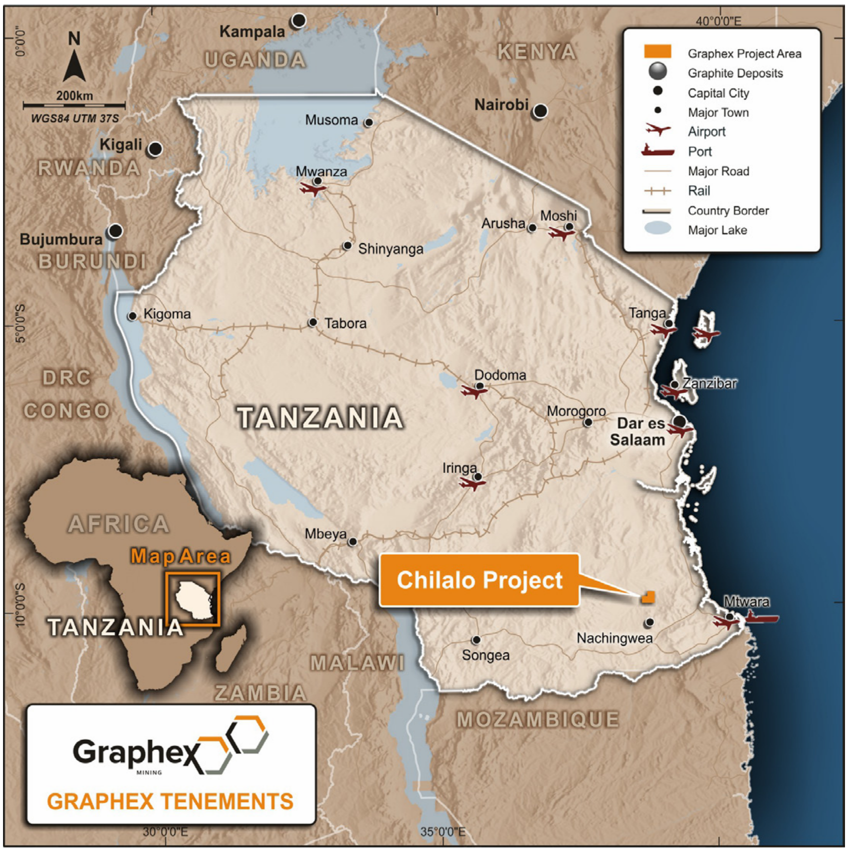
- Update and release of a JORC compliant Mineral Resource Estimate.
- Investigate pit slope stability, develop a mine production plan, mine design and deliver an updated Ore Reserve.
- Complete further lab scale metallurgical test work (including variability testwork).
- Complete a bulk run – processing approximately 30 tonnes of oxide material at SGS in Lakefield.
- Develop a viable and economic process route for producing a marketable graphite product and maximise +50 mesh (+300 µm) graphite flake.
- Produce a Class 3 capital cost estimate (±15%) for the project execution phase.
- Develop and cost a tailings dam design.
- Investigate acid and metalliferous drainage, develop methods to manage the acid forming materials and include costs in both capital and/or operating expenditure estimates.
- Evaluate pit dewatering, mine site surface water management, develop a site wide water balance, assessment of ground water supply potential and impacts of mining on the ground water / surface water system.

- Ensure all regulatory requirements have been adequately progressed and where applicable, updated to allow a smooth transition from the DFS through detailed design, execution and into operation.
- Design and cost the necessary site access road upgrades.
- Evaluate transport and shipping options and costs for construction and operation.
- Revised financial model.

2. PROJECT OVERVIEW

Chilalo is located in the Ruangwa District of the Lindi Region in south-east Tanzania, 100 km north of the border with Mozambique, approximately 180 km west of the coastal port city of Mtwara on the Indian Ocean and 400 km south of Tanzania's largest city, Dar es Salaam as shown in Figure 5.

Figure 5. Project Location



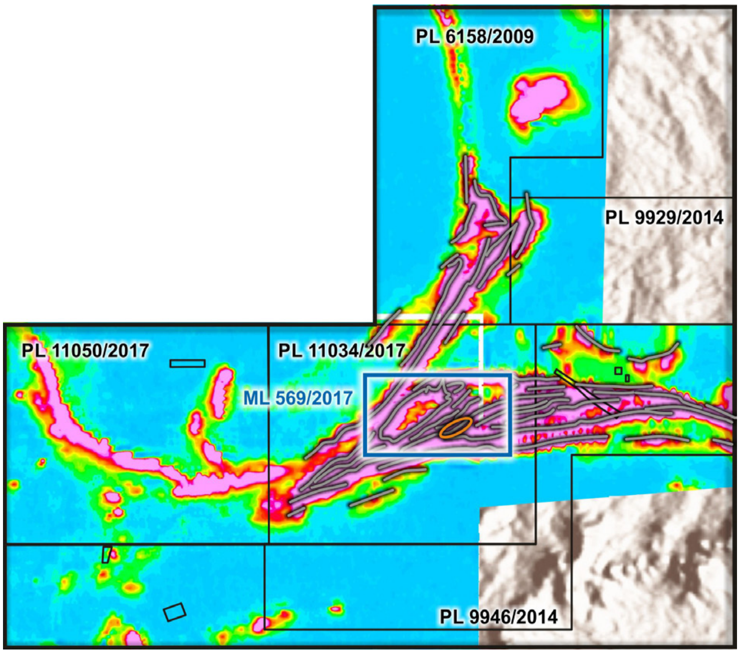
The Project is situated within the Mozambique belt, which is well known for some of the world's highest grade and coarse flake graphite deposits. Through its wholly owned UK subsidiary, Graphex Mining UK No.1 Limited, Graphex owns 100% of Ngwena Tanzania Limited ('**Ngwena**'), a company incorporated under the laws of Tanzania, which is the holder of the Chilalo Mining Licence and various Prospecting Licences.

Chilalo consists of five tenements: one Mining Licence and four Prospecting Licences that cover an area of 170.8 square kilometres as shown in Table 6. The location and details of the Project tenements are shown in Table 6 and Figure 6 respectively.

Table 6. Project tenements: key details

Tenement Number	Tenement Name	Expiry Date	Status	Parties	Area (km^2)
ML 569/2017	Chilalo ML	14-Feb-27	Granted – 3rd Year	Ngwena Tanzania Limited (100%)	9.81
PL 9929/2014	Chikwale	07-Jul-21	Granted - First Renewal	Ngwena Tanzania Limited (100%)	24.02
PL 9946/2014	Machangaja	07-Jul-21	Granted - First Renewal	Ngwena Tanzania Limited (100%)	48.50
PL 11050/2017	Chilalo West	12-Mar-21	Granted - Initial Period	Ngwena Tanzania Limited (100%)	48.82
PL 11034/2017	Chilalo	12-Mar-21	Granted - Initial Period	Ngwena Tanzania Limited (100%)	39.65
					170.80

Figure 6. Location of Project tenements



In July 2014, Graphex (then as IMX Resources Limited), announced that a review of historic rock chip samples from the Chilalo tenement had identified a significant number of samples with high TGC grades. A drilling program commenced in September 2014 and a maiden mineral resource estimate was announced on 7 April 2015. Further drilling in 2015 delivered an increase in the mineral resource and upgrade in the classification of the mineral resource (ASX announcement 13 October 2015) that underpinned a pre-feasibility study, the results of which were announced on 23 November 2015.

Following a 1,365m drilling program carried out in the fourth quarter of 2016, the Company announced an increase in the Chilalo mineral resource (ASX announcement 2 February 2017), which together with an increase in the ore reserve, formed the basis of the 2018 PFS.

The 2018 PFS, which also incorporated up to date graphite prices, additional testwork and revised project parameters, formed the basis for an interim financing decision by funds managed by the Financier under which the Financier provided the Company a US$5 million secured loan facility.

3. MINERAL RESOURCE ESTIMATE

During August 2019, CSA Global completed an updated Mineral Resource estimate for the Chilalo Main and North East deposits of Chilalo (‘**2019 MRE**’).

A total of 30 reverse circulation (RC) holes for 2,666 m and 50 diamond (DD) holes for 5,551.35 m have been drilled and analysed for graphite content directly covering the two modelled deposits. The 2019 MRE is based upon the data obtained from the 2,312.08 m of DD drill core samples and 1,305 m of RC drill chip samples which lie within the interpreted mineralisation solid wireframes. The mineralisation wireframes were modelled using a nominal lower cut-off grade of 5% total graphitic carbon (TGC) for the higher-grade core zones and a nominal 2% TGC lower cut-off grade for the lower grade surrounding zones.

The 2019 MRE is reported from all classified and estimated blocks above a lower cut-off grade of 2% TGC within the high and low-grade zones under the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (‘**JORC 2012**’).[1]

The 2019 MRE is presented in Table 7 below.

Table 7. Chilalo Mineral Resource estimate

Domain	Classification	Zone	Million Tonnes (Mt)	TGC (%)	Contained Graphite (Kt)
High Grade	Indicated	Main	9.2	10.6	982
		North East	1.0	9.5	100
		All	**10.3**	**10.5**	**1,082**
	Inferred	Main	7.4	9.5	704
		North East	2.3	8.8	205
		All	**9.8**	**9.3**	**908**
	Indicated + Inferred	**All**	**20.1**	**9.9**	**1,991**
Low Grade	Inferred	Main	37.8	3.4	1,282
		North East	9.5	4.1	394
		All	**47.3**	**3.5**	**1,677**
High Grade + Low Grade	**Indicated + Inferred**	**All**	**67.3**	**5.4**	**3,667**

1. The Mineral Resource was estimated within constraining wireframe solids using a core high-grade domain defined above a nominal 5% TGC cut-off within a surrounding low-grade zone defined above a nominal 2% TGC cut-off. The resource is quoted from all classified blocks above a lower cut-off of 2% TGC within these wireframe solids. Differences may occur due to rounding.

The mineralisation wireframes were modelled by joining polygons based upon geological knowledge of the deposit, derived from drill hole logs and assay results, surface mapping and downhole and fixed loop electromagnetic modelling results. Two weathering profile surfaces representing the base of complete oxidation and top of fresh rock were generated based on drill hole lithological logging information, drill core photography, petrography and total sulphur assay results. An overburden surface wireframe was generated based on the average overburden depths established from the lithological logs. A topographic surface was generated from surveyed drill collar locations, surveyed track point spot heights and the surveyed spot height grid.

A block model was constructed using Datamine Studio software with a parent cell size of 25 m(E) x 10 m(N) x 5 m(RL). Drill hole sample analytical results were subjected to detailed statistical and spatial (variography) analysis. Composited sample grades for TGC were interpolated into the block model using ordinary kriging with an inverse distance to the power of two weighting check estimate completed for validation purposes. Density values were assigned to the block model based on analysis of measurements taken in the three weathering state domains. The model was validated visually, graphically and statistically.

Geophysical surveys were carried out using versatile time domain electromagnetics, downhole electromagnetic and fixed loop electromagnetic methods. CSA Global is of the opinion that the geophysical results support the modelled extent of graphite mineralisation along strike and down dip at the Chilalo deposit.

Petrographic and extractive metallurgical data support the classification of the Chilalo deposit as an Industrial Mineral Resource in terms of JORC 2012 Clause 49 requirements.

Figures 7 and 8 below show the grade and classification of the 2019 MRE.

Figure 7. Image showing the grade of the high-grade resource

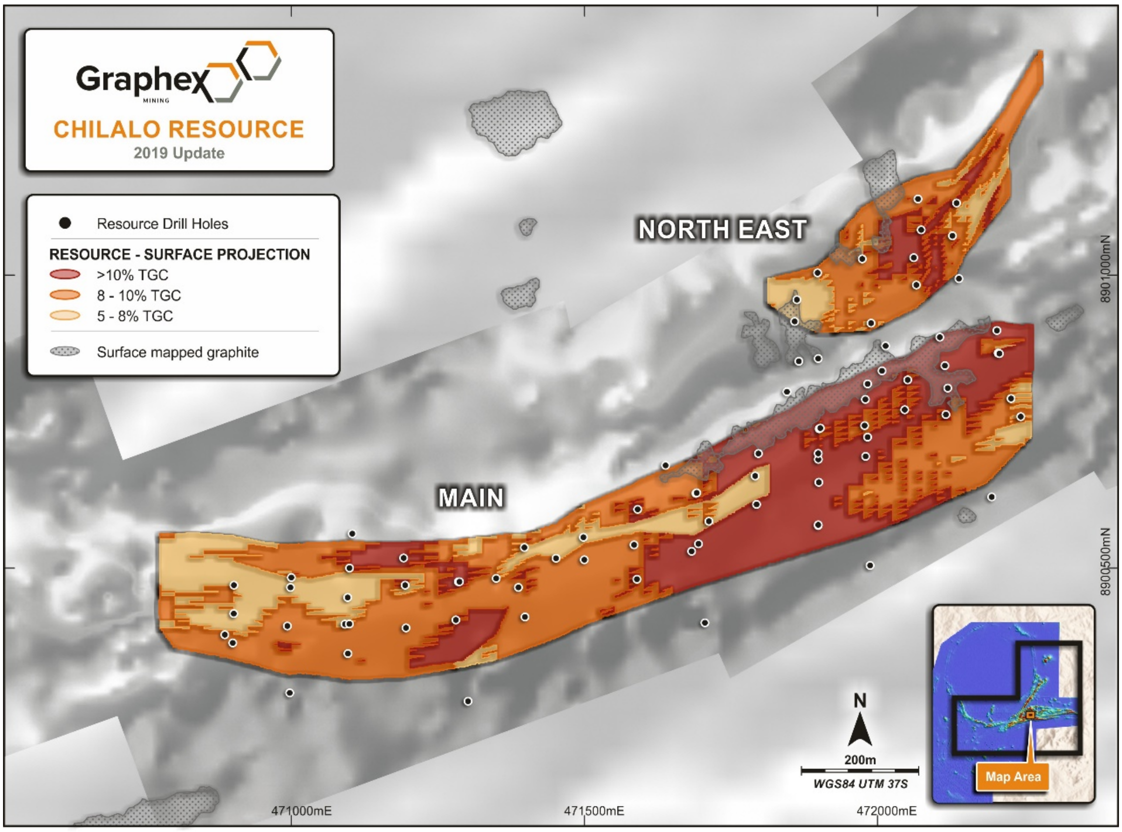
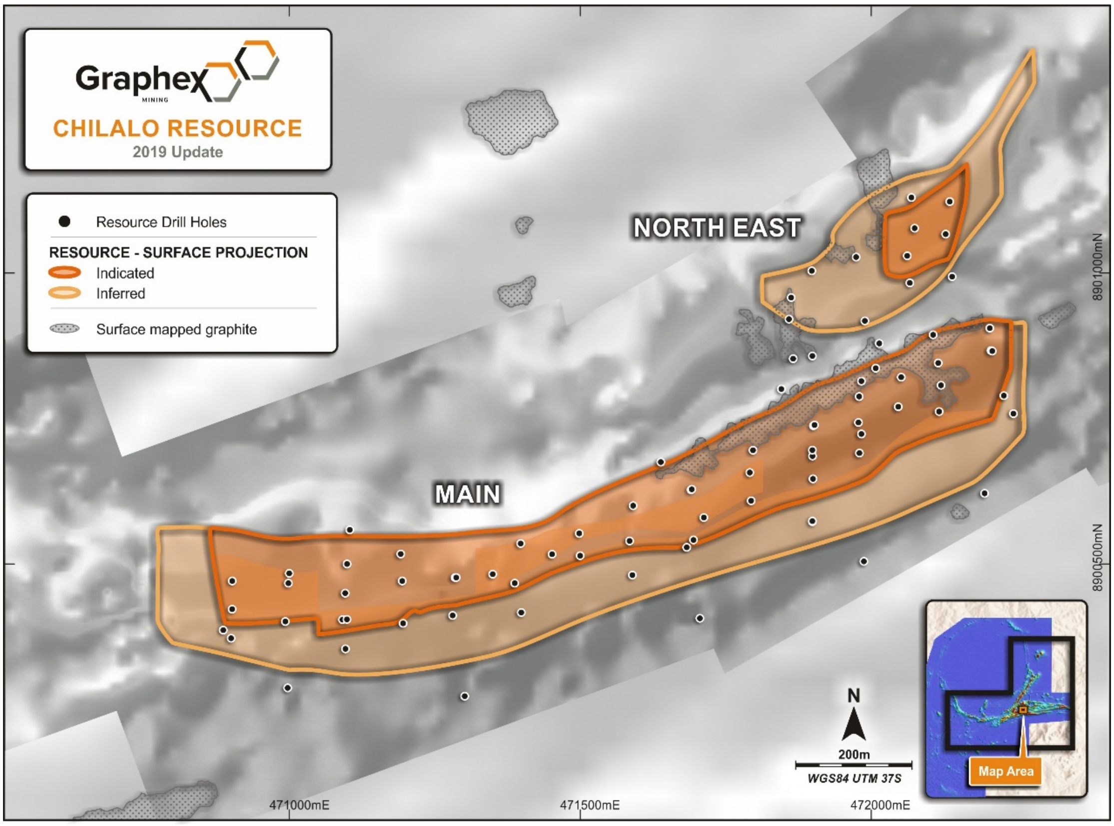


Figure 8. Classification of updated Chilalo Mineral Resource



4. MINING

Open pit mining

The Chilalo open pit mine is planned as a conventional truck and shovel operation, using 40-50 tonne articulated trucks and matching excavators. Operations include drill and blast activities for the majority of the open pit mining. Contractor mining has been assumed for the life of mine. The equipment selection is appropriate for the proposed scale and selectivity of this operation. The selected mining approach is typical for a small to medium scale open pit mining operation.

The geotechnical parameters utilised in the pit design are as per the recommendations by Open House Management Solutions geotechnical consultants.

Initial waste generated from mining is to be used for construction of the Tailings Storage Facility ('**TSF**') and thereafter to be dumped in a designed location outside of the pit.

Mining operating costs have been developed by CSA Global based on a detailed mining model and by using budget estimates from mining contractors with Tanzanian experience. Mining capital costs have been estimated for mobilisation, clearing and topsoil stockpiling, waste for construction purposes, waste pre-strip, and haul road construction.

A fixed value of 10% was used for mining dilution in pit optimisations, production scheduling and cash flow model. A grade of 0% TGC was assumed for dilution material. Dilution for tonnes and grade was also calculated through a dilution skin method and concluded the selected dilution is reasonable.

A fixed value of 95% was used for mining recovery in both optimisations and production scheduling.

Pit optimisation

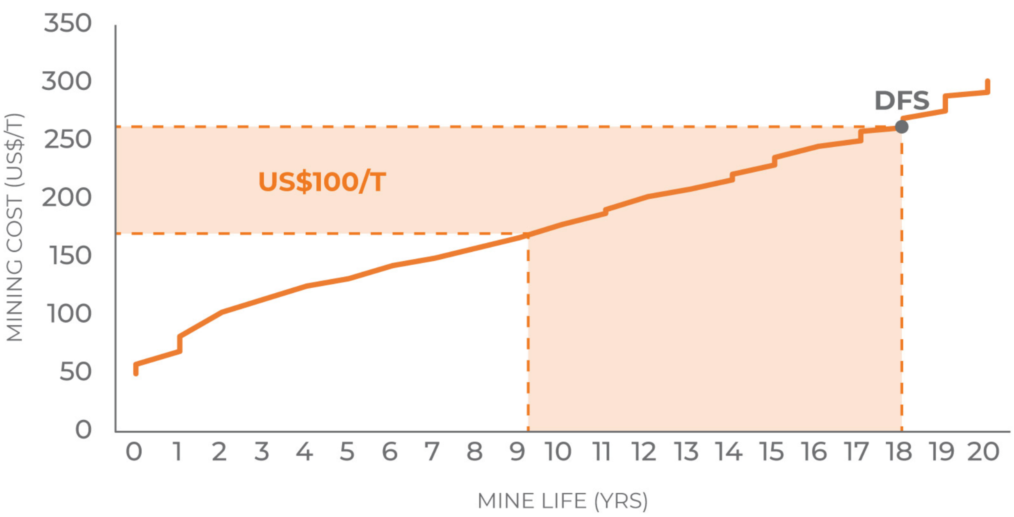
Whittle™ software has been used to generate a series of economic pit shells for this deposit using the Mineral Resource block model and input parameters as agreed by Graphex and CSA Global.

The positive net value method is applied for Indicated ore. Using the selected parameters, a set of nested pit shells were produced by the Whittle optimisation software. The pit shells were used to determine trends in mineralisation and/or higher-grade areas which offer a best-case scenario for grade and discounted cash flow (DCF).

Mining costs vs mine life

Graphex has identified near-mine exploration upside as a potential opportunity to reduce mining costs and grow mine life. Figure 9 below plots the mine life and mining costs from all pit shells generated by Whittle and demonstrates how smaller pits (i.e. shown as shorter mine life) could reduce mining costs.

Figure 9: Mining costs vs mine life (Whittle pit shells)

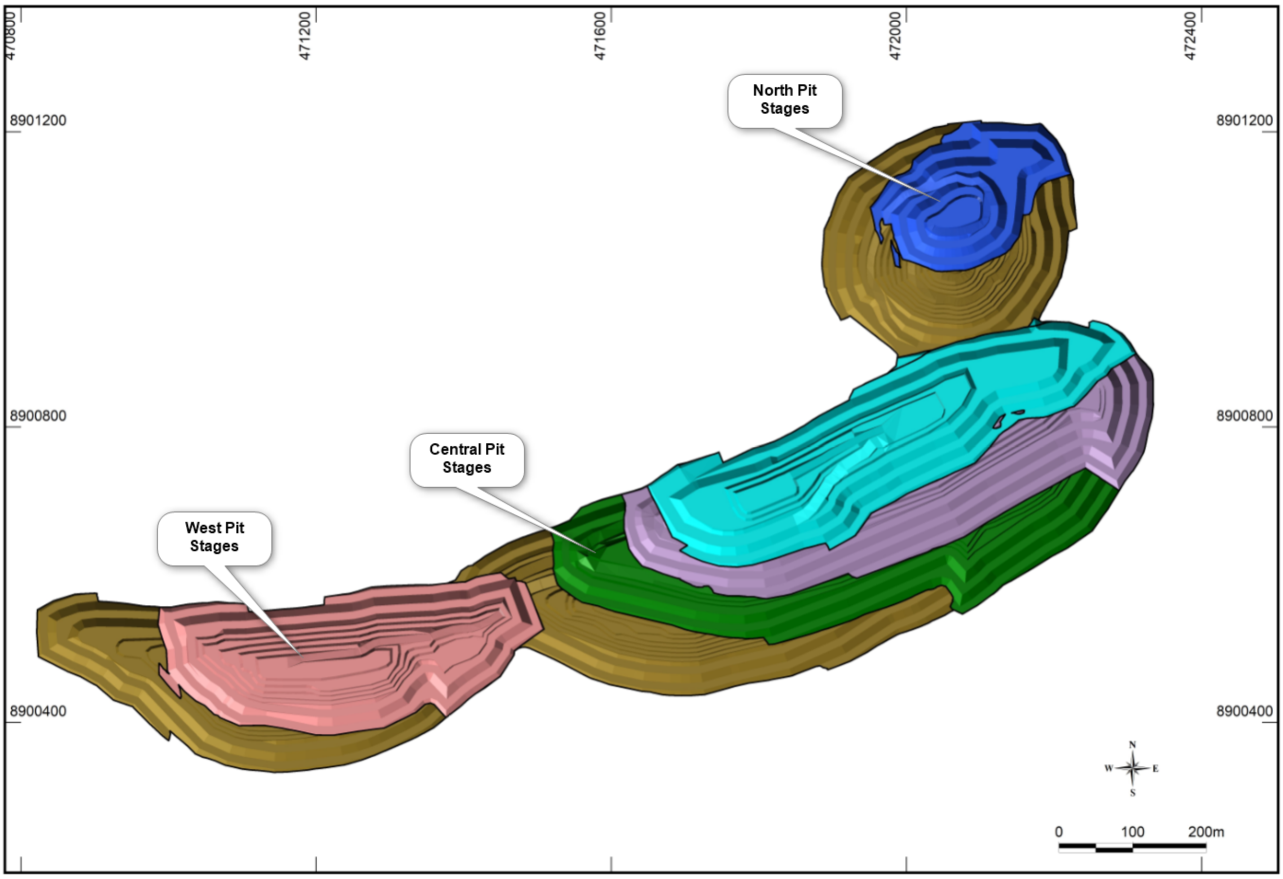


Using Whittle modelling, the revenue factor which generated the highest NPV and underpinned the DFS, was revenue factor 0.80 which shows a mine life of 18 years, mining to a depth of approximately 165 metres with LOM mining costs of US$262 per tonne of product. This compares with revenue factor 0.54 which shows a mine life of 9.1 years mining to a depth of approximately 115 metres with LOM mining costs of US$168 per tonne of product. If additional deposits are discovered, it would delay the need to mine the existing deposit to the depth assumed in the DFS and would be expected to deliver reduced mining costs compared to those in the DFS.

Mine plan

The West and North pits are scheduled to be mined in two stages whilst the Central pit is scheduled to be mined in four stages as shown in Figure 10 below.

Figure 10. Pit design in stages



Ore Reserve

The Ore Reserve estimate for the Chilalo Graphite Project is summarised in Table 9 below and should be read in conjunction with the information required by ASX Listing Rule 5.9.1 and section 4 of Appendix D which contains the JORC 2012 Table 1 Reporting.

