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ASX Symbol

FGR, FGROA, FGROB

September 2016 Quarterly Report

Company makes further progress to becoming a producer of high quality graphene and high grade graphite

First Graphite (ASX: FGR) is pleased to report on what has been a successful September Quarter in which it has made progress in its strategy to become a significant supplier of premium quality graphene and high grade graphite.

Highlights

- Successful Phase 1 commissioning of graphene production unit gives ability to supply graphene to industry for development of functionalised uses
- Further research arrangements with Flinders University and the University of Adelaide
- Continued development at Pandeniya and Aluketiya mine shafts
- Completion of downhole electromagnetic (DHTEM) surveys at its Aluketiya and Pandeniya projects. First use of such technology in Sri Lanka
- Warehouse construction commenced to provide central hub.

Graphene Production Unit

The 250 litre production cell built by the Company was successfully commissioned for Phase 1 during the month of September.

During that month, the cell has demonstrated its capacity to continuously produce significant amounts of high-quality graphene.

The Company continues to research the optimum mix of power and electrolyte. and will be undertaking further development work on the methodologies for screening, washing and drying of the graphene being produced. Several methods are under consideration, including the use of sonication screens and the use of a Vortex Fluidic Device (VFD) and Turbo Thin Film processing technology, which may enable the production of single layer graphene.

Industry has not yet had access to bulk quantities of low cost graphene but that may change with the commissioning of this prototype production unit. The Company will be able to supply graphene for research and development for large-scale applications, thereby accelerating market development.

Having established the ability to produce graphene at very low cost, First Graphite is continuing its work at the University of Adelaide and Flinders University to identify commercial applications of graphene, thereby opening up new markets





Figure 1: Installed graphene unit



Figure 2: Production graphene unit in operation



Graphene Purification Technology

The Company and Flinders University will be collaborating on commercially developing and scaling-up the graphite and graphene purification technology pioneered by Professor Colin Raston, winner of the Ig Nobel prize for refolding proteins with the VFD.

The application of a Vortex Fluidic Device (VFD) covers a growing number of processing capabilities, from small molecule synthesis through to processing advanced materials. The technology works by precisely controlling a number of different parameters that affect fluid dynamics and the shear forces experienced by these fluids. The technology has been designed from the outset with continuous flow processing capabilities with the scalability of processing depending on the volume of material required. For example, this could be a single Vortex Fluidic Device unit for niche applications in nanotechnology, or a parallel array of multiple units or a single large unit for much higher volume industrial applications.

Flinders Partners' Opportunity Development Director Mark Bruce indicted these industrial partnerships were crucial to transferring research from the laboratory to commercial applications.

Pandeniya

As planned shaft rehabilitation at Pandeniya has successfully been completed to a depth of 30 metres to the shaft floor. At the bottom of the shaft a further 39 metres of horizontal drives/offset shafts were encountered, these workings were not anticipated in the initial mine plan however have been cleaned out and mapped where safe to do so.

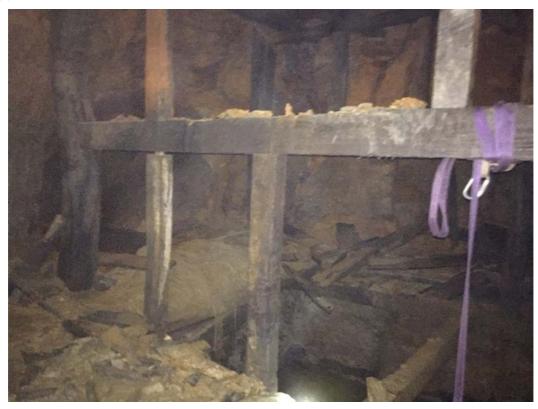


Figure 3: South Winze and lower Historical workings

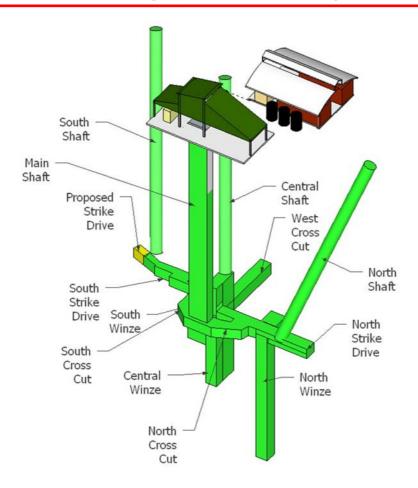


Figure 4: Schematic of Pandeniya mining development

Following cleanout and examination of these drives three older shafts were also found together with clear evidence of graphite vein stoping. The age and unstable condition of these old workings made them unsuitable for current use as it was considered to be unsafe for the Company's miners to use as a primary access.

These facts, together with the additional information supplied from the DHTEM, led to a change to the mine plan and the existing shaft is now being sunk a further 15 metres to gain access to the structures identified by the DHTEM and previous diamond drilling below the previously mined areas. To date the shaft has been advanced to 37 metres below the shaft collar.