Table 9: Chilalo Graphite Project Ore Reserve Estimate

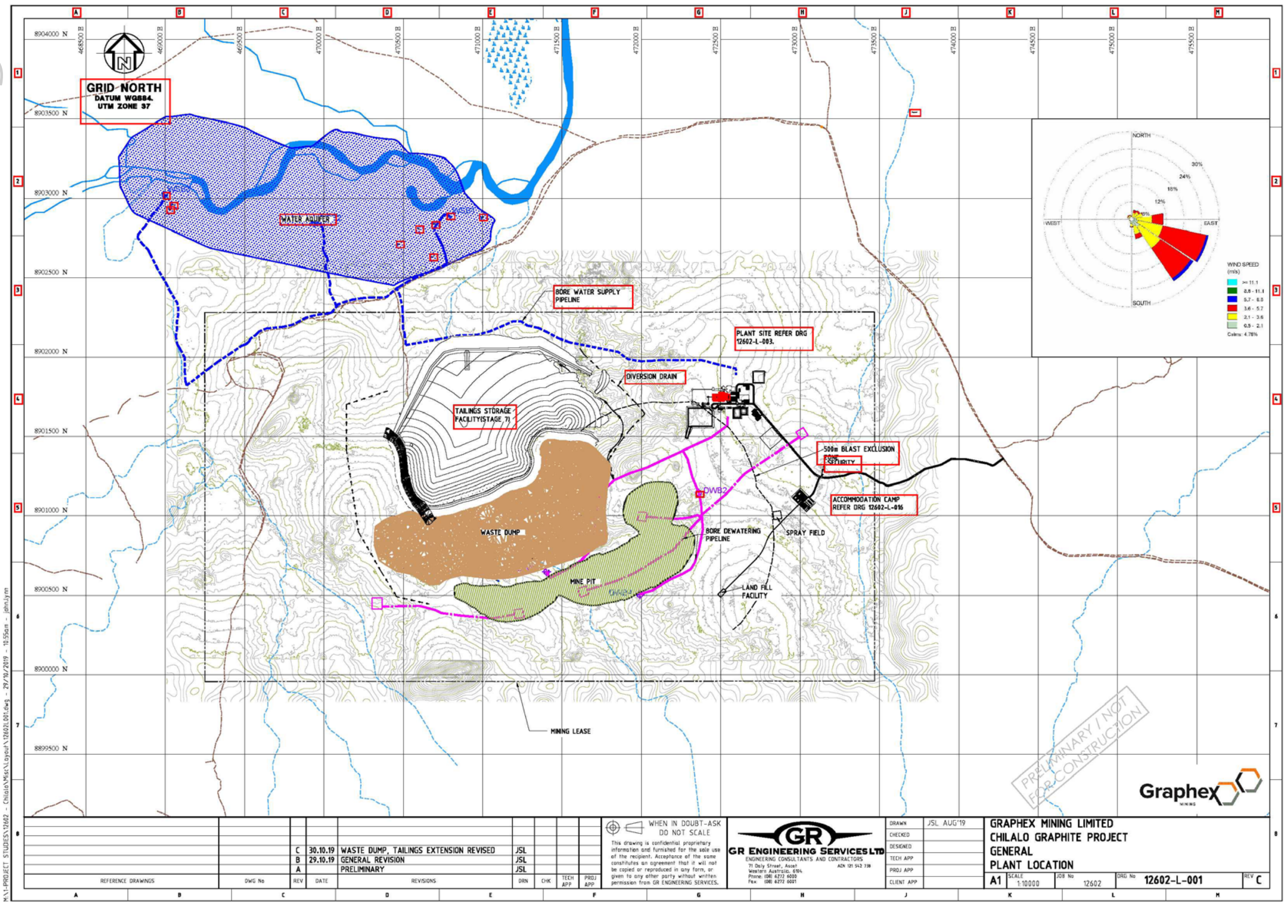
Deposit	JORC classification	Tonnes (Mt)	Grade TGC (%)	Contained Graphite (Kt)
Chilalo	Proved	-	-	-
	Probable	9.2	9.9	878
Total		**9.2**	**9.9**	**878**

A summary of the key DFS information including material information for the Ore Reserve is included in the body of this announcement. Additional details of the material assumptions are set out in Appendix B and Appendix D (JORC 2012 Table 1).

Site layout

The site layout is shown below in Figure 11.

Figure 11: Site layout



5. METALLURGY AND PROCESSING

DFS testwork

Approximately 2t of drill core was used to form global master composites as well as establishing variability composites for the DFS.

The master composites were either Fresh or Oxide ore composites with samples coming from all three areas of the resource (North, Central and West). The samples were selected based on consultation with the CSA Global geological consultant and included consideration of sample representivity, appropriate cut off grades, location within the likely pit shells, mineralisation continuity, mining widths, lithology, weathering, internal waste dilution and spatial representivity within the pits.

The variability composites were formed by splitting the three resource areas into fresh and oxide zones and preparing six individual composites representative of resource area and weathering.

Testwork and optimisation on master composites and subsequent variability testwork indicated a reduction in the flake size distribution from the 2018 PFS. Whilst numerous tests were performed, Table 10 below shows the flake size distribution results for each final variability test at the targeted purity of 95% LOI.

Table 10: Variability testwork – flake size distribution

Mesh size	Microns	North oxide	North fresh	Central oxide	Central fresh	West oxide	West fresh	Weighted average[1]
% of Feed		2%	7%	9%	62%	5%	15%	**100%**
+20	> 850	2.7	0.6	-	0.6	0.7	1.2	**0.7**
+32	500 – 850	12.9	8.8	5.1	10.8	7.0	9.6	**9.8**
+50	300 – 500	20.3	18.0	28.3	20.7	18.1	19.9	**20.6**
+80	180 – 300	20.9	23.5	30.7	27.7	27.5	27.2	**26.9**
+100	150 – 180	4.9	5.6	8.5	6.1	6.3	6.3	**6.3**
-100	< 150	38.3	43.4	27.4	34.1	35.9	35.9	**35.8**

1. Weighted by contribution to life of mine feed to the plant.

Optimisation included variations in polishing times and attritioning times, grinding media size, reagents, alternative equipment and the use of Chilalo site water. Samples from each variability composite were also taken for petrographic analysis / investigation. The petrography program was designed to quantify the number of large flakes present in the ore for each of the variability samples and to understand the extent to which the coarse flakes were liberated, split, thin or composited.

Graphex also engaged the Beijing General Research Institute of Mining and Metallurgy (BGRIMM) to undertake a peer review of the testwork and the flowsheet. BGRIMM's view is that the Graphex flowsheet was well suited to flake size preservation. BGRIMM made various recommendations regarding the flowsheet, a number of which have since been incorporated.

The testwork program included a pilot plant campaign conducted by SGS Lakefield on 27t of near surface weathered material collected from trenches. One of the purposes of the pilot plant campaign was to confirm whether the proposed flowsheet and lab scale results would be achievable at pilot scale and as such what scale-up might be achievable in the commercial operation. Table 11 below shows the results of the pilot plant campaign alongside the SGS lab results on the same material.

Table 11: SGS Lakefield pilot plant and lab results on trench sample

<table>
<tr><th>Mesh size</th><th>SGS – pilot plant</th><th>SGS – lab test</th></tr>
<tr><td>+32</td><td>16.3</td><td>14.5</td></tr>
<tr><td>+50</td><td>24.0</td><td>21.8</td></tr>
<tr><td>+80</td><td rowspan="2">18.9</td><td rowspan="2">29.4</td></tr>
<tr><td>+100</td></tr>
<tr><td>-100</td><td>40.8</td><td>34.5</td></tr>
</table>

The pilot plant results and the lab results are in good agreement, further validating estimated commercial plant performance.

Flake size distribution and weighted average concentrate sales price

Following the pilot plant validation of the proposed flowsheet and laboratory results, the financial model included the variability testwork results in Table 10 for each location within the ore body.

Table 12 below shows the average sales price assumed for Chilalo concentrate. The increasing price is not dependent on price rises of graphite more broadly but on the expected qualification of Chilalo graphite into higher value markets/applications.

Table 12: Average sales price for Chilalo flake graphite concentrate

Mesh size	Microns	Mass Dist. %	Price (Yr1)	Price (Yr2)	Price (Yr3)	Price (Yr4)	Average (LOM)
+20	> 850	0.7	5,000	5,000	5,000	5,000	5,000
+32	500 – 850	9.8	2,359	2,582	2,895	3,031	3,017
+50	300 – 500	20.6	1,745	1,935	2,235	2,357	2,242
+80	180 – 300	26.9	1,057	1,133	1,251	1,299	1,270
+100	150 – 180	6.3	794	853	945	983	969
-100	< 150	35.8	631	673	735	761	749
Weighted average sales price (US$/t) FOB			**1,178**	**1,303**	**1,475**	**1,535**	**1,534**

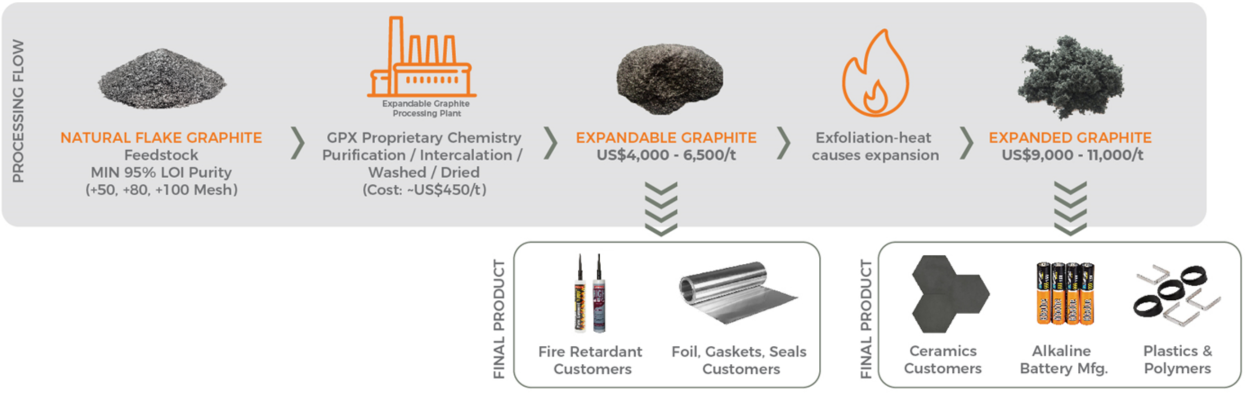
In addition to discussions with potential customers, Graphex has considered pricing from numerous independent sources including Roskill, Industrial Minerals, Benchmark Mineral Intelligence, RefWin-China, Global Trade Atlas as well as its own expert graphite market consultants.

Expandable Graphite (EG) processing

Over the past four years, Graphex has engaged numerous end users as well as three independent laboratories to evaluate the use of Chilalo flake graphite (in various mesh sizes) for the production of expandable graphite and to determine how Graphex expandable graphite would perform when compared to other expandable graphite producers and products. Evaluations have consistently concluded that Chilalo flake graphite, using two different intercalation / oxidation compound formulas, meets the performance characteristics for graphite foils and fire-retardants. Due to its unique chemistry markers, Chilalo flake graphite meets critical parameters that are required for fire-retardant manufacturers.

Figure 12 below demonstrates the flow from flake graphite concentrate to expandable graphite to expanded graphite.

Figure 12: Process flow chart for expandable graphite and expanded graphite



The Company has identified numerous international companies with demand for multiple grades of expandable graphite (shown as 'Fire-Retardant Customers' in Figure 12).

Graphex has signed a term sheet with China's largest expandable graphite manufacturer, Yichang Xincheng Graphite Co Ltd to act as the Company's processing agent, effectively toll-treating Chilalo graphite concentrate into the desired expandable graphite specifications for a processing fee. Importantly, this opportunity requires no capital investment, carries low technical risk as it leverages from existing processing expertise and provides the Company with immediate access to the rapidly growing fire-retardant market. It should be noted that Chilalo graphite will likely follow the path from Chinese expandable graphite manufacturer to western fire-retardant customers without the Company's intervention.

Micronised Graphite processing

Micronised graphite is a processed form of natural or synthetic graphite, produced by fine grinding flake graphite concentrate into specific micron particle size distributions. This process allows smaller mesh sizes (-100 mesh or -200 mesh) to be used as raw material feedstock, creating a high potential margin for producers. The key requirements of micronised graphite are achieving a range of micron particle size distributions (PSD) and PSD axis variances to meet the various specifications and performance metrics for targeted applications.

Graphex has identified a large number of micronised graphite customers and the detailed technical specifications of five standard products required by those customers. Whilst contract sizes can be relatively small, the substantial uplift in value has the potential to significantly increase margins.

Graphex has conducted micronisation equipment product trials with a milling equipment supplier that provides a fully automated, programmable processing system that can achieve up to a ~1.5% improvement in finished product purity. The preferred milling system achieves a yield of ~ 95% on average from the original feedstock with the ability to produce five industry-standard micronised grades to meet market specifications. Figure 13 below demonstrates the flow from flake graphite concentrate to micronised graphite and also lists some of the key applications using micronised graphite.

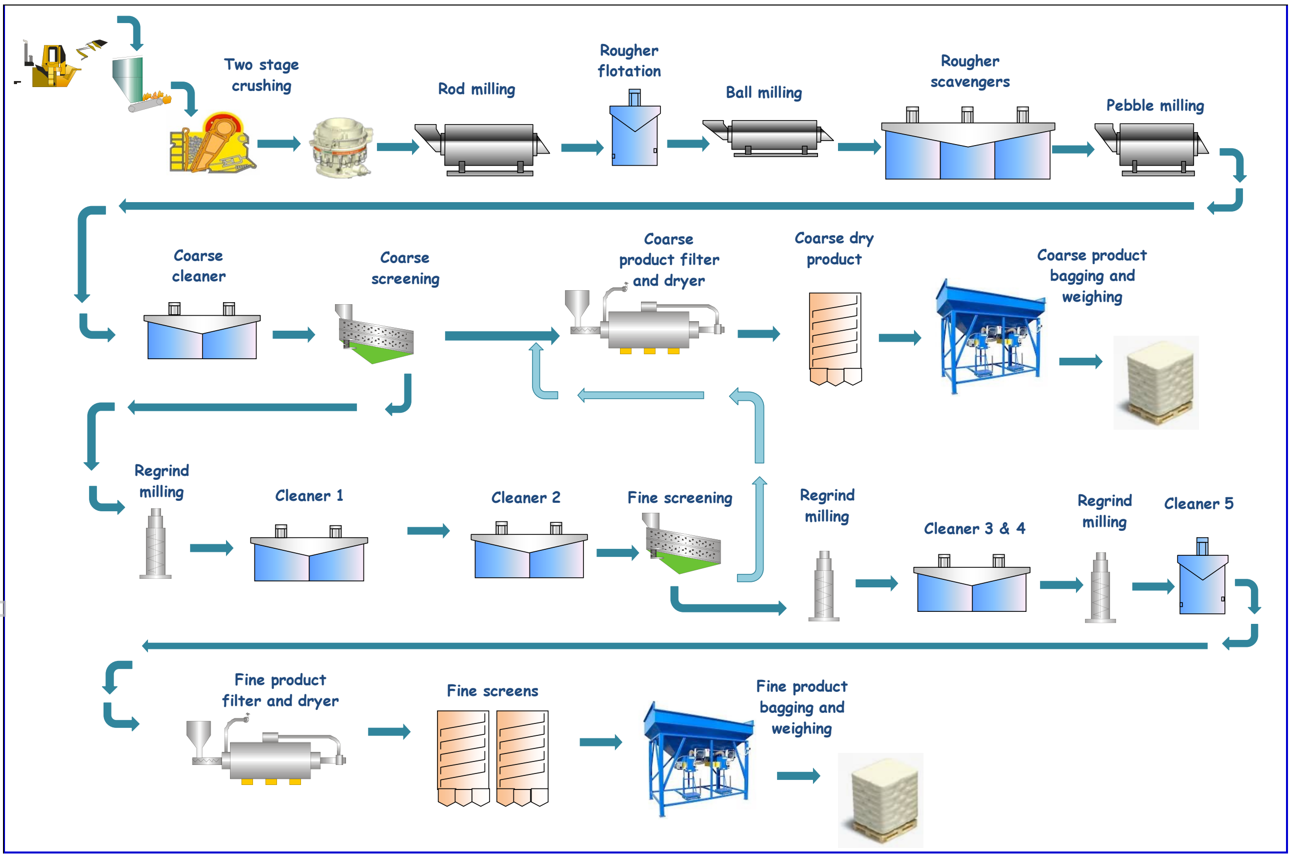
Figure 13: Process flow chart for micronised graphite

6. PROCESS PLANT AND ON-SITE INFRASTRUCTURE

Flowsheet

Set out below in Figure 14 is a simplified flow sheet for the Chilalo process plant.

Figure 14. Simplified flow sheet



Process plant

The Chilalo processing plant has a design throughput rate of 500,000 tonnes per year. The processing plant design for the Project has been based on the process design criteria which has been derived from the testwork and confirmed with pilot plant work (see Section 5, Metallurgy and Processing).

The flowsheet uses proven metallurgical processes based on industry norms or specific vendor testwork that will optimise recovery and minimise operating costs. Equipment selections have been based on fit for purpose duties, reliability and ease of maintenance. To ensure confidence in the process plant equipment selection, all major equipment enquiries were issued to three different vendors and technical adjudications completed on the equipment sizing information provided.

The layout of the plant has been optimised to improve operability, ease of maintenance access and to minimise capital costs.

- Crushing and screening

  The crushing circuit will be a conventional two stage crushing circuit with a jaw crusher as the primary crusher and a cone crusher as the secondary crusher. The secondary crusher will be in closed circuit with a double deck vibrating screen. The size reduction will be from approximately 500mm to 25mm through the crushing and screening circuit. Comminution testwork was completed by ALS Perth.

- Grinding and classification

  Primary grinding will be carried out in a rod mill, which will operate in closed circuit with a rod mill screen. The undersize from the rod mill screen will feed a flash flotation rougher flotation cell, while the screen oversize will be reground in the primary mill. The rougher cell will recover fast floating coarse graphite which will report to the flotation circuit. The rougher tail will gravitate to the ball mill discharge hopper where it will be pumped to the ball mill cyclones. Testwork on wet screens was performed by NAGROM. Comminution testwork was completed by ALS.

- Flotation

  A conventional flotation process will be used to recover graphite concentrate. The flotation circuit will consist of rougher scavenger flotation with regrind followed by multiple stages of screening, cleaning and attrition grinding. The rougher scavenger and the majority of the cleaning cells will consist of conventional rectangular cells. A Jameson cell will be installed in the final cleaning duty to recover the fine graphite.

  The coarse cleaning circuit will consist of a regrind mill, two banks of coarse cleaners (coarse cleaner 1) and a coarse graphite separation screen. The cleaning circuit will consist of three regrind mills, five banks of cleaner cells and two coarse graphite separation screens.

  Sample points will be provided to assist ensuring the metallurgical targets for the flotation circuit are met.

- Filtration and drying

  The final concentrate is then filtered, dried and classified into eight product bins that allow different product grades. Filtration testwork was carried out by Outotec.

  The processing plant includes a coarse filter feed tank and a fine filter feed tank. Moist concentrate cake discharged from the respective filters will feed separate fine and coarse dryers. The filtrate from each filter will gravitate to their respective filtrate tanks from where it will be pumped to the process water pond. The concentrate discharged from each filter will be fed into separate coarse and fine rotary dryers, which will reduce the moisture content of the concentrate to less than 0.5%.

Coarse concentrate from the coarse dryer will be conveyed from the coarse dryer product bin and distributed between two off primary product screens, which will separate the coarse flake into three streams, a +850 µm fraction, a -850 µm +500 µm fraction, and a +300 µm fraction. Fine concentrate will be conveyed from the fine dryer product bin and distributed between six tertiary product sizing screens ranging from -75 µm to +180 µm.

Should different graphite concentrate product sizes be required, screen decks can be changed to suit specific customer requirements.

- Flexibility in packaging

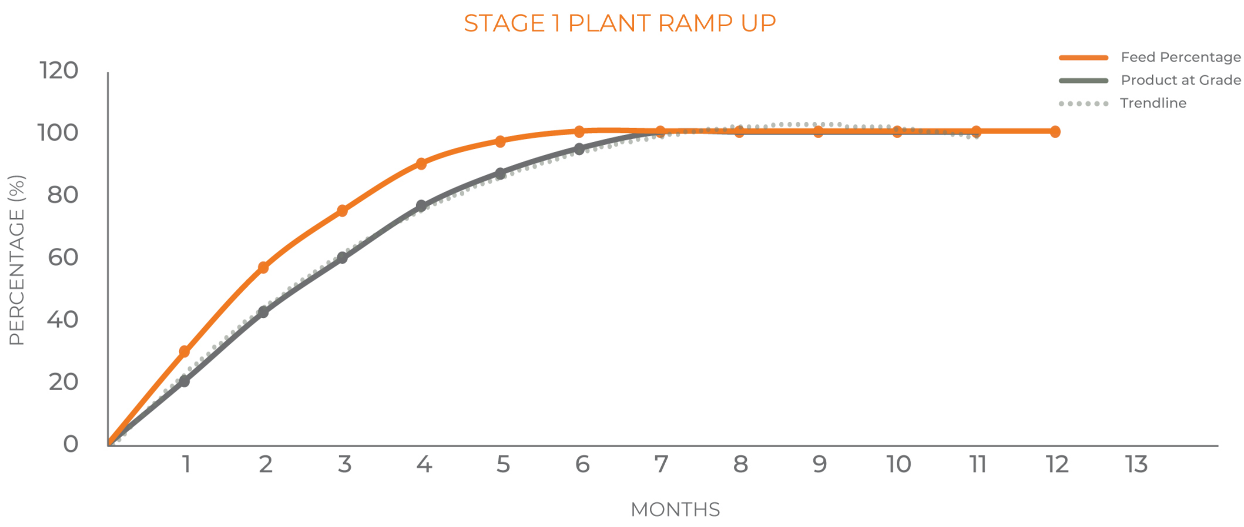
  Graphex believes that providing flexibility in packaging options is important to ensure it can meet the needs of customers' product handling equipment. The plant has been designed to cater for diverse packaging requirements.

Process plant commissioning

The Company intends to involve experienced graphite operators in the commissioning of the process plant. Set out in Figure 15 below are the processing plant commissioning assumptions regarding:

- Plant feed rate (as a percentage of designed feed rate); and
- Graphite recovery (as a percentage of expected recovery).

Figure 15. Chilalo processing plant commissioning assumptions



The orange coloured line represents the ramp-up to plant capacity whilst the difference between the orange and the grey coloured lines represents graphite not recovered or recovered but not within targeted specifications.

On-site infrastructure

- Power

  The Project is estimated to have a maximum demand of 2.8 MW, with an average load of 2.4 MW and an energy consumption of 20.8 GWh/yr, most of which is needed to supply the processing plant.

  The power requirement will be met by utilising a specialist power provider who will provide the applicable power generating equipment and associated diesel storage facilities to provide power on a Build Own Operate and Maintain (BOOM) arrangement.

- Plant Power Station

  The plant power station will consist of a number of independent generating sets connected to a common 415 V busbar and will be positioned next to the process plant. The total number of generators will be governed by a minimum operating philosophy of N+1, where N equals the number of generators required to be in operation at any one time to cope with maximum demand. This will ensure maximum reliability of the power supply. The installation of concrete pads to accommodate the generator sets has been allowed for in the capital cost.

  Other areas that require power, including the accommodation village and the bores and tailings return pumps will have dedicated generators with standby capacity.

- Site Power Distribution

  Processing plant power at 415 V will be distributed throughout the site to plant motor control centres and plant infrastructure facilities via buried cable. Accommodation power at 415 V will feed the main camp distribution board supplied by the camp provider. Remote pumps will be powered by gensets connected to their respective control panels.

- Fuel Storage and Dispensing

  The major site fuel storage will be located adjacent to the power station. It will be constructed using a horizontal fuel tank contained within a bunded area and supplied, installed and maintained by the power station provider. Diesel fuel will be delivered to site by road tankers where the fuel will be discharged into the storage tanks. There will be a single point loading facility with reticulated pipework to transfer diesel fuel to the tanks.

  Fuel for the plant generators and plant dryers will be pumped from the tanks using dedicated pumps. Fuel supply to the remote generators will be done using a trailer mounted fuel tank and bowser. Fuel meters will be installed on filling and feed points to account for fuel usage. The storage tanks will have a fuelling point that will service plant and light vehicles operating in the process plant facility.

  The installation of concrete pads to accommodate the fuel storage tanks has been allowed for in the capital cost.

  The mining contractor will establish a separate fuel storage facility to service the mining fleet and pit dewatering pumps. This facility will be located in the mine contractor’s compound.

- Water supply

  The water balance study has shown that the mine’s demand (maximum of 26L/s for process and dust suppression) can be met by supplies from:

- Open pit dewatering bores;
- In-pit dewatering sumps to remove surface and rainfall ingress;
- Return flow from tailings; and
- A borefield installed into the Mbwemkuru palaeochannel.

To reduce surface water inflow and potential for flooding, all works for diversion of surface flow around the open pits is planned to be in place from start of mining. Significant inflow from surrounding catchments will still occur until end of year 7 when North Pit is mining is complete. At this time North Pit will become storage for surface inflow, reducing surface water contribution to the overall water supply.

During periods of low rainfall, the Mbwemkuru borefield will be equipped to make up supply shortfall. The borefield has been shown to produce sufficient yield to replace other sources for extended periods if required.

- Concentrate storage

The concentrate storage shed at site, which will abut the bagging plant, is a dome shaped construction with dimensions of 24 metres long by 30 metres wide by 9.4 metres high (dome height) capable of holding approximately two weeks of production.

Graphex will be allocated 3,000m^2 of undercover storage area within the logistics contractor's bonded warehouse which is sufficient to store approximately 5,000t of finished products (10% of annual production) if they are stacked to a height of three bags. This allows the Company to retain a 'safety stock' of packaged product across all flake sizes, in order to be positioned to readily respond to unplanned customer orders that require immediate delivery.

- Mining facilities

The mining facilities comprise the mining contractor's compound. The buildings, workshop, washdown and mining equipment associated with these facilities will be supplied by the mining contractor. The mining contractor's facilities (office, workshops and ablutions) will be placed in a security fenced compound located north west of the processing plant.

- Accommodation

The permanent camp accommodation will initially be used for construction personnel to limit the impact of the influx of people into the area. General labour will be located in the surrounding towns and villages. Allowances for accommodation and messing have been included in the build-up of construction labour rates.

The 180-person accommodation capacity of the camp has been determined as that required for the estimated operations workforce. The estimate covers variability in estimates of workforce numbers, staff turnover, the requirements for visitors and the need to accommodate extra personnel for maintenance shutdowns.

7. TAILINGS STORAGE FACILITY

The TSF at Chilalo has been designed to store the quantity of tailings that will be produced over the life of mine.

The initial embankment will be a maximum of 12 m high and approximately 700 m in length. It is anticipated that by the end of mine life, the main containment embankment will have a maximum height of approximately 24 m and will be 1550 m long with a total impoundment volume of approximately 9 Mm^3. The upstream embankment face will be lined with a bituminous geomembrane and the TSF impoundment will be lined with a high-density polyethylene ('**HDPE**') membrane.

Six stages of raising have been allowed for. Materials for embankment raising will be obtained predominantly from mining operations, with the low permeability zone material recovered from near surface borrow pits.

Tailings properties have been determined on the basis of laboratory testing conducted on samples of oxide and fresh tailings produced during pilot plant operation. Geotechnical design parameters have been assigned on the basis of available geotechnical investigation data from drilling of three boreholes on the main embankment alignment and excavation of 29 test pits in the TSF impoundment, waste dump, and pit footprint areas.

Design of the TSF has taken into account the following guidelines:

- The United Republic of Tanzania Ministry of Water, "The Water Resources Management Act (Dam Safety)"; and
- The Australian National Committee on Large Dams – Guidelines on Tailings Dams – Planning, Design, Construction and Closure.

8. HYDROLOGY AND HYDROGEOLOGY

The mine site is located in an area of relatively high, but very seasonal rainfall (the wet season runs from the end of November to April) and an area of low groundwater potential in and around the ore body. As a result, groundwater inflow into the open pits is low (<3.5 L/s), although wet season pumping of rainfall and surface water inflow (from localized pit area catchments) is likely to be necessary.

Mine dewatering

Pit dewatering is proposed by:

- Pumping of three low yielding dewatering bores already installed outside of the proposed open pits (estimated maximum of 2.4 L/s); and
- Sump pumping, from the base of the three different sub-pits (average 28 L/s during the wettest month of January for an average rainfall year).

Yield from dewatering bores will be directed to the process plant. Impacted yield from sump pumping of open pits will be directed to the TSF. This will permit settling of sediment from stormwater before TSF bleed is pumped to process plant storage.

Both groundwater inflow and pit stormwater dewatering infrastructure will be required to manage water entering the pit. Three dewatering bores are proposed to be located just outside of the pit footprint, fitted with pumps and associated pipeline infrastructure. These bores serve to assist in maintaining water levels within the pit below the water table to allow mining to occur. Dewatering from inflow to bores will be transferred via pipeline to the process plant for use in the process water circuit.

Additionally, runoff will enter the pit via direct rainfall and the draining of external catchments following rainfall events. This runoff is proposed to be removed via multiple pipelines and pump systems located in the pit sumps and will be directed to the TSF for settling of sediment, where it will contribute to the TSF bleed and process water supply.

Surface water management

Surface water management measures including diversion drains, flood bunding and sediment basins, have been designed to prevent flooding of mine operations following a large rainfall event. Where possible, clean water will be diverted around mining infrastructure and released to a downstream channel. Sediment-laden water with similar quality to streams (including runoff from capped waste rock dumps) will be diverted to sediment basins, ultimately being released to the environment once sediment has been removed.

The primary diversion drain is proposed to be implemented at project initiation to divert an upstream catchment of 4.4 km^2 (from the south) around the pit footprint and release it to a drainage path to the west of the project site. The drain is expected to be approximately 1.7km in length with flow depths not exceeding 1m. Additional smaller diversions are proposed to divert external runoff along the waste dump's east and west boundaries towards sediment basins, with catchment areas of 20 and 70 ha, respectively.

Flood bunding is proposed to be implemented around the camp footprint, while no diversions are required for the plant infrastructure.

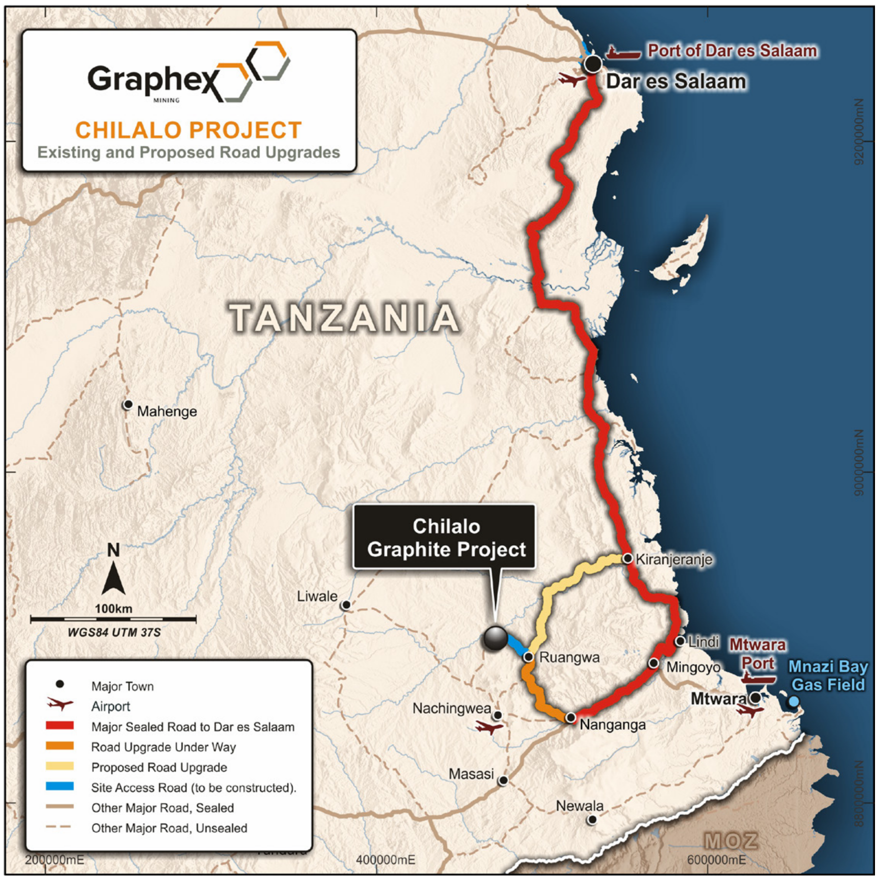
9. OFFSITE INFRASTRUCTURE AND LOGISTICS

Road access

Access to the Project from the city of Mtwara (approximately 240 km), is via a bitumen road to Nanganga (148 km), from which there is an unsealed road of approximately 60 km from Nanganga to the village of Ruangwa. A Government approved project to upgrade the road from Nanganga to Ruangwa is continuing, with the road initially upgraded to a high-quality gravel road and now being progressively sealed with bitumen. From Ruangwa, there is an unsealed road of 32 km to the Project.

Access to the Project from Dar es Salaam (approximately 638 km) uses the existing national road network which passes through the towns of Nangurukuru, Lindi and Mingoyo before connecting with Nanganga. With the exception of two sections of the road – Nanganga to Ruangwa (60 km) and Ruangwa to Chilalo (32 km) – the entire road from Dar es Salaam is bitumenised. As noted above, the Nanganga to Ruangwa portion of the road is currently being progressively sealed with bitumen. The Government is considering upgrading the road from Ruangwa to Kiranjeranje (Figure 16), which would allow for Chilalo product to be trucked from site to Dar es Salaam via Kiranjeranje. This would reduce the distance from Chilalo to the Dar es Salaam Port to approximately 400km and result in material savings in both trucking time and cost (approximately US$20/t).

Figure 16. Chilalo Graphite Project: Existing and proposed road upgrades



Design of the road from Ruangwa to the mine has been completed. This road has been designed in accordance with the standards of the Tanzanian Rural and Urban Roads Agency and will be suitable for regular traffic of trucks and for large low-bed semi-trailer trucks.

A major intersection will be constructed at the intersection of the mine access road and the road from Ruangwa to ensure a clear view of activities for vehicles and pedestrians. A major road will be constructed from this intersection to the mine site which will be used to access the plant site for construction and then in operations to transport bagged graphite product from site and to bring in reagents, spares, diesel and other consumables. This road, which is situated within the area of the Mining Licence, will be 9 m wide to accommodate two-way traffic, unsealed and have a design speed of 60 km/h.

Air access

At Mtwara there is a commercial airport from which daily passenger flights to and from Dar es Salaam take place. The Mtwara Airport has two runways, the longest of which is asphalt surfaced and is capable of receiving commercial aircraft. A private air strip at Nachingwea, located approximately 50 km from Chilalo, and accessible by a good quality gravel road, is also available for air freight and chartered passenger aircraft.

Product transport and shipping

Graphite concentrate produced at Chilalo will be transported by truck to the international port of Dar es Salaam, a distance of approximately 638km, which is predominantly by sealed bitumen road. The Company had previously planned to truck Chilalo product to the Mtwara Port, from where shipping was proposed, however, having conducted a detailed investigation of the shipping alternatives, Chilalo graphite will now be trucked to, and shipped from, the Dar es Salaam Port.

In 2017, Tanzania Ports Authority commenced an expansion project to increase the capacity of the Mtwara port from 400,000 tonnes per annum to 750,000 tonnes per annum with the project forecast to be completed within 21 months. There are no official reports as to when the expansion project will be completed and the port reopened, however it is expected to be during 2020.

During 2019, all vessels have been restricted from docking at the Mtwara Port by the government however, in the event that there are enough containers requested to be collected, a container vessel may be permitted to stop there. Whilst smaller feeder vessels could be used to trans-ship through Dar es Salaam, it is currently more cost effective to truck to and ship directly from Dar es Salaam.

The Company expects that upon conclusion of the Mtwara Port expansion project, there will be sufficient regional containerised shipping requirements for transport of graphite from the Mtwara Port to commence from year 3 of operations.

10. PRODUCT MARKETING

How is the graphite market different to other commodities?

Flake graphite is not an exchange-traded commodity and trading of flake graphite does not take place on the London Metals Exchange. Prices are negotiated directly between buyer and seller. Independent information regarding graphite pricing and market supply/demand is therefore difficult to come by as it's treated as the intellectual property of suppliers and customers.

Flake graphite is not a commoditised or homogeneous product. It comes in many different sets of specifications, each with unique characteristics. As a result, there are wide-ranging uses of the different mesh sizes and purity levels of flake graphite.

The physical and chemical properties of each flake graphite 'signature' are unique from one mine to another. Graphite suppliers are therefore required to qualify their products directly with potential customers. This process begins with customer testwork on laboratory samples. Once it has been determined that the graphite product is suitable, customers will request trial orders from commercial production ranging from 5-100 tonnes. Once trial orders have been confirmed to meet customer specifications, sales agreements can be negotiated.

The process of qualification is more stringent for customers of high-value or higher specification flake graphite. For example, customers requiring graphite for fire-retardants can go through qualification timeframes of 12 - 24 months. Conversely, there is little qualification required for refractory graphite, with the minimum carbon purity being the only requirement. Flake graphite products requiring more unique/stringent quality requirements will achieve higher prices as a result while prices for selling into refractory manufacturing are low.

Chilalo product

Graphex has a distinct signature in its Chilalo resource, possessing specific metallurgical and chemical attributes ideally suited for foils, fire-retardants, engineered products, lubricants, and thermal drilling fluids. The Chilalo resource has proved that it can be processed, using standard flotation, to achieve 95% to >99% LOI as well as achieving higher than average coarse flake fractions. These attributes are expected to produce a high-value product suitable for high-tech and higher priced applications.

The Chilalo process plant will have the screening capability to produce up to 8 different standard mesh size products at one time and with the interchangeability of screen decks, it will have the capacity to meet customer's expectations irrespective of their mesh size requirements.

Graphex will offer two base range carbon purities with the ability for additional processing to meet customer-specific and market mesh size specifications in the future. Graphex will also seek to produce and qualify a high-purity (>99% LOI) product once commercial production of the base range products has been achieved.

Graphite pricing

Graphite does not trade on a designated metal exchange, with prices negotiated between buyer and seller. These factors result in pricing for graphite being opaque.

Maximising sales prices requires consideration of numerous activities outside of merely providing high-quality graphite products, including ISO certification for quality control and environmental, provision of a range of packaging options for customers, flexible product screening, branding and assessing the nature of the sales counterparty, sales contract volume and term. Of course, flake size and purity are major drivers of pricing.

The DFS pricing assumptions are provided further above in Table 12.

Marketing strategies

The Company's sales and marketing strategy is multi-faceted and is focused on maximising revenues and margins and positioning Graphex as the supplier of choice for high-value graphite products.

This approach is expected to enable the Company to achieve diversifications across three key areas:

- **Geographical diversification** – during 2019, the Company has strengthened its customer engagement with potential customers in Europe, USA and Japan, complementing its already strong relationships in China.
- **Diversification in applications / markets** – in addition to the Company's focus on expandable graphite for foils and fire retardants, the Company is targeting additional applications including thermal management, lubricants, carbon brush, high-end refractories, dispersions, ceramics and hot metal toppings. The Company is focused only on high-value applications for which Chilalo graphite is suitable and as such, does not intend to participate in the competitive refractory tendering processes which represent the low-price, high-volume end of the graphite market.
- **Diversification of flake graphite vs value-added products** – owing to longer qualification timeframes and more stringent reliability and consistency requirements for most value-added graphite products, pricing of these products is less volatile than pricing for flake graphite concentrate. A sensible value-added strategy will enhance revenues and profits prior to consideration of production expansions.

The Company expects that, as it continues to qualify Chilalo product with high-value customers in the early years of operations, the average sales price for its standard mesh flake graphite concentrate will continue to increase.

Status of sales agreements

Non-Chinese graphite customers will not sign binding sales agreements until they have processed a commercial bulk trial shipment (20-100t) from the commissioned and calibrated commercial plant to verify positive lab results from initial qualifications. As stated in the ASX announcement dated 26 June 2019, Graphex also believes that whilst Chinese customers are willing to sign sales agreements, the lack of pricing in these agreements means they are not legally binding or enforceable as true sales agreements. This highlights the critical importance of due diligence by a potential financier on the graphite market, a company's sales and marketing strategy, a thorough understanding of the graphite market and industry, and its relationships with prospective customers.

Downstream testwork highlights the suitability of Chilalo flake graphite for all high-value and high-growth target markets. The Company has clearly had a significant level of engagement with interested parties (particularly in China) for companies at this stage of development.

Whilst Graphex has the ability to enter into 'offtake agreements' similar to those reported by a number of ASX listed graphite development companies, it will continue to work with the Financier as to the most suitable customers and the appropriate timing for entering into binding and legitimate sales agreements.

Expandable graphite (EG)

Over the past four years, Graphex has engaged numerous end users as well as three independent laboratories to evaluate the use of Chilalo flake graphite (in various mesh sizes) for the production of expandable graphite and to determine how Graphex expandable graphite would perform when compared to other expandable graphite producers and products. Evaluations have consistently concluded that Chilalo flake graphite, using two different intercalation / oxidation compound formulas, meets the performance characteristics for graphite foils and fire-retardants. Due to its unique chemistry markers, Chilalo flake graphite meets critical parameters that are required for fire-retardant manufacturers.

The Company has identified numerous western fire-retardant customers with demand for expandable graphite. Fire-retardant customers do not purchase flake graphite concentrate. They buy expandable graphite that is exclusively manufactured in China. Rather than selling graphite concentrate to a Chinese expandable graphite manufacturer who then makes substantial margins upgrading it into expandable graphite for fire-retardant customers, Graphex conducted due diligence on various Chinese expandable graphite manufacturers to act as a processing agent for a fee. To this end, Graphex has signed a term sheet with Yichang Xincheng Graphite Co Ltd, China's largest expandable graphite manufacturer.

Importantly, this opportunity requires no capital investment, leverages from existing processing expertise and provides the Company with immediate access to the lucrative and rapidly growing value-added markets. It should be noted that Chilalo graphite will likely follow the path from Chinese expandable graphite manufacturer to western fire-retardant customers without the Company's intervention. The opportunity to share in this upside is compelling, given the Company's relationships with Chinese expandable graphite manufacturers.

Whilst the Company has exhaustively tested the suitability of Chilalo graphite for the required specifications, it will work with the EG Processing Agent over the coming months to lab qualify Chilalo expandable graphite with the targeted customers. Qualifications from commercial production can take 12-24 months from first trial shipment with 24-month qualification timeframes and a protracted sales ramp-up being included in the DFS assumptions.

The DFS is based upon pricing between US$5,200 and US$6,200 FOB per tonne for expandable graphite dependent on the flake size of the feedstock (either +50 or +80 mesh). Pricing was based on recent transactions and provided to the Company by an independent consultant with relevant expertise in the expandable graphite market.

Micronised graphite

The strategy to pursue micronised graphite has a number of advantages:

- Natural flake graphite feedstock to produce micronised graphite is -100 mesh, 95% LOI, which is also a graphite product competing with Chinese suppliers and Syrah Resources Limited and is therefore more likely to attract low prices;
- Micronisation equipment is relatively low capital cost (even so, it is proposed as a second phase following commissioning of the main Chilalo plant); and
- Significant value uplift is achievable (weighted average sales price for standard purity micronised graphite based on Graphex's targeted product mix increased to US$2,802/t FOB Port compared with significantly lower prices for selling -100 mesh concentrate into China).

Graphex has identified a large number of micronised graphite customers and the detailed technical specifications of the five standard products sought by customers. Whilst contract size is relatively small in comparison, the substantial uplift in value has the potential to significantly increase margins.

Graphex has initiated micronisation equipment product trials with a milling equipment supplier that provides a fully automated, programmable processing system that can achieve up to a ~1.5% improvement in finished product purity. The preferred milling system achieves a yield of ~ 95% on average from the original feedstock with the ability to achieve five industry-standard micronised grades to meet market specifications.

The DFS assumes that a micronisation unit capable of producing ~8,000 tonnes of micronised graphite (based on the targeted product mix) is funded out of cash flows, with construction commencing at the beginning of year 1 (ie. 12 months after construction of the main plant is complete allowing sufficient time for calibration and commissioning).

The DFS has assumed a ramp-up of micronised graphite sales aligned with conservative qualification timeframes such that the 8,000-tonne production level is not reached for 5 years. Capital and operating costs for the DFS have been provided by the equipment manufacturer.

Graphex has targeted two of the five standard industry grades for in-house evaluations and subsequent customer testing. The customer information obtained will be used in creating technical specifications for Graphex micronised flake graphite products for future development.

The Company has worked with an independent consultant with over 15 years' experience in the micronised graphite industry, with pricing being based on recent transactions. The fine milling equipment preferred by the Company for micronised graphite production is capable of producing all five targeted products. Table 13 below shows the targeted product mix within the five standard micronised graphite products and the average sales price assumed for the Study.

Table 13: Standard Purity Micronised Graphite – Product Mix and Average Sales Price

Product	Price (US$/t)	Product Mix	Average Sales Price (US$/t) FOB
Product 1	1,620	40%	648
Product 2	2,429	10%	243
Product 3	3,555	35%	1,244
Product 4	3,844	10%	384
Product 5	5,646	5%	282
Average Sales Price			**2,802**

11. CAPITAL COST ESTIMATE

The capital cost estimate includes all costs prior to the commencement of production including mine development costs.

In general, the approach is as follows:

- The engineering of the process plant associated infrastructure and the procurement of equipment will be performed by a competent engineering company which will deliver detailed construction drawings and adjudicated equipment selections approved for purchase.
- Equipment will be purchased by Graphex with expediting, quality control and logistic control undertaken by the appointed engineer.
- Construction management will be performed by Graphex utilising experienced construction management personnel.
- Construction will be undertaken by local and regional contractors on either a fixed lump sum or rates basis.
- The mine establishment will be executed by a mining contractor under direct contract with Graphex.

The estimate includes all the necessary costs associated with process engineering, design engineering and drafting, procurement, construction and construction management, commissioning of the process facility and associated infrastructure, mining establishment, first fills of plant reagents and consumables, spare parts and working capital required to design, procure, construct and commission all of the facilities required to establish the project.

The estimate is based upon preliminary engineering, quantity take-offs, budget price quotations for major equipment and bulk commodities. Unit rates for installation were based on market enquiries specific to the project and benchmarked to those achieved recently on similar projects undertaken in the African minerals processing industry.

The estimate is quoted in third quarter 2019 United States Dollars (US$) to a level of accuracy of ±15%. It is based on Owner's costs for the Project being inclusive of salaries, messing and accommodation, flights, equipment hire, communications and project insurances. Owner's Costs are included in the capital cost estimate.

The capital cost estimate is summarised in Table 14.

Table 14 - Capital cost estimate – Chilalo flake graphite concentrate plant

Capital Costs	US$M
Bulk earthworks	1.4
Process plant	41.8
Tailings storage facility	6.2
Raw water supply	0.2
Roads	1.3
Mining (incl pre-strip)	4.5
Land access and resettlement	1.4
EPCM	9.7
Owner's costs	7.9
Other	5.2
Contingency	7.8
Total Capital Summary	**87.4**

Capital cost increase since 2018 PFS

The capital cost estimate has increased since the 2018 PFS for the following reasons:

- The 2018 PFS assumed Chinese manufactured equipment and a full Chinese EPC and installation. Tanzanian local content laws and regulations are somewhat prescriptive in relation to local content requirements for mining development and operations. While the Company will investigate whether the Tanzanian Government would grant a waiver to allow for a full Chinese manufacture and construction, the DFS has been prepared in compliance with Tanzanian local content requirements.
- Scope changes aimed at maximising revenue for graphite products including:
    - Process plant flexibility to separate coarse and fine products.
    - Additional screening capabilities.
    - Flexibility in product packaging.
- The Tailings Storage Facility requires an HDPE liner to prevent potentially acid forming tailings and waste rock dump runoff from affecting ground water.
- Western equipment preferred to Chinese equipment for critical areas of the process plant – the Company has sought guidance from existing operations in this regard.

The DFS capital cost estimate has been benchmarked against African graphite companies who are adopting a similar execution approach and appears in line on a capital intensity basis.

Micronised graphite

The DFS assumes that fine milling equipment, buildings and services and associated packaging systems are installed from the beginning of the second year of operations.

The additional capital cost for micronised graphite equipment, buildings and services is US$2.0M. Equipment and packaging equipment has been quoted by the equipment supplier whilst GR Engineering Services has provided the cost estimate for the building and services. An allowance has also been included for ensuring the micronisation production is ISO certified.

Expandable graphite

Due to leveraging off the processing agent's plant capacity, the expandable graphite strategy pursued by Graphex requires no capital cost.

Sustaining capital estimate

The requirement for capital expenditure over the life of the Project that is not covered in this estimate is captured in the sustaining capital cost estimate. These sustaining capital costs are summarised in the tables below and are estimated to an accuracy of ±15%.

Table 15: Sustaining capital estimate

Description	Life of mine (US$M)
Tailings storage facility lifts	18.0
Roads	1.1
Water evaporator system	1.7
Total sustaining capital	**20.7**

12. OPERATING COST ESTIMATE

Flake graphite

The Study estimates a life of mine operating cost of US$778/t for flake graphite concentrate. Mining costs are based on a contractor mining scenario, product logistics costs have been quoted from a reputable Tanzanian logistics contractor and GR Engineering Services have provided the operating costs for the process plant.

Table 16: Life of mine C1 operating costs FOB – flake graphite concentrate

Description	US$/t
Mining	326
General and administration	62
Process plant	274
Product logistics and port charges	94
Sales and marketing	21
Total operating costs	**778**

Sales and marketing costs have been estimated by Graphex and include sales agency fees, establishment and operation of a China sales office and product inventory warehousing.

As described in the Opportunities section, there is significant scope for an improvement in operating costs from additional exploration. There are numerous near-mine high-conductance targets which have the potential to contribute towards significant reductions in mining costs.

Expandable graphite

The operating costs of the Company's expandable graphite production are US$512 per tonne of expandable graphite excluding the internal transfer price of purchasing the graphite feedstock from the mine. This includes the following:

- Sea freight from Tanzania to China;
- Customs clearance, fees and charges and inland transportation to the processing agent's facility;
- All-inclusive processing and packaging costs to produce and package expandable graphite to Graphex customer's required specifications;
- Inland transportation from the processing agent's facility to port, customs clearance, fees and charges; and
- Sales and marketing agent fees.

Expandable graphite pricing in the DFS is FOB Port and therefore, sea freight from China to Europe or USA is not included.

The processing costs above are quoted on the basis of producing a +99% LOI expandable graphite product. The inland transportation costs have been quoted by the processing agent's shipping agent. The processing agent's margin is expected to be the additional expandable graphite produced in addition to the graphite concentrate supplied (ie. Given 1 tonne of graphite concentrate produces greater than 1 tonne of expandable graphite due to the additional mass of the intercalation / oxidation compounds, the processing agent will keep the excess above 1 tonne as a fee).

Micronised graphite

The operating costs for the Company's micronised graphite production are US$383 per tonne of micronised graphite excluding the internal transfer price of purchasing the graphite feedstock from the mine. This includes labour, power, parts, overheads and packaging of the micronised graphite, product logistics within Tanzania and sales and marketing agent fees. Micronised graphite pricing in the DFS is FOB Port and therefore, sea freight from Tanzania to Europe or USA is not included.

The operating costs of the fine milling equipment and associated packaging have been provided by the equipment supplier and are based on their experience with other micronised graphite manufacturers who use their equipment.

13. FINANCIAL ANALYSIS

Set out in Table 17 are the key financial results of the DFS.