Figure 5: Schematic of Pandeniya mining development

Final approvals were received from CEA (Central Environment Authority) to obtain the required blasting license for Pandeniya. The time to obtain the Blasting License was longer than anticipated as the application could not occur until the Industrial Mining License was awarded. External blasting contractors have been used in the interim however productivity is expected to improve dramatically now the license has been awarded and FGR will have full autonomy with our blasting activities.

Aluketiya

At Aluketiya Shaft H has been sunk to a depth of 22 metres. Between 12 and 15 metres a historical underground stope was encountered which caused significant delays to the shaft sinking efforts. During this activity the shaft liners hung up and in the process of freeing up the liners damage was done to three of the smaller concrete liners. This has now been remedied and shaft sinking re-commenced. The mine plan calls for the shaft to be sunk between 28 and 35 metres depth, depending on the ground conditions below the weathered and fresh rock interface. Mineralisation encountered in drill hole ALK11 is expected to be intersected while completing the Shaft H installation, this is supported by the stoping experienced in the unconsolidated material to date. A second target will be drilled up dip from the large intersection on ALK18 to assist in the mine planning to access that structure from Shaft H and this will require a development drive of approx. 30m.

Shaft J's head frame has been erected and the Company will commence the installation of the support equipment such as hoists, generators and compressors.

Amended mine plans will enable a longer term sustainable production and maximise the extraction of the ultra high grade (99.27% TGC) vein intersections as intersected in ALK18. With the additional prospectivity shown from the DHTEM it would have been unwise and short sighted not to have amended the initial plans.

This delay will not impact on the Company's growth plans for its graphene production as adequate quantities of third party material have been sourced while the Company transforms towards being a vertically integrated supplier of high grade graphite and large volume high specification quality graphene.



Figure 6: First trial set of 2.5m diameter shaft liners for Shaft J from FGR designed mould

DHTEM

Graphite is an excellent conductor of electricity, a property which makes it highly amenable to exploration using electrical techniques. Surface and airborne electromagnetic techniques have been used previously by FGR and other companies to search for graphite in Sri Lanka. The limitation of these techniques is that while presence of graphite can be determined, DHTEM can predict the location of veins in three dimensions.

GEM geophysics provided the field data acquisition services and Southern Geoscience provided the survey planning and data interpretation for the surveys conducted in August 2016.

Aluketiya

Eight diamond drill holes, that have been drilled by FGR over the previous 12 months, were surveyed. Table 1 below summarises the observed graphite mineralisation in all of the holes.

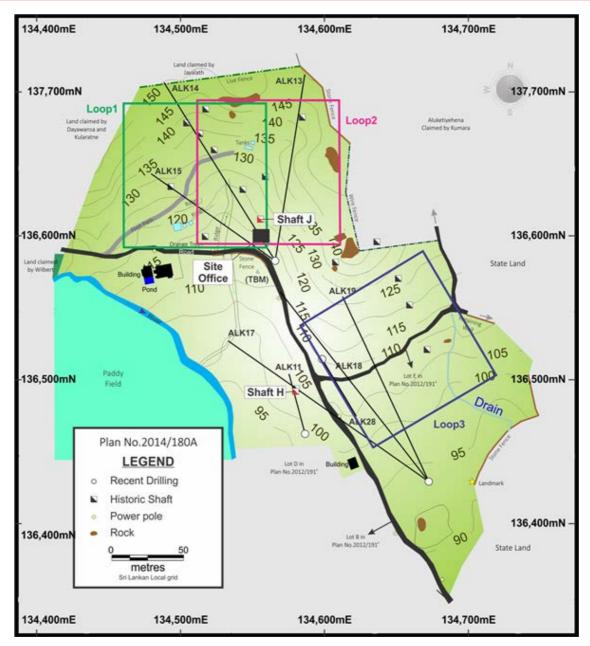


Figure 7: Showing the Aluketiya project with drill hole traces and transmitter loop locations



Hole ID	E_SLK	N_SLK	E_Local	N_Local	rL_Loca I	Dip	Azimut h	Dept h	Depth From	Depth To	Comment
ALK11	13459 0	13646 2	2030.4	1875.2	97	55	345	75	48.55 48.80 49.29	48.70 49.10 49.43	15 cm vein 30 cm vein 14 cm vein
ALK13	13456 1	13657 4	2009.7	1995.4	115	45	9	185.2	23.10 23.72 25.65 46.33	23.36 23.88 25.90 46.73	26 cm vein 16 cm vein 25 cm vein 40 cm vein
ALK14	13456 1	13657 4	2009.7	1995.4	115	45	328	206.5			No significant intersection observed
ALK15	13456 1	13657 4	2009.7	1995.4	115	45	305	149	34.65 34.76 75.78 77.14 78.64	34.70 34.85 75.98 77.23 79.04	5 cm vein 9 cm vein 20 cm vein 9 cm vein 40 cm vein
ALK17	13467 3	13642 4	2116.4	1842.1	94.5	45	305	240.8	100.78 101.41 102.70 108.56 208.94	100.84 101.41 5 102.70 5 108.57 208.94 4	6 cm vein .05 cm vein .05 cm vein 1 cm vein .04 cm vein
ALK18	13467 3	13642 4	2116.4	1842.1	94.5	45	322	237.2	116.68 117.31 118.34	116.82 117.65 119.49	15 cm vein 34 cm vein 115 cm vein
ALK19	13467 3	13642 4	2116.4	1842.1	94.5	45	335	200.5			No significant intersection observed
ALK28	13459 2	13649 7	2042.2	1927.1	108.3	45	149	135.4	26.55	26.85	30 cm vein

Table 1: Aluketiya Drill Results

The results of the DHTEM for drill holes ALK11, ALK17, ALK18, ALK19 and ALK28 are depicted in Figure 8 which shows the orientation of the conductors in both plan view and section view.