Table 17. Key financial results

Physicals	Unit	Life of mine
Mine life	Years	18
Total plant feed	Mt	8.9
Annual plant feed	ktpa	500
Average head grade	TGC %	10.1%
Average graphite concentrate production[1]	ktpa	50
Steady state expandable graphite sales	ktpa	12
Steady state micronised graphite sales	ktpa	8
Project Financials	**Unit**	**Life of mine**
NPV_8 (Post-tax)	US$M	331
NPV_8 (Post-tax) – at Year 4	US$M	510
IRR (Post tax)	%	36%
Post-tax payback period	years	3.5
Pre-production capital cost (incl. 10% contingency and pre-strip)	US$M	87.4
Average annual EBITDA	US$M	74

Product Segment Financials	Unit	Concentrate	Expandable Graphite	Micronised Graphite	Consolidated Production[3]
Average sales price (FOB)	US$/t	1,534	5,690	2,802	2,500
C1 operating costs per tonne (FOB)[2]	US$/t	778	512	383	905
Operating margin	US$/t	756	5,178	2,419	1,595

1. Average graphite concentrate production includes graphite concentrate used as feedstock into both value-added products.
2. Operating costs of expandable graphite and micronised graphite excludes the internal transfer price (purchasing feedstock from Chilalo).
3. Consolidated Production shows the average sales price, operating costs and margin for the consolidated operation (ie. Inclusive of concentrate, expandable graphite and micronised graphite).

Sensitivity analysis

In addition to determining the expected financial outcomes, a series of sensitivities were performed for changes in the weighted average sales price, feed grade of processed ore, operating costs and development and sustaining capital costs. The results of the sensitivity analysis are displayed as a spider chart in Figures 17 and 18.

Figure 17. Sensitivity analysis – NPV

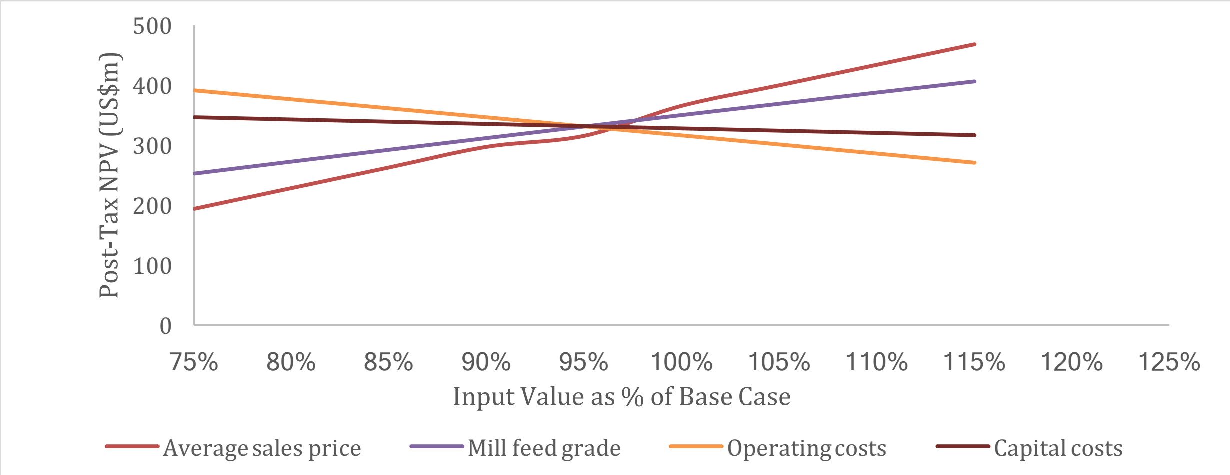
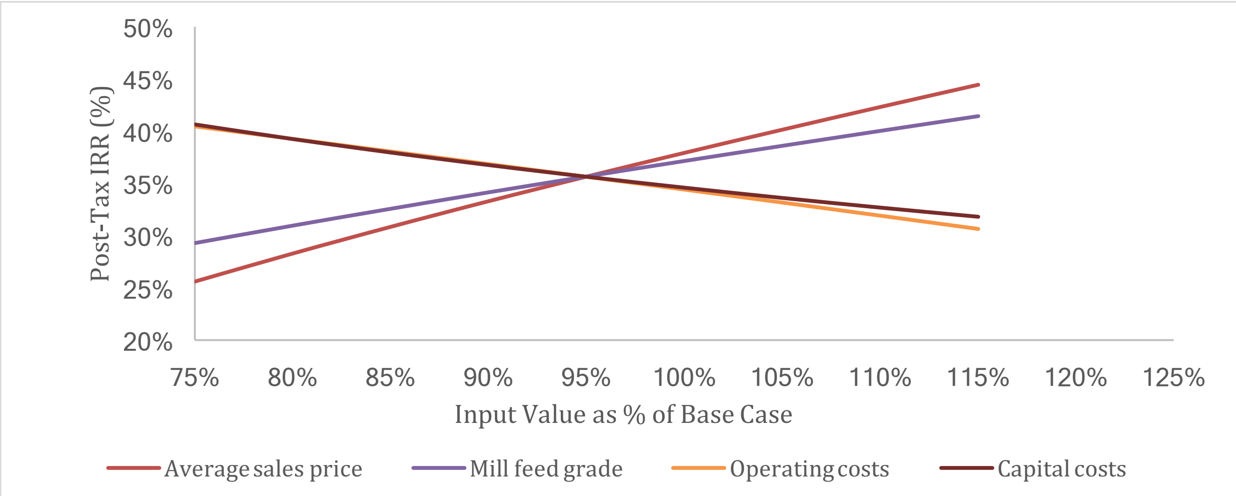


Figure 18. Sensitivity analysis – IRR



The potential for near-mine exploration to reduce operating costs has been identified as a high-conviction opportunity to improve the Project's economics. A US$100/t reduction in mining costs from the current level of US$326/t would increase the NPV from US$331M to US$367M.

Sensitivity analysis was also conducted on the post-tax NPV for a range of discount rates as shown below.

Table 18. Discount rate sensitivity analysis

Discount rate (%)	Post-tax NPV (US$M)
6	412
8	**331**
10	267
12	216

Taxes

Continued engagement with the Tanzanian Government has ensured that the Company has a sound understanding of the fiscal regime that applies to the Project. Financial modelling has assumed a royalty rate of 3%, a corporate income tax rate of 30%, an export clearance fee of 1% and a local government community development levy of 0.3%.

14. MINE CLOSURE

A separate conceptual Mine Closure Plan ('**MCP**') has been compiled by a specialist environmental consulting firm, which will guide rehabilitation and closure activities. This MCP has been developed to support the ESIA for the Project. Graphex proposes to revise the MCP at commencement of the Project and will update the MCP every four years during the life of the Project as closure planning progresses. Closure costs for the planned life of mine disturbance are shown in Table 19 below (note that these costs are high level and are based on a conceptual mine closure plan).

Table 19. Life of mine closure cost estimate

Domain	US$M
Open pit	0.1
Waste rock dump	0.5
Tailings storage facility	7.5
Processing and non-processing infrastructure	0.1
Roads and linear infrastructure	0.2
Demolition	2.6
Sub-total: Direct costs	**11.0**
Owners management costs	1.1
Post-closure management costs	0.3
Post-closure/long term support provision	0.7
Sub-total: Indirect costs	**2.1**
Total estimate	**13.1**

The closure cost estimate assumes that progressive rehabilitation will be undertaken throughout the life of the Project and that the remaining closure works will be completed at the end of mine life. The current mine plan incorporates a cost for progressive rehabilitation of the waste rock dump, 90% of which is expected to be completed during operations on an ongoing basis. The progressive rehabilitation is considered to be an operational requirement in order to mitigate any closure-related risks and to manage the water balance for the Project.

The Company recognises that the sale of plant and equipment at the cessation of mining and processing operations is often undertaken by mining companies as a means of providing funding for mine closure costs, however any such sale of plant and equipment has not been assumed in the financial analysis of the Project.

The exploration opportunity at Chilalo is significant, with only 10% of the strike length with high conductance anomalies similar to the Chilalo Main Deposit having been drilled. The Company has had considerable and consistent success in applying FLEM surveys as a targeting tool for the strongest conductors and is confident that further exploration at Chilalo will provide for extensions to mine life. There is also 11.2Mt of high-grade Indicated and Inferred Resources not included in the mine plan. As a result, the Company anticipates that those mine closure costs forecast to be incurred at the end of the current mine life may be deferred.

The MCP has been guided by the following:

- The International Finance Corporation (IFC) Environmental Health and Safety Guidelines for Mining;
- The International Council on Mining and Metals Toolkit;

- The Australian Government Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure (2016); and
- The Western Australia Department of Mines and Petroleum Guidelines for Preparing Mine Closure Plans.

15. FUNDING

In October 2018, the Company entered into financing agreements that included a term sheet setting out the proposed terms of the Senior Funding Package. For further information on financing arrangements, please refer to ASX announcement dated 29 October 2018.

Completion of a DFS is one of the more material conditions to availability of the Senior Funding Package. The Company is confident that the DFS has been prepared to a standard required by project financiers. In addition to completion of a DFS and customary conditions precedent, other more material conditions that need to be satisfied for the Senior Funding Package include:

- Certain Financier approvals and completion of due diligence to the satisfaction of the Financier;
- Resolution of issues relating to Tanzania's mining legislation;
- Entry into definitive transaction documents; and
- Execution of material contracts including off-take, mining and EPC amongst others.

Preparation of the DFS has been overseen by the Project Steering Committee. The Project Steering Committee, which is comprised of representatives of the Financier and Graphex, is responsible for assessing and reviewing overall progress of the Chilalo Project and providing the Graphex board of directors with recommendations on technical, environmental, permitting and stakeholder/social aspects of the Chilalo Project. As a result, the Financier has been able to review some sections of the DFS and address certain issues with the Company in parallel with completion of the DFS. Financier due diligence on the DFS and other outstanding conditions is ongoing.

The Company has made substantial progress with the Tanzanian Government in relation to seeking clarification of key issues in order to achieve the legal and regulatory certainty required by financiers. This progress has included confirmation that the Tanzanian Government's free carried interest is set at 16% for all Mining Licences, the publication by the Government of guidelines that permit the export of graphite concentrate from Chilalo, amendments to the local content regulations that are more accommodating with respect to meeting the requirements regarding local content, in principle agreement on a structure of bank account arrangements that is expected to be acceptable to the Government, the Bank of Tanzania and the Financier, confirmation that the Company may grant security over the Chilalo Mining Licence and greater clarity on the operation of the integrity pledge.

Graphex is now working with the Financier on procuring the finance necessary for development of the Project and the Financier is open to working with others in this regard.

16. PERMITTING AND APPROVALS

In assessing and managing environmental and social risks, IFC Performance Standards and the Equator Principles are recognised as the global standard for resources companies and have been adopted by financial institutions globally as a pre-requisite for project finance.

Graphex has completed a comprehensive suite of environmental and social studies, together with accompanying documentation that seeks to align with IFC Performance Standards and the Equator Principles. Finalisation of regulatory, risk management documentation has formed an important part of the DFS. In addition to such documentation, the Company has developed a comprehensive suite of management plans that are central to the DFS. These documents and plans are set out below.

Mining and exploration

The Company received its mining licence in February 2016. The Mining Licence has a term of 10 years and unless the holder of a mining licence is in default, has failed to produce commercial quantities of minerals, has not developed the mining area with due diligence or in compliance with applicable safety and environmental regulations, a mining licence is renewable for a further 10 years. In addition to the Chilalo Mining Licence, the Company holds title to five Prospecting Licences surrounding the Mining Licence, which cover an area of approximately 170.8 km^2.

In April 2019, Graphex submitted an updated Mine Development Plan to the Ministry of Minerals. The April 2019 Mine Development Plan is expected to be further updated following completion of the DFS and any commencement of Project development.

Environmental approvals

In March 2016, the Chilalo Graphite Project was issued with an Environmental Certificate by the National Environment Management Council of Tanzania. Issue of this certificate followed a review of the Environment and Social Impact Assessment (‘**2015 ESIA**’) for development of Chilalo that was submitted in October 2015. Receipt of the Environmental Certificate was an important approval as it was a pre-requisite for the granting of the Chilalo Mining Licence.

In completion of the DFS, the 2015 ESIA has been updated, together with supporting documentation, to address any gaps in the 2015 ESIA. Preparation of the 2019 ESIA involved carrying out a range of baseline studies, the findings of which were incorporated in the 2019 ESIA:

- Terrestrial fauna and fauna survey;
- Baseline aquatic ecology survey;
- Soils survey and classification;
- Establishment of dust monitoring locations and collection of dust fall-out data for a period of 6 months;
- Additional surface and groundwater quality sampling during May and July 2019 to represent the wet and dry season;
- Archaeological and cultural heritage survey;
- Modelling of dust fall-out and gaseous emissions over the life of the Project;
- Calculation of greenhouse gas emissions from the Project; and
- Modelling of noise and vibration at nearby communities as a result of the Project.

In addition, an overarching Environmental and Social Management System, which included development of a draft Environmental and Social Policy, was developed which will be implemented over the life-of-mine. In response to the environmental impacts that were identified as part of the 2019 ESIA, the following management plans were also developed:

- Environmental and Social Management Plan including the following sub-management plans.
  - Land and Soil Management Plan;
  - Terrestrial Biodiversity Management Plan;
  - Aquatic Biodiversity Management Plan;
  - Site Water Management Plan;
  - Acid and Metalliferous Drainage Management Pan;
  - Noise Management Plan;
  - Vibration Management Plan;
  - Hazardous Substances and Dangerous Goods Management;
  - Domestic and Hazardous Waste Management;
  - Social Impact Management Plan;
  - Community Development Strategy;
  - Stakeholder Engagement Plan;
  - Cultural Heritage Management Plan (CHMP) and Chance Find Procedure; and
  - Conceptual Mine Closure Plan.

The above management plans are likely to be updated prior to construction and developed in more detail, as required. A number of additional plans and procedures will also be developed prior to the commencement of construction, including, but not limited to:

- Blasting management plan;
- Resettlement implementation plan;
- Livelihood restoration plan;
- Community development plan;
- Vegetation clearance procedures;
- Soil stripping and stockpiling procedures;
- Progressive rehabilitation management plan; and
- Emergency response procedures.

Relocation and compensation

In 2016, the Company completed a Relocation Action Plan ('**2016 RAP**'). The 2016 RAP identified two relatively small hamlets – Rukowe and Ambye – as requiring resettlement prior to the commencement of development works at Chilalo. The 2016 RAP, which was agreed by local communities and signed off by the Government Valuer in August 2016, set out the policies, procedures and actions through which the impacts of Project development are addressed including management and compensation of resettlement. The 2016 RAP contained an approved compensation valuation of US$0.9 million.

Under the applicable legislation – the Valuation and Valuers Registration Act – where the approved compensation valuation has not been paid within two years of the date of issue, the valuation becomes invalid and a new compensation valuation is required. Graphex's position with respect to payment of compensation has been to only pay compensation when project finance for development of Chilalo has been confirmed. As a result, it commenced an updated RAP (‘**Updated RAP**’) in the December Quarter of 2018, which was approved by local communities and signed off by the Government Valuer in August 2019 with an approved compensation of US$1.5 million.

Stakeholder engagement

Stakeholder engagement and involvement formed an essential component of both the 2019 ESIA and the Updated RAP. It served as a platform for interested and affected parties to be informed of the proposed Project and provided stakeholders with the opportunity to present their views and raise issues and concerns that require further assessment during the ESIA process. Consultation was undertaken in with various stakeholders and groups as shown in Table 20.

Table 20. Stakeholder engagement

Stakeholders		Roles/Contribution
Central Government	Ministry of Minerals	Responsible for issuing a Mining License for the Project.
	Ministry of Water and Irrigation.	Enforce laws and regulations for water quality and utilisation, and responsible for issuing water licences in respect of the Project.
	National Environment Management Council (NEMC)	Enforcement of laws and regulations for environmental management and protection, as well as pollution control. Responsible for issuing of environmental certificate for the Project.
Local Government	Lindi Regional Council	In charge of regional community welfare, investment development, environmental management and security.
	Ruangwa District Council	Ensures sound environmental practices are under undertaken during Project development and undertakes environmental monitoring from time to time.
	Mbwemkuru Ward Council	Responsible for Ward administration, community development, social welfare, environment and land management.
	Nangurugai Village Council	Responsible for people’s welfare and village development. Responsible for ongoing liaison with the Project.
Project Affected Persons	Lukowe and Ambye Hamlets in Nangurugai Village	Community members located in the footprint of the Project area and may directly be economic or physical displacement.

17. PROJECT IMPLEMENTATION

In formulating the Project Implementation Plan and targeting the shortest possible construction period, priority was given to the utilisation of resources that are familiar with working in Tanzania without compromising safety, quality or schedule. The implementation plan also focuses on the work required to enable construction personnel and contractors the full access they require to do their work.

The design and implementation of the Project will comply with applicable laws and regulations. Where Tanzanian laws and regulations do not cover a specific situation, equivalent industry standards will be applied.

Contracting strategy

An Engineering and Procurement ('**EP**') contract is proposed for the engineering design and procurement component, with Graphex placing equipment and contract orders based on the EP recommendations and an owner managed site construction. The EP style contract allows Graphex greater input into the design and selection of the process equipment. Further details of the proposed approach are as follows:

- The EP contract is a separate contract that is either fixed price or an incentivised time and materials contract.
- All equipment orders are placed by Graphex, but the EP contractor does the design, tender and recommendation for award.
- All site contracts are placed and managed by Graphex project personnel, with design, tender and award recommendations developed by the EP contractor.

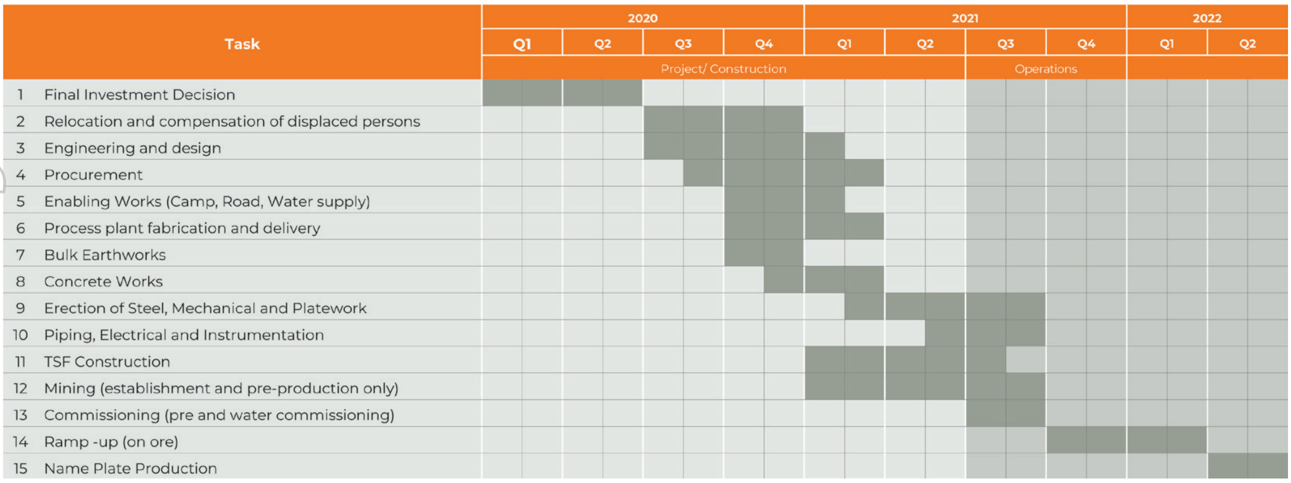
A summary of the contracting strategy for other key contracts include:

- The power requirement will be met by utilising a specialist power provider who will provide the applicable power generating equipment and associated diesel storage facilities to provide power on a Build Own Operate and Maintain (BOOM) arrangement.
- Bulk earthworks will be done on a unit pricing contract.
- The pre-fabricated administration buildings will be procured directly via a stand-alone supply contract and constructed on site using local labour supervised by the building supplier.
- The accommodation village will be supplied under a build own and operate arrangement.
- Site access road upgrade will be a unit pricing contract with the tender seeking bidders to identify savings if they are also awarded the bulk earthworks contract.
- Tailings storage facility will be done on a unit pricing contract with an external laboratory engaged for quality assurance and ongoing inspections.

Schedule / timetable

Should the Company reach a decision to mine in Q2 2020, commissioning is expected to begin in Q3 2021, as shown in the development schedule in Table 22.

Table 22: Project development schedule



18. REFERENCE TO PREVIOUS ASX ANNOUNCEMENTS

In relation to the Mineral Resource estimate previously reported on 28 August 2019, Graphex confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 28 August 2019 and that all material assumptions and technical parameters underpinning the Mineral Resource estimate in the announcement of 28 August 2019 continue to apply and have not materially changed.

The information in this announcement that relates to exploration results was announced on 2 September 2015 (under Indiana Resources Limited). Graphex confirms that it is not aware of any new information or data that materially affects the information included in the announcement of 2 September 2015.

APPENDIX A: EXPLANATION OF GRAPHITE SPECIFICATIONS

Graphite Purity Determination / Calculation

Loss on Ignition (LOI)

LOI is the industry standard for defining purity for graphite powders, shapes, and composites.

LOI is determined by introducing 50 – 100 grams of graphite powder into a ceramic crucible; heating to 1,000°C for 24 hours and measuring the weight loss to calculate LOI purity. For example, if 5 grams of ash remains of 100 grams powder after 24 hours, then the graphite purity translates to 95% LOI as all carbon must be consumed to determine ash / purity.

The vast majority of applications formulate to LOI as the purity standard, from standard mesh flake graphite for refractories to high purity micronised graphite for electrochemistry or medical device applications.

Fixed Carbon (FC)

Translated into simple terms, as it pertains to graphite, FC = LOI – Moisture.

Fixed carbon is calculated differently for other carbon types such as coal or carbon black, but in the case of graphite powders, the aforementioned definition applies.

Total Graphitic Carbon (TGC)

TGC is used in determining the graphitic carbon content of an ore body taking into account both organic and inorganic elements to determine carbon purity. In the case of graphite powders, TGC is incorrectly used as the industry standard instead of LOI.

TGC = LOI – (Volatiles + Moisture)

Depending on the ore body, volatiles can be relatively high or low which is a critical factor in determining the TGC content of the ore body.

For graphite powders, a very limited number of applications require TGC values which include high performance refractories, agriculture, and crucibles for precious metals to name of few.

Mesh Size

Below is a multi-dimensional international sieve chart showing various sieve measurements.

INTERNATIONAL ISO 565 (TBL 2): 1983	AMERICAN ASTM E 11-87	TYLER STANDARD SCREEN 1910	BRITISH BS 410: 1986		FRENCH AFNOR NFX11-501: 1970		GERMAN DIN 4188: 1977	
Nominal Openings Millimeters / Microns	Alt. U.S. Standard INCH / SIEVE	Equivalent INCH / MESH	Aperture mm / µm	Equivalent BS / MESH	Opening mm / µm	Equivalent TAMIS No.	Aperture mm	Approx. DIN No.
26.50 mm	1.06 inch	1.05 inch	26.50 mm		25.00 mm		25.00	
25.00	1	-	-		22.40		22.40	
22.40	7/8	.883	22.40		20.00		20.00	
19.00	3/4	.742	19.00		18.00		18.00	
16.00	5/8	.624	16.00		16.00		16.00	
13.20	.530	.525	13.20		14.00		14.00	
12.50	1/2	-	-		12.50		12.50	
11.20	7/16	.441	11.20		11.20		11.20	
9.50	3/8	.371	9.50		10.00		10.00	
-	-	-	-		9.00		9.00	
8.00	5/16	2 1/2 mesh	8.00		8.00		8.00	
6.70	.265	3	6.70		7.10		7.10	
6.30	1/4	-	-		6.30		6.30	
5.60	3 1/2 sieve	3 1/2	5.60	3	5.60		5.60	
4.75	4	4	4.75	3 1/2	5.00	38	5.00	
-	-	-	-	-	4.50	-	4.50	
4.00	5	5	4.00	4	4.00	37	4.00	2 E
3.35	6	6	3.35	5	3.55	-	3.55	-
-	-	-	-	-	3.15	36	3.15	-
2.80	7	7	2.80	6	2.80	-	2.80	-
2.36	8	8	2.36	7	2.50	35	2.50	-
-	-	-	-	-	2.24	-	2.24	-
2.00	10	9	2.00	8	2.00	34	2.00	3 E
1.70	12	10	1.70	10	1.80	-	1.80	-
-	-	-	-	-	1.60	33	1.60	-
-	-	-	-	-	-	-	1.50	4
1.40	14	12	1.40	12	1.40	-	1.40	-
1.18	16	14	1.18	14	1.25	32	1.25	-
-	-	-	-	-	-	-	1.20	5
-	-	-	-	-	1.12	-	1.12	-
1.00	18	16	1.00	16	1.00	31	1.00	6
850 µm	20	20	850 µm	18	900 µm	-	0.900	-
-	-	-	-	-	800	30	0.800	-
-	-	-	-	-	-	-	0.750	8
710	25	24	710	22	710	-	0.710	-
-	-	-	-	-	630	29	0.630	-
600	30	28	600	25	-	-	0.600	10
-	-	-	-	-	560	-	0.560	-
500	35	32	500	30	500	28	0.500	12
-	-	-	-	-	450	-	0.450	-
425	40	35	425	36	-	-	0.430	14
-	-	-	-	-	400	27	0.400	16
355	45	42	355	44	355	-	0.355	-
-	-	-	-	-	-	-	0.340	18 E
-	-	-	-	-	315	26	0.315	-
300	50	48	300	52	-	-	0.300	20
-	-	-	-	-	280	-	0.280	-
250	60	60	250	60	250	25	0.250	24
212	70	65	212	72	224	-	0.224	-
-	-	-	-	-	200	24	0.200	30
180	80	80	180	85	180	-	0.180	-
-	-	-	-	-	-	-	0.170	35 E
-	-	-	-	-	160	23	0.160	-
150	100	100	150	100	-	-	0.150	40
-	-	-	-	-	140	-	0.140	-
125	120	115	125	120	125	22	0.125	-
-	-	-	-	-	-	-	0.120	50
106	140	150	106	150	112	-	0.112	-
-	-	-	-	-	100	21	0.100	60
90	170	170	90	170	90	-	0.090	70
-	-	-	-	-	80	20	0.080	-
75	200	200	75	200	-	-	0.075	80
-	-	-	-	-	71	-	0.071	-
-	-	-	-	-	-	-	0.067	90 E
63	230	250	63	240	63	19	0.063	-
-	-	-	-	-	-	-	0.060	100
53	270	270	53	300	56	-	0.056	110
-	-	-	-	-	50	18	0.050	120
45	325	325	45	350	45	-	0.045	-
38	400	400	38	400	40	17	0.040	-
-	-	-	-	-	36	-	0.036	130
32	450	-	32	440	32	-	0.032	-
25	500	-	-	-	25	-	0.025	200
20	635	-	-	-	20	-	0.020	-

APPENDIX B. INFORMATION REQUIRED UNDER ASX LISTING RULE 5.9.1

1.1 Material assumptions and outcomes from the DFS and optimisation study, including economic assumptions

Appropriate studies for the development of the Chilalo Graphite Project have been undertaken by Graphex Mining Limited, CSA Global and a number of suitably qualified independent consultants, experts and contracting firms. Previous studies have been to at least at a PFS level standard. The DFS completed by Graphex Mining Limited is for a processing facility of 500ktpa ROM throughput, producing a coarse flake graphite product. This production scenario forms the basis of this Ore Reserve estimate.

Graphex has a distinct signature in the Chilalo resource, possessing specific metallurgical and chemical attributes ideally suited for foils, fire-retardants, engineered products, lubricants, and thermal drilling fluids. As Flake graphite is not an exchange-traded commodity the Prices are negotiated directly between buyer and seller. Independent information regarding graphite pricing and market supply/demand is therefore difficult to come by as it's treated as the intellectual property of suppliers and customers. Flake graphite is not a commoditised or homogeneous product. It comes in many different sets of specifications, each with unique characteristics. As a result, there are wide-ranging uses of the different mesh sizes and purity levels of flake graphite. The physical and chemical properties of each flake graphite 'signature' are unique from one mine to another. Potential customers will therefore require graphite suppliers to qualify their products directly with customers. This process begins with customer test work on laboratory samples. These attributes are expected to produce a high-value product suitable for high-tech and higher priced applications. The market studies done by Graphex have utilized price estimates for Chilalo product from several independent sources including Benchmark Mineral Intelligence, Roskill and Industrial Minerals. Pit optimisations have been carried out using a fixed graphite price and set of parameters agreed between Graphex and CSA Global. Selling costs include government royalties, other royalties and transporting costs.

The geotechnical parameters for the Project have been based on the Chilalo Geotechnical Report supplied by Open House Management Solutions (OHMS) geotechnical consultants. The report represents the geotechnical and stability assessment of pit slopes for the Chilalo Graphite Project. The specified parameters have been used in both the optimisation and design of the Chilalo open pit.

1.2 Criteria used for classification, including classification of Mineral Resources on which Ore Reserves are based and confidence in modifying factors

Classification of the Mineral Resource estimates was carried out considering the level of geological understanding of the deposit, quality of samples, density data, and drill hole spacing. The Mineral Resource estimate has been classified in accordance with the JORC (2012) Code using a qualitative approach.

The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, metallurgical testing result data and supported by geophysical electro-magnetic modelling data, which are sufficient to assume geological, mineralisation and quality continuity.

The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, metallurgical testing result data and supported by geophysical electro-magnetic modelling data, which are sufficient to imply but not verify geological, mineralisation and quality continuity.

Petrographic and metallurgical data supports the classification of the Chilalo deposit as an Industrial Mineral Resource.

The Ore Reserves have been classified according to the classification of the Mineral Resource and the status of the Modifying Factors. The status of the Modifying Factors is generally considered sufficient to support the classification of Probable Reserves. As there is no Measured material in the Resource Model, Indicated Resource is considered for the Ore Reserve. None of the Inferred Resource is included in the Ore Reserve calculation, all the inferred Resource is reported as waste. Analysis on the main economic assumptions within the cash flow model indicate that the Project produces a positive discounted cash flow (DCF) in terms of all operating costs, the current graphite price estimate and selected modifying factors.

1.3 Mining method selected and other mining assumptions, including mine recovery factors and mining dilution factors

The Chilalo open pit mine is planned as a conventional truck and shovel operation, using 40-50t articulated trucks and matching excavators. Operations include drill and blast activities for the majority of the open pit mining. Contractor mining has been assumed for the life of mine. The equipment selection is appropriate for the proposed scale and selectivity of this operation. The selected mining approach is typical for a small to medium scale open pit mining operation.

The geotechnical parameters utilised in the pit design are as per the OHMS recommendations.

Pit ramps have been designed with the following characteristics;

- The dual lane ramps are 15m wide to allow for safe passage of the selected trucks with an allowance for a bund wall on the open side of the ramp and a drain on the inner side.
- The single lane ramps are 10m wide can be used for mining last benches and good bye cuts.
- Gradient of 1:10 is practicable with the proposed mining fleet.
- Ramps exit the pit crest in the direction of both the ROM and waste rock dumps.

Minimum mining width of 30m is maintained for the cutback designs, however minimum 20m of mining width is maintained on normal benches. The waste dump will be progressively rehabilitated to reduce the amount of PAF (Potentially Acid Forming) waste rock exposed throughout the operation.

A fixed value of 10% was used for mining dilution in pit optimisations, production scheduling and cash flow model. A grade of 0% TGC was assumed for dilution material. Dilution for tonnes and grade was also calculated through a dilution skin method and concluded the selected dilution is reasonable.

A fixed value of 95% was used for mining recovery in both optimisations and production scheduling.

1.4 Processing method selected and other processing assumptions, including recovery factors applied and allowance made for deleterious elements

The Chilalo deposit has been subject to various metallurgical test work programs since the initial drill programs were carried out in the last quarter of 2014 to generate samples for metallurgical test work. From the initial drill programs, sampling and compositing was undertaken to generate representative samples to assess the ore's amenability to beneficiation by froth flotation and to identify the nature, flake size and occurrence of the graphite in a selection of drill core samples and flotation products. This testwork program was completed by SGS (Perth) and managed by BatteryLimits with the results supporting the process design and engineering for the 2015 PFS.

Further programs of work were initiated in 2016 and 2017 on samples generated since the PFS was completed, aimed at producing bulk concentrate samples for marketing and additional preliminary testing of oxide ore. In addition, during 2016 a testwork program was undertaken by Suzhou with a focus to produce coarse flake graphite with grades greater than 85% TGC.

In addition, during 2018 a further series of tests were undertaken to optimise coarse flake size recovery. In 2018/2019 a new drill program was undertaken to complete a DFS level testwork program and included additional variability sample from new areas of the expanded resource and a further 40t bulk sample was taken from a series of trenches within the main central zone of the ore body. The key focus of the DFS program included;

- Compilation of global ore body representative samples.
- Testwork program to enable robust flow sheet optimisation in terms of maximise flake size preservation and recovery.
- Production of process engineering input data.
- Variability sample testwork from new areas of the expanded resource.
- Demonstrate robust flowsheet from a bulk sample operation run.
- Generate sufficient product and tailings for additional vendor or downstream testwork and market samples.

A representative testwork program demonstrates that the ore of the Chilalo Graphite Project is favourable to the production of a high-grade graphite product. Results from the metallurgical programs of the Chilalo Graphite Product highlighted the ability to produce grades in excess of 95% TGC.

Metallurgical processing recoveries as based on the test work conducted on samples taken from North, Central and West pit areas. Recoveries used for the optimisation, schedule and cash flow model are shown in *Table 1*.

Table 1: Metallurgical Recovery

Item	Unit	Value
Metallurgical Recovery North Pit Oxide	%	90.3
Metallurgical Recovery North Pit Fresh	%	96.1
Metallurgical Recovery Central Pit Oxide	%	91.8
Metallurgical Recovery Central Pit Fresh	%	97.5
Metallurgical Recovery West Pit Oxide	%	94.5
Metallurgical Recovery West Pit Fresh	%	96.1

Graphex will offer two base range carbon purities with the ability for additional processing to meet customer-specific and market mesh size specifications in the future. It is not commercially feasible or economic to have a wide range of carbon purities. Graphex will also seek to produce and qualify a high-purity (>99% LOI) product once commercial production of the base range products has been achieved.

Graphex engaged GR Engineering to complete the DFS study on the processing facility. The DFS estimate includes all the necessary costs associated with process engineering, design engineering and drafting, procurement, construction and construction management, commissioning of the process facility and associated infrastructure, mining establishment, first fills of plant reagents and consumables, spare parts and working capital required to design, procure, construct and commission all of the facilities required to establish the Project. The estimate is based upon preliminary engineering, quantity take-offs, budget price quotations for major equipment and bulk commodities. Unit rates for installation were based on market enquiries specific to the Project and benchmarked to those achieved recently on similar projects undertaken in the African minerals processing industry. The estimate is quoted in United States Dollars (US$) to a level of accuracy of +/-15% based on the available data. The company considered a single stage 500 ktpa processing schedule. The LoM schedule and cost model has been completed on 500 ktpa processing schedule and demonstrated the financial viability of the Chilalo Graphite Project.

The proposed processing plant will include a two stage crushing circuit that will deliver product to a storage bin. Ore will be reclaimed from the storage bin and delivered to a two stage milling circuit. The primary rod mill will operate in closed circuit with a screen. The undersize from the mill product screen will report to a rougher flotation cell for recovery of coarse fast floating graphite. The rougher tail will report to the secondary ball mill operating in closed circuit with cyclones. The undersize from the ball mill cyclones will report to the scavenger cells. The rougher and scavenger concentrate will undergo various stages of cleaning regrinding and screening. Coarse and fine graphite concentrate will be filtered and dried separately. Dry graphite concentrate will be screened into various product sizes and bagged for shipping. Flotation tailings will report to the tailings hopper thickener and then be pumped to the tailing storage facility (TSF). Design throughput rates for the processing plant have been set at 500ktpatpa of open pit ore with production of approximately 50ktpa of graphite. An effective utilisation of 91% has been used for design purposes. Inclusion of an intermediate crushed ore bin and installed standby equipment will enable this utilisation to be achieved.

1.5 Basic cut-off grade applied

The revenue generated from a graphite operation is primarily driven by the flake size distribution of the graphite product. The flake proportion over a series of size categories determines the average sales price of the graphite product. The carbon grade (TGC) is not directly related to the flake size.

The Mineral Resource is reported for blocks above a lower cut-off grade of 2% TGC. Ore reserve hasn't used a particular cut-off grade for Indicated Resource. The cut-off between ore and waste has been determined by net value per block. A total block revenue is estimated for each block within the block model, accounting for total graphite recovered to a payable product as well as the graphite product price. Total block costs are estimated for all operating costs to the point of sale including processing, product haulage, crusher feed, general and administration, ore differential, sustaining capital, selling costs, and grade control costs. The total block revenue minus the total block costs estimate the net value per block. Any block returning a positive net value has been defined as "ore" for the purposes of pit design and production scheduling. The blocks with potential for inclusion into Ore Reserves first had to achieve a block grade greater than or equal to the marginal cut-off grade of each block as well as a resource category status of Measured or Indicated. If this material was within the approved pit design, this was defined as being "processable" and thus was permitted for inclusion within the Ore Reserves.

Project economics from the total Project have been considered at the end of the full Project iteration to confirm that the cut-off criteria support economic operations for the Chilalo Graphite Project.

1.6 Estimation methodology

Whittle™ software has been used to generate a series of economic Pit shells for this deposit using the Mineral Resource block model and input parameters as agreed by GPX and CSA Global.

Inferred Mineral Resource is not considered in the pit optimisation. Positive net value method is applied to identify the ore. A mining and production schedule was completed with Inferred Mineral Resource treated as waste and concluded that conversion of Inferred Mineral Resource to processed product is not required for the overall financial viability of the Chilalo Graphite Project.

Using the selected parameters, a set of nested pit shells were produced by the Whittle optimisation software. The pit shells were used to determine trends in mineralisation and/or higher-grade areas which offer a best-case scenario for grade and DCF.

Figure 1 demonstrate the tonnages mined, the Ideal DCF, undiscounted cash flow, strip ratios, and cash costs for the various optimisation pit shells.

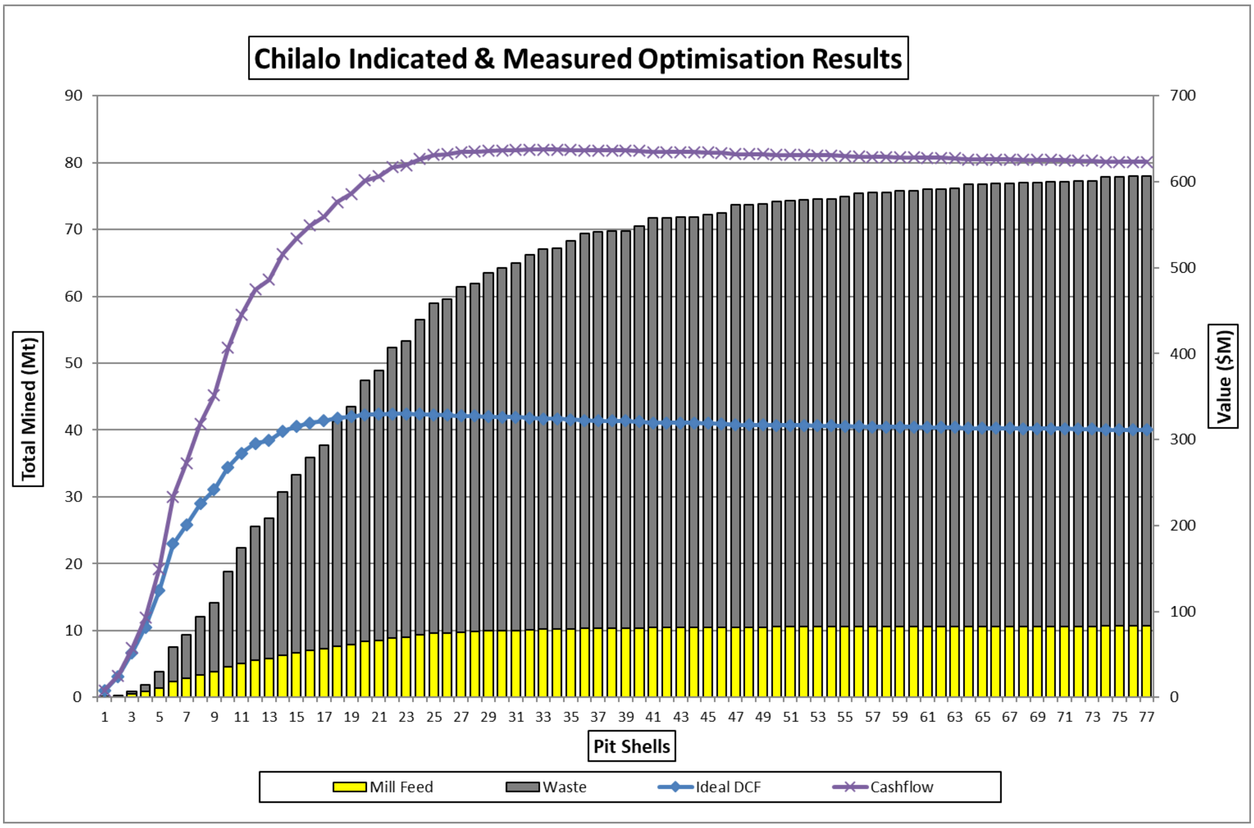


Figure 1: Chilalo Optimisation

Pit shells 23 with a Revenue Factor (RF) of 0.80 was chosen as the ideal pit shell. This shell maximises the recovery of the currently defined Indicated Resource while applying the selected optimisation parameters. *Table 2* summarises the optimisation output.

Table 2: Optimisation Output

Item	Unit	Outputs
Shell	No.	23
Revenue Factor		0.80
Total Mined	Mt	53.3
Waste Mined	Mt	44.3
Strip Ratio	t:t	4.92
Total ROM Feed	Mt	9.0
Indicated Resource in the ROM Feed	Mt	9.0
Percentage of Indicated Resource in the Feed	%	100.0%
Inferred Resource in the ROM Feed	Mt	0
Percentage of Inferred Resource in the Feed	%	0.0%
ROM Feed Grade	%	9.9%
Average Plant Recovery	%	96.4%
Total Graphite Produced	Mt	0.86
Total Graphite Concentrate	Mt	0.91
Operating Costs	US$M	738

Item	Unit	Outputs
Revenue	US$M	1,358
Cash Flow	US$M	619
Worst DCF	US$M	307
Best DCF	US$M	364
Ideal DCF	US$M	330

1.7 Pit Design, Mining Schedule, Cost Model and Sensitivity Checks

Pit Design

Detailed pit designs were completed on updated mining models which form part of the Ore Reserve estimation. The pit design had to achieve a positive cash flow result in order to move into Ore Reserve status. The pit designs were completed with collaboration between GPX and CSA Global staff.

A realistic pit design has been prepared based on the results of the optimisations and incorporating appropriate wall angles, geotechnical berms, minimum mining widths, and access ramps appropriate for the equipment selected. A net value attribute was created in the block model (val_mcog) to calculate the block value (revenue-selling cost-processing cost). Any block with val_mcog positive is considered as ore. Throughout the design process, the pit was checked with block model and selected Whittle shells.

Material within the pit designs has been estimated by intersecting the pit design with the topographical surface within the mining block models. A detailed topographic surface digital terrain model (DTM) generated by modelling a combination of surveyed drill collars, surveyed spot heights and an aerial drone survey was provided to CSA Global. The mining dilution and ore loss factors were applied against the in-situ numbers resulting from this process.

North and West pits were designed with a starter pit and cut back into the final pit. Central pit has a starter pit and 3 cutbacks into the final pit. Figure 2 shows Final Pit and Stage designs. Figure 3 shows Final Pit, Waste Dump and ROM Pad locations.

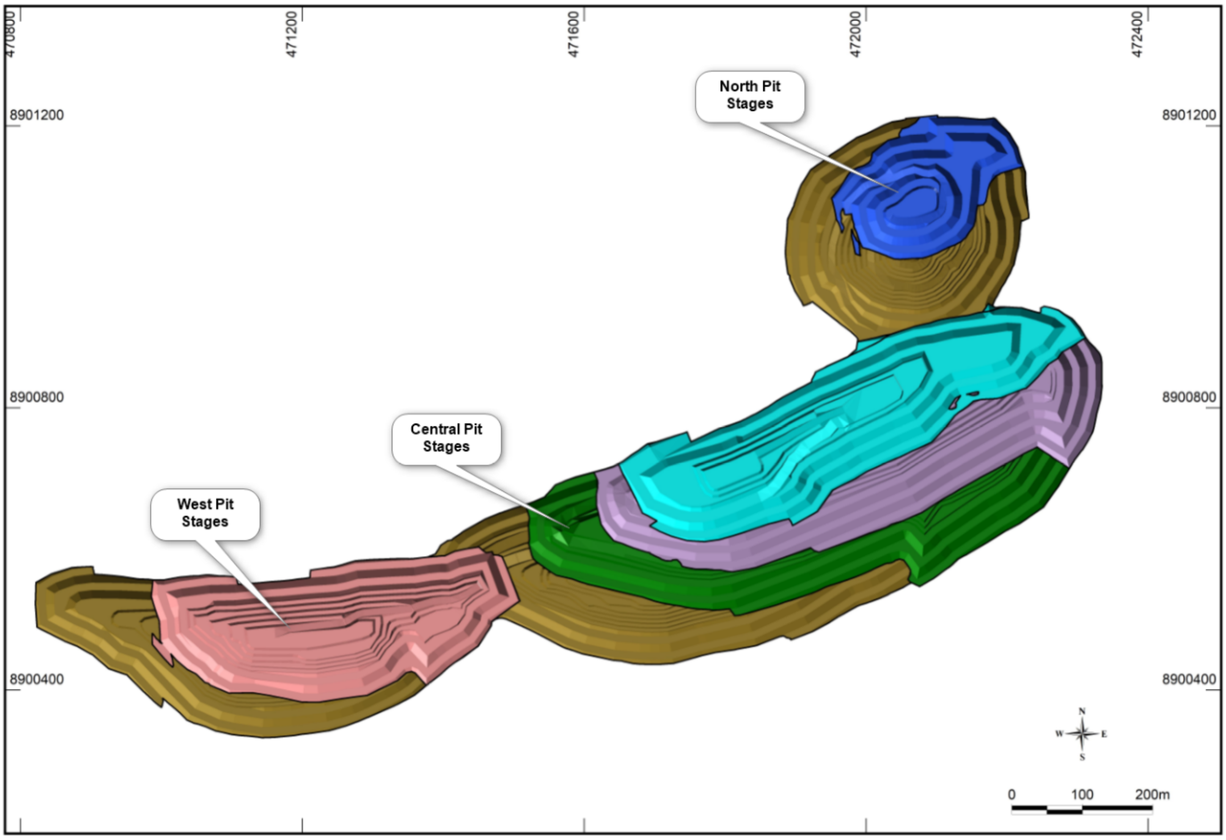


Figure 2: Chilalo Pit Design

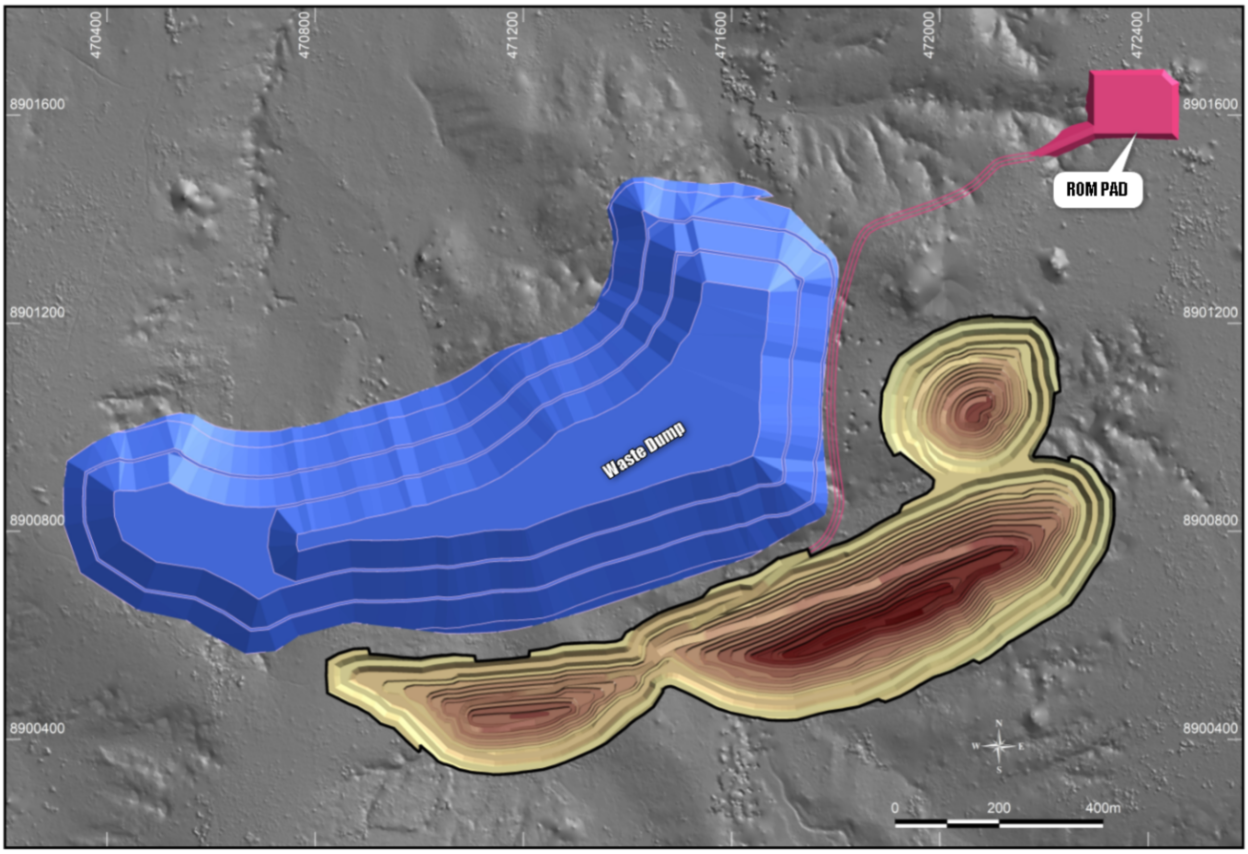


Figure 3: Final Pit, Waste Dump and ROM Pad Designs

The pit design volumes came close to the selected Whittle shell. *Table 3* shows the comparison of Whittle shell with the pit design.

Table 3: Pit Design and Whittle Comparison

	Total mined	Waste	Total ROM feed	ROM Feed	Average Grade
	(t)	(t)	(t)	(t)	%
Final Pit Design	53,515,488	44,593,060	8,922,428	8,922,428	9.92%
RF 0.80 Optimisation	53,302,689	44,297,944	9,004,745	9,004,745	9.90%
Variance	0.40%	0.67%	-0.91%	-0.91%	0.21%

LoM Schedule

MineSched™ software was used to produce the following schedule on a monthly basis. Mining rates were applied to suit Graphex's proposed processing schedule of 500 ktpa ROM Feed. The schedule was completed with Inferred Mineral Resource treated as waste. Inferred material is approximately 21.3%(11.4Mt) of total movement, in this, 1.1Mt at 7.21% TGC and 10.3Mt at 3.44% TGC.

Processing recovery has been coded in the block model according to the mining location and oxidation.

Mining recovery of 95% and mining dilution of 10% is applied in the schedule.

Any Indicated Resource returning a positive net block value within the pit design deemed as processable. The ROM Feed is divided in to four grade bins to achieve consistent Feed grade and maximise the cash flow. Figure 4 shows the ROM Feed within the Pit. Central Pit has been prioritised due to better grade and lower strip ratio.

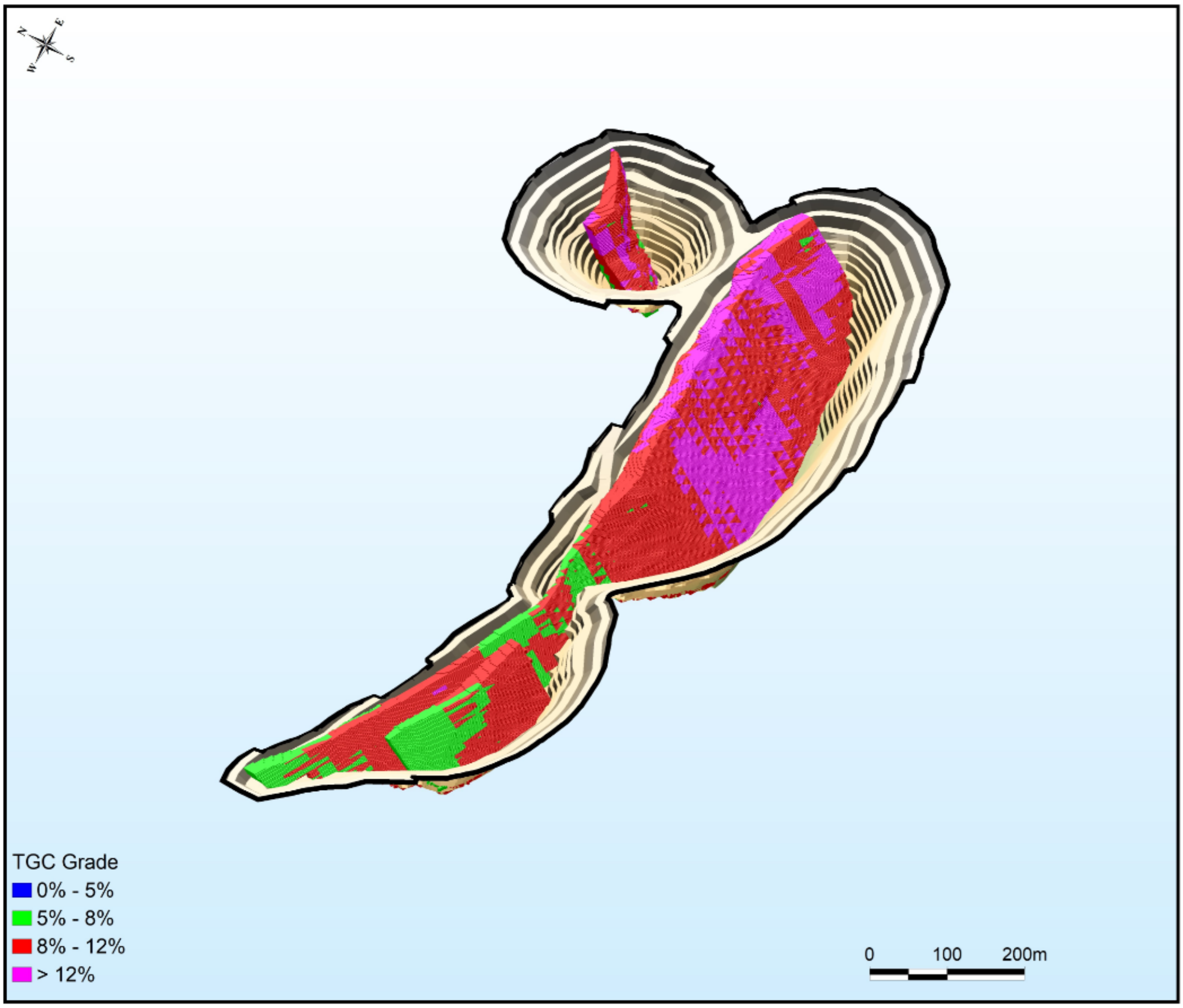


Figure 4: ROM Feed by Grade

To maximise the cash flow West and North Pit is mined with two stages and Central pit with four stages. *Figure 5* shows the individual pit movements in tonnes. Mining commences in Central Pit. Mining in the Central Pit is prioritised as it has better grade. Total material movement by different material classes are shown in *Figure 6*. It can be seen that some Inferred Resource is available in the pit. All the Inferred Resource is considered as waste in the reserve schedule and financial model.

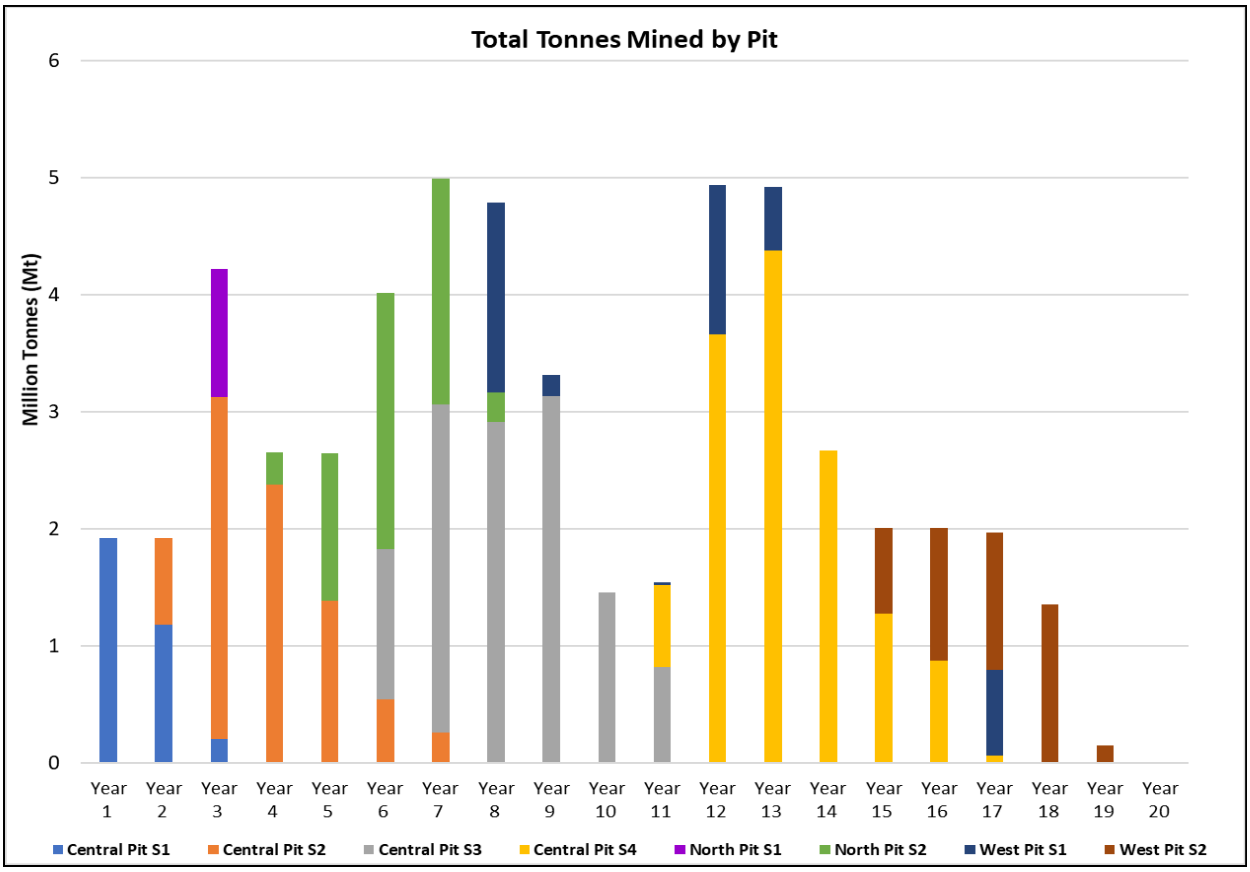


Figure 5: Total Tonnes Mined by Pit

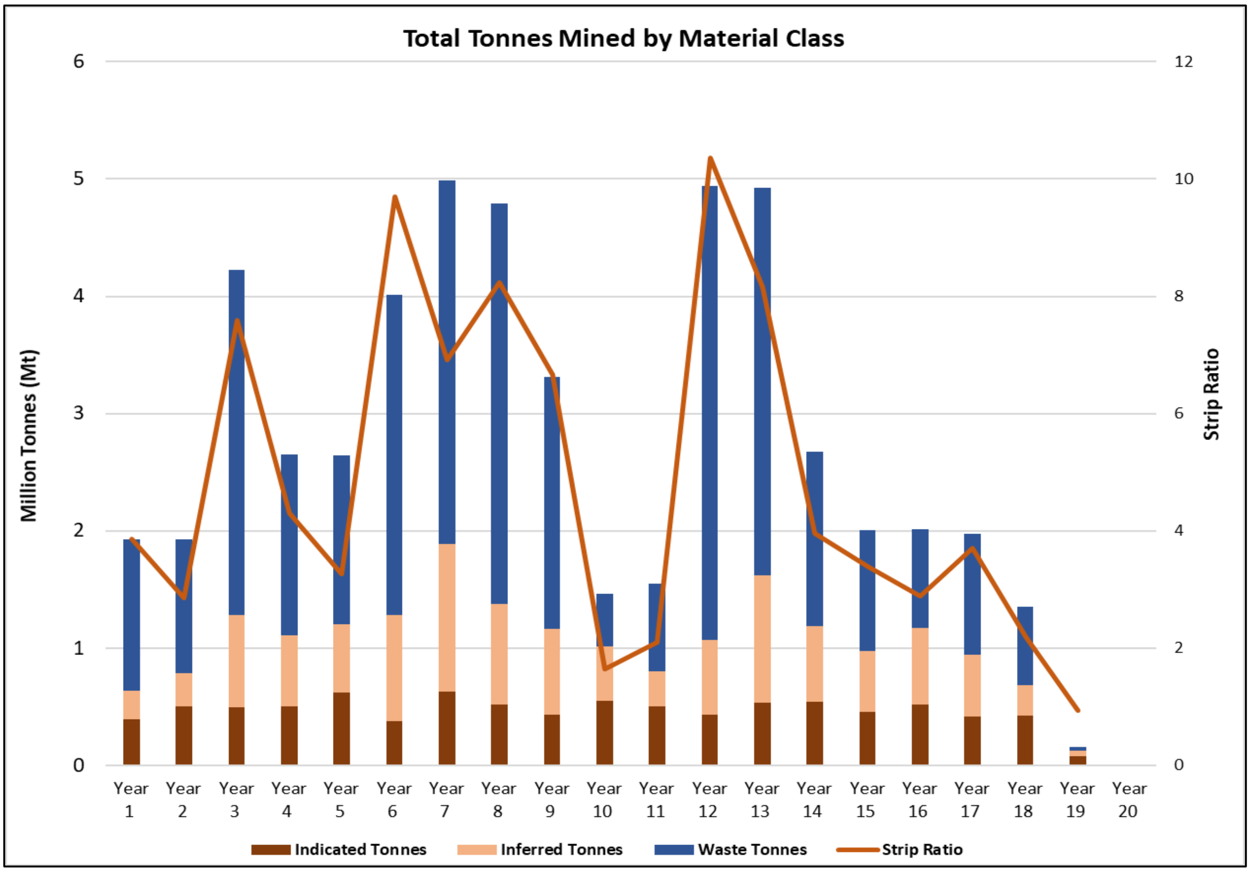


Figure 6: Total Tonnes Mined by Material Class

Total ore tonnes mined by grade is shown in Figure 7 and Figure 8 shows the processing schedule.

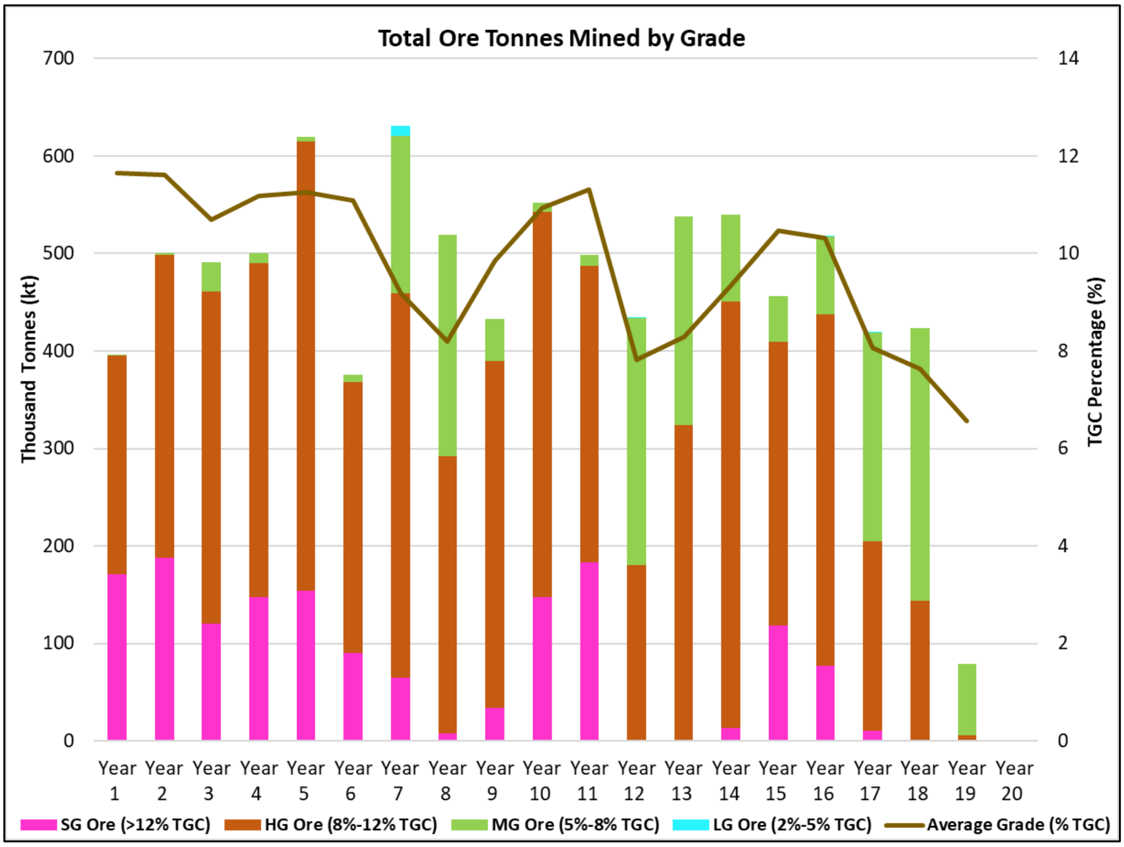


Figure 7: Total Ore Tonnes Mined by Grade

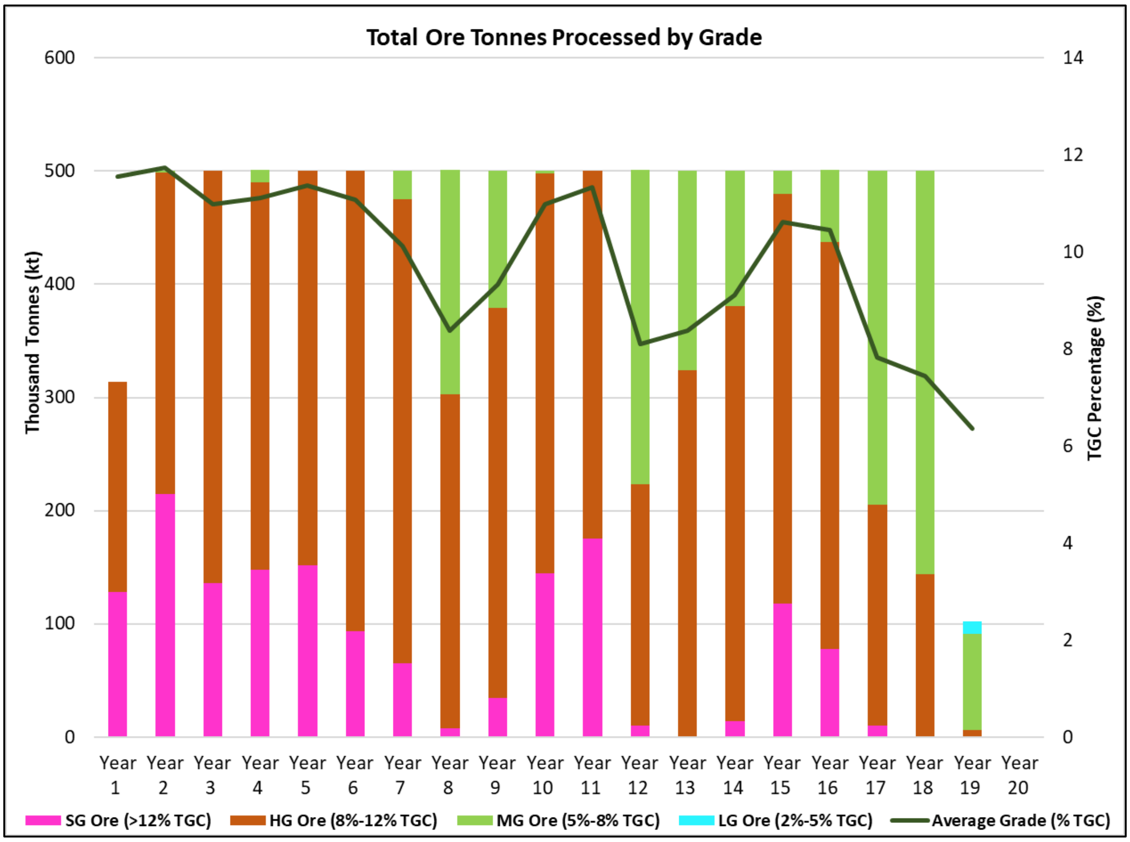


Figure 8: Total Ore Tonnes Processed by Grade

Financial Model and Sensitivity Checks

Capital and operating costs estimated to a minimum PFS level of confidence have been applied to the planned activities. The revenue assumptions are based on a market report in conjunction with Graphex. The cash flow model has been generated solely for ore reserve studies.

The cost inputs and the modifying factors used for the optimisation are also used in the cash flow model. The NPV was calculated using a 10% discount rate applied at the beginning of each year from the commencement of processing operations. Potential equipment leasing or alternative funding arrangements could significantly impact the reported NPV, these will be addressed by GPX during a later operational optimisation process.

Sensitivity analysis was done for the metal price, metallurgical recovery, operating cost, capital cost and discount rate. The project NPV remains positive for the tested sensitivity *between* +20% and -20%. The sensitivity analysis completed indicates that the project results are most sensitive to commodity price and then to the metallurgical recovery. The project Net Present Value (NPV) remains positive for a price variance down by -29% and metallurgical recovery variance down by -33%. The project has a positive NPV until the operating costs are increased by +68%. The NPV remains positive for the tested discount rate variance between 0% pa and 20% pa.

1.8 Material modifying factors, including status of environmental approvals, mining tenements and approvals, other government factors and infrastructure requirements for selected mining method and transport to market

Material modifying factors including land access, infrastructure requirements, and logistics have been addressed in the Chilalo Graphite Project DFS to an adequate level of confidence for a Probable Ore Reserve. The environmental approval process for the Chilalo Graphite Project has been completed along with the environmental certificate, signed by the Minister responsible for the Environment, issued on 2nd November 2016. Following the issue of the environmental certificate, the mining license application was submitted and obtained in February 2017. As part of the preparation of the DFS, Graphex has submitted an updated ESIA to the Tanzanian Government in December 2019.

Infrastructure requirements are detailed in the DFS and consist of process plant and associated equipment such as the power station and office facilities; tailings storage facility; mine and waste dumps; water supply bore field and pipe routes; access roads within the plant and the Project site; camp facilities complete with dedicated services. Access to the Project is via both sealed and unsealed road from the Mtwara Port. Engagement with local communities is proposed to be part of the process in road design and road management practices for Project staff and contractors. Two options for export of the graphite product have been assessed. Alistair Logistics, a local Tanzanian logistics group, has provided detailed options for delivery of product to either Dar es Salam Port or Mtwara Port. The DFS has assumed that the majority of the graphite product will be exported via the Port of Mtwara.

Mine Waste Management Pty Ltd (MWM) has conducted the study for the management of acid and metalliferous drainage (AMD) generating waste rock within the proposed waste rock dump (WRD) at the Chilalo Graphite Project (the Project) for Graphex Mining Limited (Graphex). MWM provided an AMD management design philosophy for the Chilalo WRD. Most of the material within the pit shell is acid forming and/or potentially metalliferous. Figure 9 shows the NAF (Non Acid Forming) & PAF (Potentially Acid Forming) material production throughout the mine life. The following WRD design strategies are recommended for the project:

- Control all WRD toe seepage so that it reports to the TSF footprint;
- Placement of NAF oxide waste rock around the outer perimeter and final upper surface of the WRD to encapsulate PAF waste rock and reduce oxygen ingress.
- Material segregation based on geochemical (NAF vs PAF) classification, with higher risk materials being encapsulated by lower risk materials (this approach will be assessed during the detailed design phase);
- Managing of physical WRD properties by placing waste rock using an alternating paddock dumping approach and 2 m high lift methods to minimise oxygen ingress by advection;
- Water management to prevent run-on water to the WRD; and
- Incorporation of controls to direct WRD seepage towards the TSF into the WRD design philosophy.

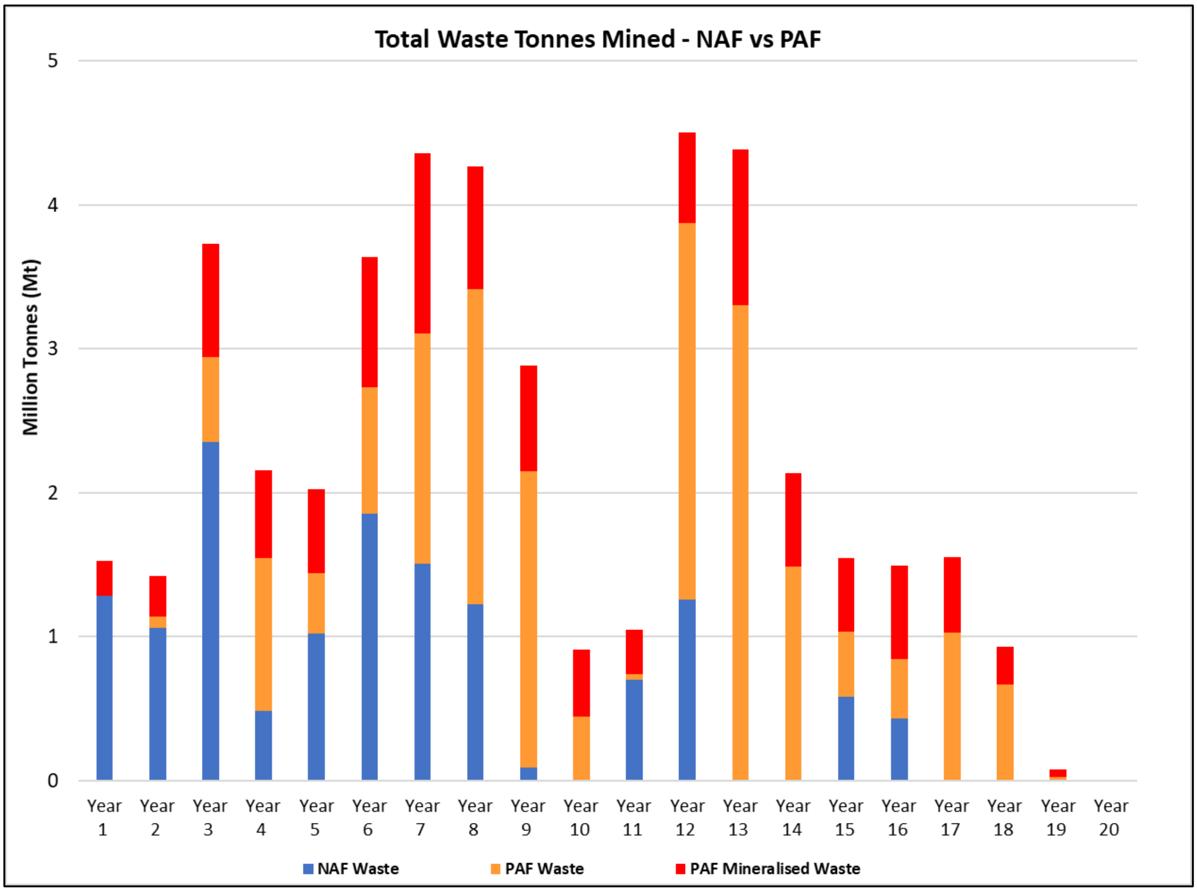


Figure 9: NAF and PAF Material Mined from Chilalo Pit

APPENDIX C. COMPETENT PERSONS CONSENTS

Ore Reserve Estimate

The information in this announcement that relates to the Ore Reserve at the Chilalo Project is based on information compiled by Karl van Olden, a Competent Person, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Karl van Olden is employed by CSA. Mr van Olden has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the JORC Code 2012 Edition. Mr van Olden consents to the inclusion of such information in this announcement in the form and context in which it appears.

Metallurgy

The information in this announcement that relates to metallurgical test work management, interpretation of results and process design for a DFS level assessment is based on information compiled and reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits Pty Ltd. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the JORC Code 2012 Edition. Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

Engineering

The information in this announcement that relates to the process plant and infrastructure design for a feasibility study assessment to a ±15% level is based on information compiled and reviewed by GR Engineering Services. GR Engineering Services consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

Forward Looking Statements

This news release includes certain "forward-looking statements". Forward-looking statements and forward-looking information are frequently characterised by words such as "plan," "expect," "project," "intend," "believe," "anticipate", "estimate" and other similar words, or statements that certain events or conditions "may", "will" or "could" occur. All statements other than statements of historical fact included in this release are forward-looking statements or constitute forward-looking information. There can be no assurance that such information or statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such information. Important factors could cause actual results to differ materially from Graphex's expectations.

These forward-looking statements are based on certain assumptions, the opinions and estimates of management and qualified persons at the date the statements are made and are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements or information. These factors include, but are not limited to the inherent risks involved in the exploration, development and mining of mineral properties; geological, mining and processing technical problems; the inability to obtain mine licenses, permits and other regulatory approvals required in connection with mining and processing operations; competition for among other things, capital, acquisitions of reserves, undeveloped lands and skilled personnel; various events that could disrupt operations; the possibility of project cost overruns or unanticipated costs and expenses; and the ability of contracted parties to provide services as contracted.

Graphex undertakes no obligation to update forward-looking statements or information if circumstances should change. Forward looking statements are provided as a general guide only and should not be relied on as a guarantee of future performance. The reader is cautioned not to place undue reliance on forward-looking statements or information. Readers are also cautioned to review the risk factors identified by Graphex in its regulatory filings made from time to time with the ASX.

Statements regarding plans with respect to the Company's mineral properties may contain forward looking statements. Statements in relation to future matters can only be made where the Company has reasonable basis for making those statements.

The Company believes it has a reasonable basis for making the forward-looking statements in this announcement, including with respect to any production targets, based on the information contained in this announcement and in particular:

- The DFS was completed by GRES, which envisages the development of the Project based on the Ore Reserve and Mineral Resource estimate provided by CSA, as set out in the DFS. GRES has compiled the capital and operating costs estimates and provided sign-off for the Feasibility Study level cost estimates (excluding owner's costs) based on the mining schedule and estimated mine operating costs provided by CSA and capital and operating costs for the process plant. Richard van Zyl of GRES has visited the Chilalo site and held discussions with service providers in Tanzania for the Project.
- Additional capital and other operating costs including non-process infrastructure, product transportation and general and administration, were developed by GRES from internal databases.
- The Study is sufficient to be considered a Definitive Feasibility Study level with approximate accuracy of ±15%.

APPENDIX D. JORC 2012, TABLE 1 REPORTING

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	**Pre-2018 drilling programs:** • Reverse circulation (RC) drilling was used to collect 1 m downhole samples for the laboratory analysis. • Typically, a 1–2 kg sample was collected using a cone splitter or during 2016 drilling, a representative 1/8 sample was collected using a three-tier riffle splitter. Samples were composited to 2 m numbered and bagged before dispatch to the laboratory and sent for combustion infrared detection (LECO) analyses. All RC samples were submitted for analysis. • HQ diamond core was geologically logged and sampled to corresponding 2 m composite RC intervals when twinning an RC hole, otherwise sampling was to geological contacts with nominal sample lengths between 0.25 m and 1.5 m. • HQ quarter-core samples were collected by diamond blade rock saw, numbered and bagged before dispatch to the laboratory and sent for LECO analyses. All core samples were submitted for analysis. • Commercial reference materials (CRMs) and field duplicate samples were regularly included into the sample stream for both RC and diamond to monitor analytical accuracy and sampling precision. • Sampling is guided by Graphex's standard operating and QAQC procedures. **2018 drilling program:** • Samples were collected on 1 m basis within the same zone (i.e. within HG, LG and WASTE). When there is a change in zone, samples were collected based on the lithological boundaries of mineralisation, with minimum sample length of 0.5 m and maximum length of 1.5 m and sent for LECO analyses graphitic carbon and sulphur content. All resource holes cores were submitted for analysis. For the pit geotechnical and tailings storage facility (TSF) sterilisation holes, the mineralised zones were selected and submitted for assaying. • CRMs and field duplicate samples were used to monitor analytical accuracy and sampling precision. • Sampling is guided by Graphex's standard operating and QAQC procedures. • PQ (resource holes) and NQ (pit geotechnical and TSF sterilisation holes) diamond cores were geologically logged and sampled. Core is quarter cored by diamond blade rock saw, numbered and bagged before dispatch to the laboratory for preparation and analysis. • Core is routinely photographed wet and dry.
Drilling techniques	**Pre-2018 drilling programs:** • Diamond and RC holes were drilled in a direction to intersect the mineralisation orthogonally. • RC holes were drilled using a 140–146 mm face sampling hammer button bit. • The RC drilling was completed using either a Schramm 450 or UDR 650 drill rig with additional booster and auxiliary used as required to keep samples dry and produce identifiable rock chips. • Diamond holes were drilled using HQ diameter (63.5 mm) core bit with standard inner tubes to target depth. • The diamond drilling was completed using a conventional wire-line core rig. • Core orientations were measured every drilled run, either 3 m or 1.5 m. • Downhole directional survey was taken every 30 m to ensure target was reached. **2018 drilling program:**

Criteria	Commentary
	• Diamond holes were drilled in a direction to intersect the mineralisation orthogonally. • Metallurgical drillholes were targeted down dip or vertically to obtain maximum amounts of mineralised material to provide suitable samples for metallurgical testing. • Diamond drilling with standard inner tubes PQ3 and NQ are drilled to target depth. • Diamond drilling was completed using a conventional wireline rig. • Core orientations were measured every drilled run either 3 m or 1.5 m. • Downhole directional survey was taken every 30 m to ensure target was reached.
Drill sample recovery	**RC drilling:** • Sample quality and recovery of RC drilling was continuously monitored during drilling to ensure that samples were representative, and recoveries maximised. • RC sample recovery was recorded using sample weights. **Diamond drilling:** • Diamond core recoveries in fresh rock are measured in the core trays per drilling run. Diamond core is reconstructed into continuous runs and marked with bottom-of-hole orientation lines. Depths are checked against depths marked on core blocks. Rock quality designation (RQD) is also recorded as part of the geological logging process. • Core recoveries were good – typically >95%. • There is no discernible relationship between sample recovery and total graphitic carbon (TGC) grade. Diamond twinning of RC holes has demonstrated a minimal downwards bias in RC TGC grade.
Logging	**RC drilling:** • Detailed geological logging of RC holes captured various qualitative and quantitative parameters including lithology, mineralisation, colour, texture and sample quality. RC holes were logged at 1 m intervals. • RC chip trays are photographed, wet and dry for future reference. **Diamond drilling:** • Detailed geological logging of all diamond holes captured various qualitative and quantitative parameters including mineralogy, colour, texture and sample quality. • All diamond core has been geologically and geotechnically logged to a level of detail to support Mineral Resource estimation. • Logging data is collected via rugged laptops. The data is subsequently loaded into a dedicated fully relational geological database (Datashed) hosted by a consultant (rOREdata Pty Ltd) for storage. • Core is regularly photographed wet and dry for future reference. • All holes drilled have been geologically logged in their entireties.
Subsampling techniques and sample preparation	**RC drilling:** • RC samples were sampled dry and routinely taken at 1 m intervals. This was completed either directly with a 1–2 kg sample retrieved from a regularly cleaned cone splitter or a representative 1/8 sample taken from a regularly cleaned three-tier riffle splitter. The remainder of the drilled sample was recovered in a large plastic bag. • RC 1 m samples were then composited into a 2 m sample using a laboratory deck splitter, or where possible sampled to nearest 1m geological boundary. • A small fraction of RC samples returned to the surface wet. These samples were dried prior to sampling. All samples were submitted for assay. • All RC samples were labelled such that they corresponded to remainder samples if further analysis was required. **Diamond drilling:**

Criteria	Commentary
	• Core is cut with a diamond saw into half core and then one half into quarter core. A quarter of the core, sampled to 1 m or lithological boundaries, is sent to the laboratory for assay. • A quarter core is archived. A half core is reserved for any other required test-work. Such as metallurgical, AMD etc. **All drilling:** • Control samples (blanks, field duplicates and commercial standards) are inserted into the sample stream every 20th sample (one standard, one blank, one site duplicate) or not less than 5% of all collected samples for each control sample. Additionally, one standard, one blank and one site duplicate will be inserted for every 20 m of mineralisation intersected. A mineralised zone is a zone greater than 5 m with a visual estimate of more than 5% graphite. Internal dilution of non-mineralisation (up to 5 m) can be included in the mineralised thickness. • High valued standards are preferably inserted within the strong mineralisation. Similarly, low valued standards are inserted within the weak mineralisation. A mineralised zone is a zone greater than 5 m with a visual estimate of more than 5% graphite. • Samples were stored on site prior to being transported to the laboratory. • Samples were marked with unique sequential numbering to ensure controls against sample loss or omission. • Samples were sorted, dried and weighed at the laboratory where they were then crushed and riffle split to obtain a sub-fraction for pulverisation, in preparation for sample analysis.
Quality of assay data and laboratory tests	**Pre-2108 drilling programs:** • All RC and diamond samples were submitted to ALS for both sample preparation and analytical assay. • Samples were sent to the ALS laboratory in Mwanza (Tanzania) for sample preparation. Samples are crushed to >70% passing -2 mm and then pulverised to >85% passing-75 microns. • For all samples a split of the sample is analysed by means of a combustion infrared detection method using a LECO analyser to determine TGC (ALS Minerals Codes C-IR18). • Majority (97%) of samples have also been assayed for total sulphur by means of a combustion infrared detection method using a LECO analyser (ALS Minerals Code S-IR08). • Laboratory duplicates and standards were also used as quality control measures at different subsampling stages. • 76 samples were sent for umpire laboratory testing, with the results validating the accuracy of the primary laboratory assay results. • Examination of all the QAQC data indicates that the laboratory performance has been satisfactory for both standards, with no failures and acceptable levels of precision and accuracy. **2018 drilling program:** • All samples were submitted to ALS laboratory in Johannesburg, South Africa for sample preparation and analytical assay. • Samples are crushed to >70% passing -2 mm and then pulverised to >85% passing -75 microns. • For all samples, a split of the sample is analysed using a LECO analyser to determine graphitic carbon and sulphur content (ALS Minerals Codes C-IR18 and S-IR08). • Laboratory duplicates and standards were also used as quality control measures at different subsampling stages. • 148 samples were sent for umpire laboratory testing at the SGS Randfontein, South Africa laboratory. Analysis of the results showed an insignificant upward bias (+2.1%) in the primary laboratory mean grade results, few outliers and over 95% passing 10% half absolute

Criteria	Commentary
	relative difference. The results are considered to validate the accuracy and precision of the primary laboratory assay results. • Examination of all the QAQC data indicates that the laboratory performance has been satisfactory for both standards, with very few failures and acceptable levels of precision and accuracy. CSA Global believes that laboratory accuracy and precision has been sufficiently demonstrated to use the drill assay data with a reasonable level of confidence in a Mineral Resource estimate (MRE).
Verification of sampling and assaying	• Senior Ngwena Tanzania Ltd (Ngwena)/Graphex Mining Ltd (Graphex) geological personnel supervised the sampling, and alternative personnel verified the sampling locations. • External oversight is established with the contracting of an external consultant to regularly assess on site standards and practices to maintain best practice. • Six RC holes have been twinned by diamond drilling core holes to assess the degree of intersection and grade compatibility between the dominant RC samples and the twinned core • Assay data is loaded directly into the fully relational Datashed geological database which is hosted and managed by an external database consultancy. • Visual comparisons will be undertaken between the recorded database assays and hard copy records at a rate of not less than 5% of all loaded data. • No adjustments have been made to assay data.
Location of data points	• Drillhole collar locations have been surveyed using a handheld global positioning system (GPS) with an accuracy of 5 m for easting, northing and elevation coordinates. • Drillhole collars where re-surveyed using a differential GPS with an accuracy of <5 cm at the end of the program. • Collar surveys are validated against planned coordinates and the topographic surface. • Downhole surveys are conducted during drilling using a Reflex single shot every 30 m. • The primary (only) grid used is UTM WGS84 Zone 37 South datum and projection. • The topographic surface used in resource modelling has been generated from the contour data generated from the UAV surveys completed by Atlas Geophysics in 2017 and spot heights and collar surveys data captured using differential GPS.
Data spacing and distribution	• The Chilalo deposit has been sampled using RC and diamond core drilling over a number of drilling campaigns, with initial drilling completed on a nominal 200 m x 200 m grid. • Subsequent infill drilling programs have sequentially reduced the grid spacing to a nominal 50 m drill spacing on drill section lines nominally 100 m apart along strike. • Six geotechnical drillholes have been completed between 200 m and 400 m apart, designed to provide information on the stability of the pit walls. • Metallurgical drilling (two holes) was aimed at collecting enough mineralised material for metallurgical testwork. One of the metallurgy holes was drilled down dip the main high-grade mineralisation zone and the second one was drilled vertical at about section 472,000 m E.
Orientation of data in relation to geological structure	• All drillholes have been orientated to intersect the graphitic mineralisation as close to perpendicular as possible. • From surface mapping of the outcrops in the area, trenching and already completed modelling, the interpreted mineralisation zones, dip at angles of between 50° and 60° to the south to south-southwest. The drilling was hence planned at a dip of -50/60° oriented 315–360°. • The orientation of drilling is not expected to introduce any significant sampling bias.
Sample security	• All samples are marked with unique sequential numbering to ensure controls against sample loss or omission. This number was retained during the entire process.

Criteria	Commentary
	• The samples are cut, packed and locked in the offices at Ntaka camp (at site) which have 24-hour security prior to transportation by locked commercial truck carrier. • Prior to the 2018 drilling campaign, samples were trucked to the ALS Mwanza sample preparation facility, which then prepared and shipped the sealed prepared samples to the ALS Brisbane laboratory for analysis. • For the 2018 drilling campaign, the samples were transported to Dar-es-Salaam by locked commercial truck carrier due to the ALS Mwanza facility having been shut down. • An export permit is processed while samples are kept at the Dar-es-Salaam offices with 24 hours security prior to being sealed by government officials from the ministry of minerals. • The sealed samples were then air freighted to the ALS laboratory in Johannesburg, South Africa by DHL courier.
Audits or reviews	An independent consultant from CSA Global, with expertise in graphite, completed a site visit prior to and upon commencement of drilling to ensure the sampling protocol met best practices to conform to industry standards.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	• The Mineral Resource Estimate (MRE) reported in this announcement was originally situated on granted prospecting licence PL6073/2009 which is owned by Ngwena, a wholly owned subsidiary of Graphex. • Subsequent mining licence approval at the beginning of 2017 has enveloped the Chilalo Mineral Resource within ML569/2017, owned by Ngwena, whilst the remainder of original PL6073/2009 now exists as licence PL11034/2017 also held now by Ngwena. • ML569/2017 and PL11034/2017 are currently valid and in good standing.
Exploration done by other parties	Exploration has been performed by an incorporated subsidiary company of Graphex, Ngwena. Stream sediment surveys carried out historically by BHP were not assayed for the commodity referred to in the announcement.
Geology	The regional geology is comprised of late Proterozoic Mozambique mobile belt lithologies consisting of mafic to felsic gneisses interlayered with amphibolites and metasedimentary rocks. The mineralisation consists of a series of intercalated graphitic horizons within felsic gneiss (siliceous and aluminous rich sediments), amphibolites (mafic sourced material) and rarely high purity marble horizons.
Drillhole information	• All relevant drillhole information has been previously reported to the Australian Securities Exchange (ASX). No material changes have occurred to this information since it was originally reported. • All relevant data has been reported.
Data aggregation methods	Not relevant when reporting Mineral Resources.
Relationship between mineralisation widths and intercept lengths	Not relevant when reporting Mineral Resources.
Diagrams	Refer to figures within the main body of this report.
Balanced reporting	Not relevant when reporting Mineral Resources.
Other substantive exploration data	• A versatile time domain electromagnetic (VTEM) geophysical survey was initially completed over a large portion of the Nachingwea Property. It identified numerous anomalies which were likely to be associated with graphite mineralisation. Based on the VTEM data a number

Criteria	Commentary
	of the identified targets were drilled in 2014 and the Chilalo high-grade deposit was discovered. • Downhole electromagnetic (DHEM) surveys were carried out on 18 of the RC drillholes completed in 2014; nine diamond holes completed in 2015, five RC drillholes completed in 2016 and 11 diamond holes completed in 2018. The DHEM survey data were acquired by Graphex's in-house survey crew and equipment (EMIT probe and receiver, and Zonge transmitter). The aim of the DHEM survey campaign was to detect known and off-hole electromagnetic (EM) responses associated with graphite mineralisation. The EM responses were modelled by Resource Potentials Pty Ltd to determine the location, orientation and size of the conductors associated with graphite mineralisation. The modelled DHEM conductor plate wireframes were provided in 3D DXF format to assist in geological modelling. • Fixed loop electromagnetic (FLEM) surveys were carried out during the 2015 and 2016 field seasons to collect ground EM data over multiple linear conductive graphitic horizons identified in the existing versatile time-domain EM (VTEM) survey data. Graphex's in-house Zonge GGT-10 transmitter, a SmartEM 24 receiver and a Smart Fluxgate 3-component B-Field sensor and personnel were used for the FLEM surveying. • All other meaningful exploration data concerning the Chilalo Project has been reported in previous reports to the ASX. • No other exploration data is considered material in the context of the MRE which has been prepared. All relevant data has been described in Section 1 and Section 3 of JORC Table 1.
Further work	• A Definitive Feasibility Study has been completed and released on 29 January 2020, the results of which are included in this announcement. • Figures are provided within the main body of this report.

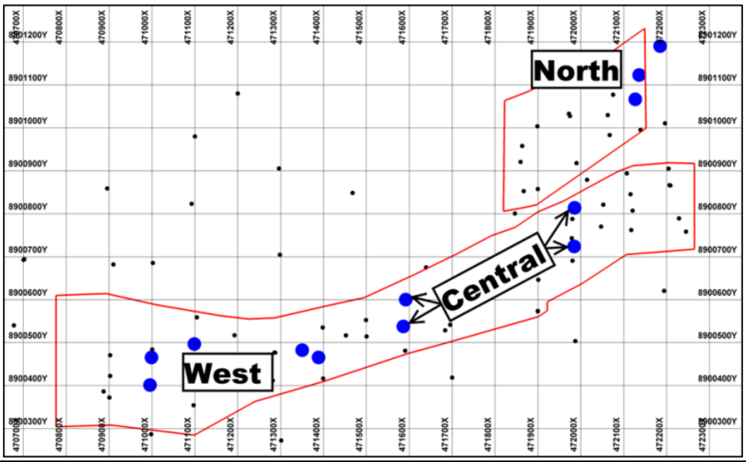
Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	• Data used in the MRE is sourced from a database export. Relevant tables from the database are exported to Microsoft Excel format and converted to CSV format for import into Datamine Studio 3 software. • Validation of the data import include checks for overlapping intervals, missing survey data, missing assay data, missing lithological data, and missing collars.
Site visits	• Representatives of the Competent Person have visited the project on several occasions, most recently in June 2015. The Competent Person's representatives were able to review drilling and sampling procedures, as well as examine the mineralisation occurrence and associated geological features. All samples and geological data were deemed fit for use in the MRE.
Geological interpretation	• The geology and mineral distribution of the system appears to be reasonably consistent through the core high-grade zone. Modelling of the geology of the Chilalo Main deposit has been updated to reflect the results of drilling completed in in 2018. The 2018 drilling was primarily focused on infill to upgrade confidence in the geological and grade continuity of the deposit in the southwest extension of the Main deposit and on extension and infill for the North deposit similarly to upgrade confidence in the geological interpretation and continuity, and grade continuity. • Any structural influences are not expected to be significant through the core high-grade zone of the Chilalo Main deposit, where the drilling and geophysical data have shown good geological and grade continuity; however structural influences are at noted at roughly 471,280 m E with a strike change noted in the Main deposit and a linear topographic feature trending northwest to southeast. The structural influences are not anticipated to significantly alter interpreted mineralisation volumes or grades in the area of intersection

Criteria	Commentary
	with the main zone mineralisation. The mineralisation zones to the north of the eastern side of Main deposit appear separated from the Main deposit by a structural feature evidenced by a topographic low between the deposits. The North deposit mineralisation has a southward dip and appears to be structurally terminated to the east, south and west. • Drillhole intercept logging, assay results, DHEM and FLEM modelling have formed the basis for the mineralisation domain interpretation. Assumptions have been made on the depth and strike extents of the mineralisation based on drilling and geophysical information. • The extents of the modelled zones are constrained by the information obtained from the drill logging and geophysical data. Alternative interpretations are unlikely to have a significant influence on the global MRE. • An overburden layer with an average thickness of 2.5 m has been modelled based on drill logging and is depleted from the model. Graphex geologists have updated weathering logging in drillholes to ensure interpretive consistency across drilling campaigns. This updated weathering data has been provided to CSA Global and used in concert with visual validation using core and chip photographs, as well as sulphur analysis values to generate weathering surfaces for base of complete oxidation and top of fresh rock. • Interpretations of the geological units of the Chilalo project area have been generated by Graphex geologists. A mineralisation interpretation based on a nominal TGC% cut-off grade of 5% for the core higher-grade lenses and a nominal 2% for the surrounding lower-grade lenses has been generated by CSA Global and correlated with the geological interpretation reasonably well. • Continuity of geology and grade can be identified and traced between drillholes by visual, geophysical and geochemical characteristics. Additional data is required to more accurately model the effect of any potential structural or other influences on the down dip and strike extents of the defined mineralised geological units. Confidence in the grade and geological continuity is reflected in the Mineral Resource classification.
Dimensions	• In the Chilalo Main deposit the core high-grade mineralisation (>5% TGC) interpretation consists of two lenses. The main footwall lens strikes towards 250°, dipping roughly 50° towards 160°, with a strike length of roughly 1.1 km from the northeast towards the southwest, and a further strike length of roughly 500 m, after a strike change to 250° at about 471280 m E with a dip roughly 40° towards 180°. The average interpreted depth is approximately 200 m below surface and the true thickness is approximately 25 m for the eastern half and 10 m for the western half. The secondary high-grade lens is interpreted to be approximately 1.1 km long in the hanging wall of the western two thirds of the main lens from roughly 471800 m E extending to the west. It is interpreted to be between 40 m in depth in the east, and 160 m in depth in the west, and between 2 m and 15 m in true thickness with a similar strike and dip to the main lens. The low-grade mineralisation (>2% TGC) lenses enclose the high-grade lenses and are in the hanging wall above them and have similar strike and depth extents over the classified portions of the model. Some of the low-grade lenses are interpreted to continue along strike to the west for approximately 800 m, but these portions of the model are not classified due to insufficient data and therefore lower confidence. These lenses are generally about 5–15 m in true thickness. • At the Chilalo North deposit, the core high-grade mineralisation (>5% TGC) interpretation consists of two lenses. The hanging wall lens strikes towards 240°, dipping roughly 45° towards 150°, with a strike length of roughly 500 m from the northeast towards the southwest. The average interpreted depth is approximately 150 m below surface, ranging between roughly 110 m on the eastern and western ends to a maximum roughly 180 m near the centre. True thickness ranges between roughly 6 m on the eastern and western extremities through a maximum of roughly 30 m near the centre. • The footwall lens has a very similar strike and dip geometry to the footwall lens but extends about 90 m below surface in the east and 120 m below surface in the west and up to about 230 m near the centre. The average true thickness of this lens is roughly 7 m in the east

Criteria	Commentary
	and 6 m in the west. The interpreted low-grade mineralisation (>2% TGC) lenses enclose the high-grade lenses or are between or in the hanging wall above them. They have similar strike and depth extents to the high-grade lenses. The average true thickness of the two larger low-grade lenses that enclose the high-grade lenses is roughly 40 m in the centre to 10 m in the east and west for the hanging wall lens, and the footwall lens is on average about 12 m.
Estimation and modelling techniques	• The mineralisation has been estimated using ordinary kriging (OK). • Two >5% TGC high-grade lenses and four >2% low-grade lenses were interpreted at the Chilalo Main deposit, with two high-grade lenses and six low-grade lenses in the Chilalo North East deposit. • Samples were selected within each lens for data analysis. Statistical analysis was completed on each lens to determine if any outlier grades required top cutting. • Statistical analysis to check grade population distributions using histograms, probability plots and summary statistics and the coefficient of variation, was completed on each lens for the estimated element. The checks showed there were no significant outlier grades in the interpreted cut-off grade lenses. The few modestly outlying values were visually assessed and found to reflect true higher-grade zones, having some continuity, but which were not large enough to separately model. These areas were checked during the model validation process to verify they did not unduly influence the grade estimation. • An inverse distance squared (IDS) grade estimate was completed concurrently with the OK estimate in a number of estimation runs with varying parameters. Block model results are compared against each other and the drillhole results to ensure an estimate that best honours the drill sample data is reported. • No mining has yet taken place at these deposits. • No mining assumptions have been made. • Sulphur has been estimated into the model for possible future use by mine engineers and metallurgists in terms of processing and water quality. • Interpreted domains are built into a sub-celled block model with a 10 m(N) x 25 m(E) x 5 m(RL) parent block size. Search ellipsoids for each lens have been separately orientated based on their overall geometry. To accommodate the strike change in the interpreted mineralisation lenses in the Chilalo Main deposit, additional search ellipsoid orientations have been defined for each affected lens. Block size, sample numbers per block estimate, ellipsoid axial search ranges and block discretisation have been tailored based on the results of a kriging neighbourhood analysis. The search ellipse is doubled for a second search pass and increased 20-fold for a third search pass to ensure all blocks are estimated. Sample numbers required per block estimate have been reduced with each search pass. • Hard boundaries have been used in the grade estimate between each individual interpreted mineralisation lens. Soft boundaries are used within each lens to accommodate the strike changes and associated adjusted search ellipsoids. • Validation checks included statistical comparison between drill sample grades, the OK estimate and the IDS estimate results for each zone. Visual validation of grade trends along the drill sections was completed and trend plots comparing drill sample grades and model grades for northings, eastings and elevation were completed. These checks show reasonable correlation between estimated block grades and drill sample grades. • No reconciliation data is available as no mining has taken place.
Moisture	Tonnages have been estimated on a dry, in situ basis, and samples were generally dry. No moisture values could be reviewed as these have not been captured, with core samples being dried before density measurements.
Cut-off parameters	Visual analysis of the drill assay results demonstrated the higher-grade zones interpreted at the nominal lower cut-off grade of 5% TGC corresponds to a natural grade change from lower to higher grade mineralisation. The lower cut-off interpretation of 2% TGC corresponds to

Criteria	Commentary
	natural break in the grade population distribution. Graphex verbally confirmed that early indications from metallurgical testing show that the lower-grade material is capable delivering good quality flake material. Since this material is also primarily located in the hanging wall, and it would need to be mined in an open cut to access deeper portions of the higher-grade zones, it has been classified as Inferred as it may be possible to economically beneficiate.
Mining factors or assumptions	• It has been assumed that these deposits will be amenable to open cut mining methods and are economic to exploit to the depths currently modelled using the cut-off grade applied. • No assumptions regarding minimum mining widths and dilution have been made.
Metallurgical factors or assumptions	**2015 "Chilalo Main" Mineral Resource:** • 32 quarter-core samples from four boreholes were selected for thin section examination by Townend Mineralogy, mainly to identify weathering zones and to assess graphite flake size and likely liberation characteristics. • Minerals such as jarosite, opaline silica, clays and goethite have replaced Fe-sulphides and silicate minerals to depths of 20–30 m downhole. This mineral assemblage is interpreted to define the Oxidised Zone. • There is significant weathering/alteration in the high-grade graphite domain, resulting particularly in the breakdown of sillimanite to kaolin which occurs to depths of approximately 50 m downhole. The occurrence of kaolinised sillimanite (plus Fe sulphides) is interpreted to define the Transitional Zone. • There appears to be two graphite populations in terms of flake width: (i) thin flakes generally less than about 100 micron width and up to about 1 mm in length, in lithologies with between about 2% and 5% TGC; and (ii) flakes up to 1 mm thick and several millimetres in length in rocks with more than about 5% graphite. • Metallurgical composites were prepared at SGS laboratory in Perth from diamond drill core, to form representative fresh and transitional ore samples. • The metallurgical composites were crushed to minus 3.35 mm and demonstrate that highest TC grades are in the coarse size fractions greater than about 0.25 mm. • Cleaner flotation testwork on fresh and transitional composites using five stages of cleaning produced final graphite concentrates at target grade TGC >94% and up to 95% graphite recovery, maintaining a favourable coarse particle size distribution (PSD) – 40–70% of the flakes are >150 micron). • Testwork on oxide composites using a standard flotation procedure has demonstrated high graphite recovery. • The preliminary testwork program demonstrated that the mineralisation is amenable to the production of high-grade graphite concentrates, at coarse flake sizes, using relatively simple flotation processes. • Additional metallurgical testwork on each mineralisation and weathering domain is required to verify and refine the initial findings. **2017 "Chilalo North East" Mineral Resource:** • 19 composite RC chip samples from three boreholes NRC16-181, NRC16-184 and NRC16-185 were selected for thin section examination by Townend Mineralogy. The objective was to identify weathering zones, to assess graphite flake size and likely liberation characteristics in addition to comparison with the Main deposit. • It is cautioned that RC chip samples are not expected to be as representative as diamond core samples, given that the RC chips exclude fine powders generated by the RC percussion method. • Minerals such as jarosite, opaline silica, clays and goethite have replaced Fe-sulphides and silicate minerals to depths of 15–30 m downhole. This mineral assemblage is interpreted to define the Oxidised Zone.

Criteria	Commentary
	• The occurrence of partially kaolinised sillimanite and/or feldspars (plus unoxidised Fe-sulphides) is interpreted to define the Transitional Zone which extends to about 30–60 m downhole. The higher-grade parts of the deposit appear to be more deeply weathered than low grade, or unmineralised lithologies. • There are several graphite populations in terms of flake width: (i) thin elongate flakes generally less than about 0.1 mm width and up to about 1 mm in length, (ii) flakes up to about 0.5 mm thick and several millimetres in length; and (iii) very small flakes less than about 0.1 mm in length especially within felsic porphyroblasts. It is anticipated that the population of very small flakes <0.1 mm length may not be recoverable; however, as this population does not appear to be significant, this is not expected to materially affect overall metallurgical recoveries. • Graphite flakes observed from the high-grade zone of the North East deposit are visually similar to flakes observed from the Main deposit, in terms of shape, size and textural relationships. This suggests that the high-grade part of the North East deposit may have similar metallurgical process response to the Main deposit. **2019 “Chilalo” Mineral Resource:** • Representative composite samples from the metallurgy laboratory, crushed to -3.35 mm and homogenised through a rotary splitter, were mounted and polished. Each slide was analysed by petrographic microscopy at Townend Mineralogy Laboratory, using a Leica image analysis program. • Image analysis suggests that there are two in situ flake populations, with a break at approximately 180–150 micron. • Several of the Oxide and Transitional samples show extensive splitting of graphite flakes when in contact with clay minerals. • Global composite and variability composites made up from 2018 drill core samples were submitted to ALS Laboratory, Perth, for metallurgical process tests during 2019. • The metallurgical composites were grouped according to weathering domains; (i) Oxide and (ii) Transitional and Fresh samples which were combined and described as Fresh. • Two global composites were made from across the deposit, described as Global Oxide (three drillholes) and Global Fresh (nine drillholes) from the West, North and Central part of the deposit. • Six variability composites were made from across the deposit, described as North Oxide (one drillhole); North Fresh (three drillholes); Central Oxide (one drillhole); Central Fresh (four drillholes); West Oxide (three drillholes) and West Fresh (five drillholes). • Example map below showing location of Fresh variability composite drill collars. The red polygons are the outline of the 2017 Inferred Mineral Resource. Map grid is 100 m x 100 m. 

Criteria	Commentary
	• Head grades of the composites ranged between ~8% and 14% TGC. • The variability samples included individual core sample intervals with grades between ~4% and ~15% TGC, which is considered representative of the 'high grade' portion of the deposit. • Sulphur values in the head samples were generally low compared with graphite contents and ranged from 0.06% to 0.48% total sulphur in the oxide composites to 1.54% to 2.26% total sulphur in the fresh composites. • Sulphide sulphur content in oxide samples is low, as most sulphur in oxidised material is in the form of minerals such as jarosite. • Flotation testwork of the composites which were initially stage ground to P100 1.4 mm, and using flash rougher flotation, screening and five stages of cleaning produced final graphite concentrates above target grade TGC >94% and 90–98% graphite recovery. A favourable coarse PSD was maintained, at approximately 60% >180 micron flake size. • Metallurgy testwork is continuing; further results are anticipated later in 2019.
Environmental factors or assumptions	No assumptions regarding waste and process residue disposal options have been made. It is assumed that such disposal will not present a significant hurdle to exploitation of the deposit and that any disposal and potential environmental impacts would be correctly managed as required under the regulatory permitting conditions.
Bulk density	• In situ dry bulk density values have been applied to the modelled mineralisation based on the average measured values for each of the weathering zones. Of the 1,141 measurements taken that were considered valid for analysis, 12 are in the interpreted overburden zone, 197 fall within the interpreted weathered zone, 559 in the transitional zone and 373 in the fresh zone. • Density measurements have been taken on drill samples from all different lithological types, using water displacement methods. • Weathered material was wax coated prior to immersion, while the non-porous competent rock did not require coating. • It is assumed that use of the average measured density for each of the different weathering zones is an appropriate method of representing the expected bulk density for the deposit.
Classification	• Classification of the MREs was carried out taking into account the level of geological understanding of the deposit, quality of samples, density data and drillhole spacing. • The MRE has been classified in accordance with the JORC Code (2012 Edition) using a qualitative approach. All factors that have been considered have been adequately communicated in Section 1 and Section 3 of this Table. • Overall the mineralisation trends are reasonably consistent over numerous drill sections. • The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, supported by geophysical electromagnetic modelling data, which are sufficient to assume geological, mineralisation and quality continuity. • The Mineral Resource is classified as an Inferred Mineral Resource where the model volumes are, in the Competent Person's opinion, considered to have more limited geological and sampling evidence, supported by geophysical electromagnetic modelling data, which are sufficient to imply but not verify geological, mineralisation and quality continuity. • The MRE appropriately reflects the view of the Competent Person.
Audits or reviews	Internal audits were completed by CSA Global which verified the technical inputs, methodology, parameters and results of the estimate. No external audits have been undertaken.

Criteria	Commentary
Discussion of relative accuracy/confidence	• The relative accuracy of the MRE is reflected in the reporting of the Mineral Resource as per the guidelines of the JORC Code (2012). • The Mineral Resource statement relates to global estimates of *in situ* tonnes and grade.

JORC (2012) Table 1 Section 4 – Estimation and Reporting of Ore Reserves

Criteria	*JORC Code explanation*	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	• The Mineral Resource estimate for the Chilalo Graphite Project is based on information compiled by Mr. Grant Louw a full-time employee of CSA Global Pty Ltd under the direction and supervision of Dr Andrew Scogings, who is an Associate of CSA Global. Dr Scogings takes overall responsibility for the report. Dr Scogings is a Member of both the Australian Institute of Geoscientists ("MAIG") and Australasian Institute of Mining and Metallurgy ("AusIMM") and has sufficient experience, which is relevant to the style of mineralization and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC Code 2012 Edition) . • Classification of the Mineral Resource estimates was carried out taking into account the level of geological understanding of the deposit, quality of samples, density data and drill hole spacing. The Mineral Resource is classified as an Indicated Mineral Resource for those volumes where in the Competent Person's opinion there is adequately detailed and reliable, geological and sampling evidence, supported by geophysical electro-magnetic modelling data, which are sufficient to assume geological, mineralisation and quality continuity. CSA Global objectively considers the Mineral Resource has reasonable prospected for eventual economic extraction. • The Mineral Resource estimate is reported inclusive of the Ore Reserve estimate.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• The Competent Person, Mr Karl van Olden of CSA Global Pty Ltd visited the Chilalo Graphite Project in May 2015. • The site visit comprised of an inspection of the deposit outcrops and drill sites. The proposed Project area including access roads, proposed process plant site and surrounding areas were visited and inspected on foot by the competent person. Drill core from selected bore holes and outcrop mapping were also inspected during the site visit. The site visit confirmed the status of the

Criteria	*JORC Code explanation*	Commentary
		Project area and location as reported in the various studies that support this Ore Reserve estimate for the Chilalo Graphite Project. • No material changes have occurred on the site since the Competent Person visit.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Prefeasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	• Graphex Mining Limited engaged CSA Global to conduct a DFS study on mining and GR Engineering to conduct a DFS study on processing facility. The study proposed an operation processing 500ktpa of ROM throughput for the entire Mine Life. The DFS addressed key technical and economic parameters relating to the Chilalo Graphite Project to an appropriate level of confidence. This Ore Reserve estimate considers the Indicated Resource only scheduling scenario of the Chilalo Graphite Project's Mineral Resource estimate, applying all of the Modifying Factors. The DFS found that the Project is physically and economically viable with a strong Internal Rate of Return and a Pay-Back period of approximately 2.5 years. • The work undertaken to date has addressed all material Modifying Factors required for the conversion of a Mineral Resources estimate into an Ore Reserve estimate and has shown that the mine plan is technically feasible and economically viable. The Ore Reserves have been based on parameters provided by GPX and determined by CSA Global, from relevant technical studies conducted by different companies and rates acquired from different contractors.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	• The revenue generated from a graphite operation is primarily driven by the flake size distribution of the product. The flake proportion over a series of size categories determines the basket price of the product. The carbon grade (TGC) is not directly related to flake size. Mineral resource has a minimum cut off of 2% TGC. There is no further cut off applied for the Indicated Resource category. The cut-off between ore and waste also has been determined by net value per block. Total block costs are estimated for all operating costs to the point of sale including processing, product haulage, crusher feed, general and administration, ore differential, sustaining capital, selling costs, and grade control costs. The total block revenue minus the total block costs estimate the net value per block. Any Indicated block returning a positive net value has been defined as "ore" for the purposes of pit design and production scheduling. Any material that has been defined as Mineral Resource that

Criteria	*JORC Code explanation*	Commentary
		has a negative net value has been defined as "waste". • Project economics from the total Project have been considered at the end of the Project iteration to confirm that the cut-off criteria support economic operations for the Chilalo Graphite Project.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	• Input parameters for the pit optimizations were; mining costs based on mining contract rates received from Digmin Mining Contractors; pit geotechnical parameters were provided by OHMS geotechnical consultants; mineral processing costs and recoveries from reputable laboratories and GRE, commodity price for a 95% TGC graphite product from GPX. Graphex has taken market studies from various reputable authorities and consultants to price the Chilalo product. These input parameters were reviewed by CSA Global and are considered appropriate for the current graphite world markets. WhittleTM software applied these parameters to the Resource Block Model to estimate an appropriate pit shell which was used as a basis for the pit design. The current pit design is considered suitable for Ore Reserve estimation. • A traditional excavator (40t to 120t) and articulated dump truck (40t to 50t) configuration have been selected based on a maximum annual mining rate of 5 Mtpa and is appropriate for the design, bench height, mining dilution and recovery applied in the DFS. The selected mining approach is typical for a small to medium scale open pit mining operation. This deposit is going to be mined out as multiple pits and cutbacks. Minimum mining width of 30m is maintained for the cutback designs. Operations include drill and blast activities for the majority of the open pit mining. The waste dump will be progressively rehabilitated to reduce the amount of PAF waste rock exposed throughout the operation. • Geotechnical analysis has been undertaken by Open House Management Solutions (OHMS). The proposed pit slopes are considered likely to be stable for the current pit design. • The Mineral Resource Block Model was estimated by CSA Global. The Mineral Resource Block Model was used for pit optimization and mine planning after inclusion of additional attributes. The Block Model has block sizes of 25 x 10 x 5 m for the pit designs which is considered suitable for the proposed mining method and equipment selection. The Mineral Resource Block Models were used for optimisation and

Criteria	*JORC Code explanation*	Commentary
		mine planning after inclusion of additional attributes to become a Mining Model. • A fixed value of 10% was used for mining dilution in both pit optimisations and mining and production scheduling. A grade of 0% TGC was assumed for dilution material. As a check, dilution for tonnes and grade was also calculated through a dilution skin method and concluded the selected dilution is reasonable. • A fixed value of 95% was used for mining recovery in both optimisations and mining & production scheduling. • A minimum mining width of 20m for normal bench and a minimum cutback width of 30m was used in the pit design. The pit design has a dual lane ramp of 15 m and a single lane ramp of 10 m for the final 30 vertical metres. • Inferred Mineral Resources is not included in the pit optimisation and pit design. Ore Reserve contains only Indicated Resource. A mining and production schedule were completed with Inferred Mineral Resource treated as waste and concluded that conversion of Inferred Mineral Resource to processed product is not required for the overall financial viability of the Chilalo Graphite Project. • The Chilalo Graphite Project's DFS addresses the requirements of all site-based infrastructure, power, water, and logistics to establish, build and operate the Project. The planning of these requirements in the DFS comprised of design, budget estimates from suppliers and detailed cost estimates at least to a PFS level of confidence as required by the JORC code. The appropriate costs of infrastructure and logistics for the establishment and support of the proposed operation are included in the cost estimates for the Project. The company is planning to construct all the infrastructure required to meet the selected mining method and schedule.
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.*	• Representative samples have been used to assess the Chilalo Graphite Project mineralisation's amenability to beneficiation by froth flotation, and also to identify the nature, flake size and occurrence of graphite in a selection of drill core samples and flotation products. The testwork was completed in 2015,2017,2018 and 2019. • The proposed metallurgical process is well established and used successfully in industry for the recovery of graphite. • In 2017, a bulk concentrate production pilot plant trial was conducted on two composites,

Criteria	JORC Code explanation	Commentary

	• *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.*
	• *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*
		one weathered trench composite (5.8t) and one fresh Pit composite (1.2t).
		• In 2019, a representative testwork program completed in ALS Laboratory demonstrates that the ore of the Chilalo Graphite Project is amenable to the production of high-grade graphite product from oxide, transitional, and fresh ore types.
		• ALS test work considered 3 stages,
		  ○ Test work to finalise flow sheet design and provided process engineering data based on program using global fresh and oxide composites produced from samples from the latest drilling campaign based on the objective of maximum graphite flake size preservation at a design target grade of 95% TGC for all flake sizes.
		  ○ Testwork on a number of variability composites identified within the ore body to assess ore variability to established flowsheet.
		  ○ 30-40 t bulk trench sample bulk run to validate the established flowsheet, produce bulk concentrate for marketing purposes or materials for any required vendor testing.
		• Approximately 2 t of drill core was delivered to ALS Metallurgy between February and May 2019. These samples were used to form global master composites as well as establishing variability composites for the DFS. The Master composites were split into either Fresh and Oxide ore zone with samples coming from the all three areas of the resource (North, Central and West). The samples were selected based on consultation with the Graphex geology consultant and included consideration of sample representivity, appropriate cut off grades, location within the likely pit shells, mineralisation continuity, mining widths, lithology. weathering state and internal waste dilution and spatial spread within the pits.
		• The proposed processing plant will include a two-stage crushing circuit that will deliver product to a storage bin. Ore will be reclaimed from the storage bin and delivered to a two-stage milling circuit. The primary rod mill will operate in closed circuit with a screen. The undersize from the mill product screen will report to a rougher flotation cell for recovery of coarse fast floating graphite. The rougher tail will report to the secondary ball mill operating in closed circuit with cyclones. The undersize from the ball mill cyclones will report to the scavenger cells. The rougher and scavenger concentrate will undergo various stages of cleaning regrinding and screening.

Criteria	*JORC Code explanation*	Commentary
		Coarse and fine graphite concentrate will be filtered and dried in separately. Dry graphite concentrate will be screened into various product sizes and bagged for shipping. Flotation tailings will report to the tailings hopper thickener and then be pumped to the tailing storage facility (TSF). • Design throughput rates for the Phase 1 processing plant have been set at 500,000 tpa of open pit ore with production of approximately 50,000 tpa of graphite. An effective utilisation of 91% has been used for design purposes. Inclusion of an intermediate crushed ore bin and installed standby equipment will enable this utilisation to be achieved. • No specific price adjustments have been made for deleterious elements.
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	• Graphex Mining Limited has prepared and submitted to the Tanzanian government, an Environmental and Social Impact Assessment (ESIA) and an Environmental Management Plan (EMP) as part of the process of granting mining licenses for the Project. The mining license application was submitted and obtained in February 2017. The Chilalo Graphite Project has been issued with an Environmental Certificate by the National Environment Management Council of Tanzania. This certification is a pre-requisite for the granting of a Mining License. The appropriate environmental considerations of the Project are included in the Project planning. • As part of the preparation of the DFS, Graphex has submitted an updated ESIA to the Tanzanian Government in December 2019.
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided or accessed.*	• The Chilalo Graphite Project's DFS addresses the requirements of all site-based infrastructure, power, water, and logistics to establish, build and operate the Project. The planning of these requirements in the DFS comprised of design, budget estimates from suppliers and detailed cost estimates to a minimum of DFS level of confidence. The appropriate costs of infrastructure and logistics for the establishment and support of the proposed operation are included in the cost estimates for the Project.
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.*	• The capital cost estimate used in the DFS has been compiled based on the design, supply, fabrication, construction, and commissioning of a new graphite processing plant in Tanzania and includes mining equipment, supporting infrastructure, and indirect costs. The estimate for the processing facility is based on the preliminary process design, process design

Criteria	*JORC Code explanation*	Commentary
	• *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	criteria and equipment list, and process flowsheets. Capital estimates have been based upon budget prices quotations for major equipment, in-house data from recent Projects, and industry standard estimating factors for equipment and installation costs. The capital cost estimates presented in the DFS are considered to have a minimum overall accuracy of +/-15%. The capital cost estimate has been developed in US$. Different independent contractors and experts were engaged by Graphex to generate the cost estimate. • The operating cost estimate used in the DFS includes all costs associated with mining, processing, infrastructure, and site-based general and administration costs. The operating cost estimates have been developed in US$. The operating cost estimate has been prepared to an accuracy of +/- 15%. The operating costs have been estimated from a variety of sources, including; budget quotations received from suppliers; operating cost databases; wages and salaries provided by Graphex Mining Limited and industry sources; estimated based on industry standards from similar operations; first principle estimates based on typical operating data; the mining operating cost estimates have been sourced from a mining contractor by CSA Global. • Graphex will offer a base range of carbon purities with the ability for additional processing to meet customer-specific and market mesh size specifications in the future. It is not commercially feasible or economic to have a wide range of carbon purities, yet it is acceptable to have small overlaps in carbon purity specifications to optimise inventory control and accommodate a greater range of market applications. If a customer specifies a particular carbon purity range (LOI), additional processing can be accomplished by adhering to the value-added and / or tighter specifications commanding higher prices from the customer. High-purity for natural flake graphite is defined as product with 99.0% LOI and higher. Graphex will have the capability to produce high-purity flake graphite (99.0% + LOI) using standard flotation and processing methods without aggressive chemical intervention. • All operating cost estimates have been based in USD. • Transportation charges are based on the detailed price provided by a local contractor, Alistair Logistics. Transportation cost was assumed as US$143 per tonne of product.

Criteria	*JORC Code explanation*	Commentary
		• Processing rate has been provided by Graphex based on the studies conducted by the consults engaged by the company. • Operating costs and Capital costs have been reviewed by CSA Global and are considered reasonable for the intended application. • Selling cost include Government royalties (3%) and Other royalties (1%).
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	• The average Graphite price of USD$1500 per tonne of product has been used for Whittle optimisation. Market predictions and trend analysis has been done by Graphex's independent market consultant who provides detailed pricing across multiple markets, applications, and directly from end users. The consultant also uses government publications; dedicated websites to global graphite mining activities and global pricing information; USGS, and the Global Trade Atlas. Graphex believes the price estimates used in the DFS are the most accurate estimates for selling Chilalo graphite. • For China prices, Graphex has considered input from Benchmark Mineral Intelligence, RefWin, Industrial Minerals, Graphex's China market consultant and conversations with potential customers.
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	• There is a positive correlation between graphite purity and price. Higher purity graphite product demands a higher price because it requires more processing on the producer side to remove impurities/volatiles within the graphite and opens the product to more applications. In general, larger flake sizes demand a premium price due to producing premium products (expandable graphite applications) and tighter supply conditions. Larger flake material offers greater strength to products due to the structure of the particles. This is a primary reason for its market use. The scarcity of graphite with a flake size exceeding +80 mesh means there is an escalation in process above this size. • Graphite does not trade on a designated metal exchange, nor does it have a benchmark index. Prices are negotiated directly between buyers and sellers. Given the graphite industry has historically been dominated by private companies, access to reliable graphite pricing data is difficult to obtain. There are also numerous products across a number of grades and flake sizes and prices differ depending on these characteristics.

Criteria	*JORC Code explanation*	Commentary
		• Flake graphite price forecasts for the next five years demonstrate the increase in prices based on the market assessment by Graphex and its market consultant, especially for coarse flake fractions where Graphex see the strongest growth. • Graphex has a distinct signature in the Chilalo resource, possessing specific metallurgical and chemical attributes ideally suited for foils, fire-retardants, engineered products, lubricants, and thermal drilling fluids. The Chilalo resource has proven it can be processed, using standard flotation, to achieve 95% to >99% LOI as well as achieving higher than average coarse flake fractions. These attributes are expected to produce a high-value product suitable for high-tech and higher priced applications. • Graphex has selected target markets for initial focus after understanding the competitive advantages of Chilalo graphite and undertaking market research on supply/demand, qualification timeframes and growth expectations of various markets. The initial target markets are as follows: Thermal Management Market Group, Engineered Products Market Group and Lubricants Market Group. Graphex plans to sell into other applications for its products to diversify its revenue streams. These include value-added products in micronised graphite and expandable graphite.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	• The economic analysis is based on cash flows driven by the production schedule. The cash flow projections include initial and sustaining capital; mining, processing and product logistics costs to the customer; revenue based on an appropriate sale price adjusted for fees, charges, and royalty; and a 10% discount factor. • Sensitivity analysis was undertaken for a +/- 20% variation on the key Project financial metrics including: average sale price; operating costs; capital costs; metallurgical recovery and discount rate. In all sensitivity cases, the NPV of the project was positive.
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	• Local, regional and national stakeholders have been engaged in the development and planning of the Project. • The previously approved relocation action plan (RAP) has been updated, agreed with local communities and approved by the Government Valuer to address the relocation and compensation of community members who would be affected by mining operations.

Criteria	*JORC Code explanation*	Commentary
		• Appropriate permitting for issues such as dewatering are being addressed through the appropriate processes.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	• Graphex Mining Limited is conducting advanced discussions with potential buyers of the graphite product regarding offtake agreements and potential investment in the company. • According to Graphex, there are no apparent impediments to obtaining all government approvals required for the Chilalo Project. • The Ore Reserves stated are located on approved mining leases.
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	• The Mineral Resource has been modified by the application of suitable modifying factors and have been classified as Probable, based on the Indicated classification of the Mineral Resource estimate. The level of work undertaken through pit optimisation studies and pit designing is considered sufficient for the classification of Probable Ore Reserves. The Ore Reserve estimate considers only Indicated Mineral Resources and does not include any quantity of Inferred or unclassified material. Thus, the Ore Reserve estimate comprises of only Probable Ore Reserves. • Mr Karl Van Olden, the Competent Person for this Ore Reserve estimation, has reviewed the work undertaken to date and considers that it is sufficiently detailed and relevant to each of the deposits to allow those Ore Reserves derived from the Indicated Mineral Resources to be classified as Probable. • No Measured material has been estimated in the Mineral Resource for the Chilalo Graphite Project.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	• The Mineral Reserve estimate, mine design, scheduling, and mining cost model has been subject to internal peer review processes by CSA Global. No material flaws have been identified. • No external audit has been conducted.
Discussion of relative	• *Where appropriate a statement of the relative accuracy and confidence level in the*	• A key parameter of the estimate is the value of the average sale price received for the product.

Criteria	*JORC Code explanation*	Commentary
accuracy/ confidence	*Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	This is based on reliable metallurgical testwork to determine proportions of each flake size category in the product. The estimated price received for the combined product is based on a credible estimate of the expected price as of the Project base data. As with all commodities, the actual price received will depend on market conditions and contractual arrangements at the time of sale. A sensitivity analysis was completed in the financial model for average price reductions of 29% and the Project value remains positive at this point. • The Competent Person considers that the methodology applied to arrive at the Ore Reserve estimate for Graphex's Chilalo Deposit is appropriate. • The estimate is based on a detailed block model of the Resource and a detailed mine design. The Ore Reserve estimate is based on spatially supported and explicit mining schedule. • The overall accuracy of the cost estimate used in the estimation of these Ore Reserves is considered to be within +/-15%. Most of the cost estimates have been derived from contractors, market research and independent studies, so the global accuracy is considered very solid. • Confidence in the application of the modifying factors is appropriate for the estimate. • Ore will not be blended from other deposits before treatment in the processing plant.