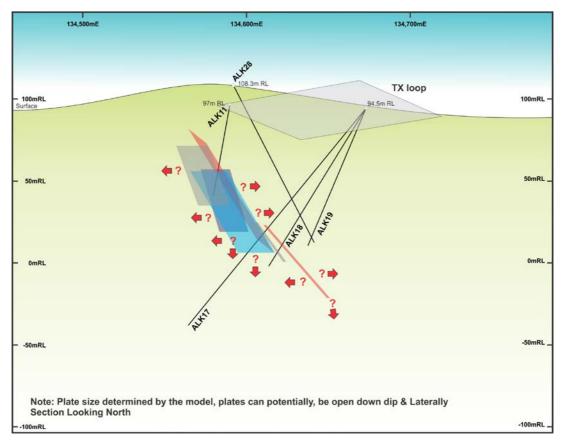


Figure 8: Plan and Section Views DHTEM ALK 11, 17, 18, 19 and 28

The results of the DHTEM for drill holes ALK13, ALK14 and ALK15 are depicted in Figure 9 which shows the orientation of the conductors in both plan view and section view.

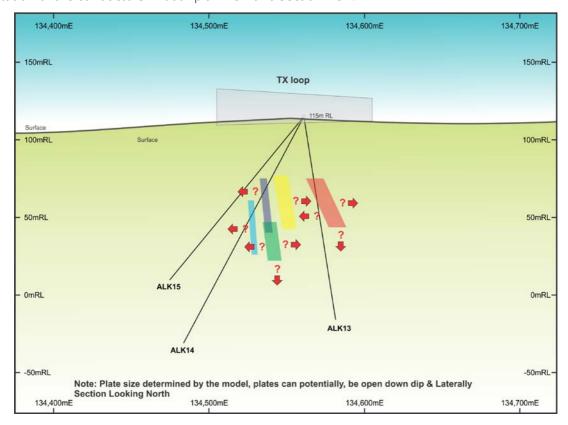


Figure 9: Plan and Section Views DHTEM ALK 13, 14 and 15



Pandeniya

At the Pandeniya project three holes drilled by MRL in 2014 were surveyed using DHTEM. Figure 10 shows the location of the holes and the transmitter loop.

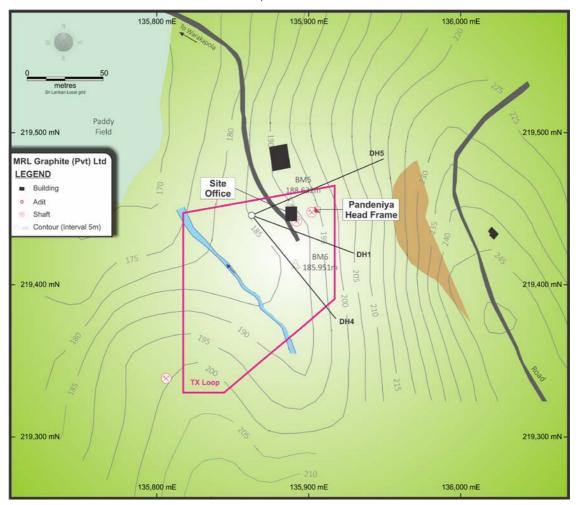


Figure 10: Previous drill holes and transmitter loop



Table 2 summarises the observed graphite mineralisation in each of the holes.

Hole	E_SLK	N_SLK	E_Local	N_Local	rL_Loca	Dip	Azimuth	Dept	Dept	Depth	Comment
ID					ı			h	h From	То	
DH1	13586	21944	4782.5	5164.0	189	55	109	125	91.62	92.31	69 cm vein
	0	5	1702.5	3101.0	105	33	103	123	97.00	97.94	94 cm vein
DH4	13586	21944	4780.5	5162.5	189	50	140	134	30.59	30.595	.05 cm vein
	0	5							35.78	35.785	.05 cm vein
									38.05	38.055	.05 cm vein
									38.68	38.685	.05 cm vein
DH5	13586	21944	4782.5	5165.0	189	48	67	141	58.14	58.145	.05 cm vein
	0	5	0						70.55	70.553	.03 cm vein
									71.61	71.612	.02 cm vein
									72.82	72.84	2 cm vein
									75.92	75.935	1.5 cm vein

Table 2: Pandeniya Drill Results

Figure 11 below shows a plan view and a section view (looking north) of the modelled conductors relative to the drill holes.

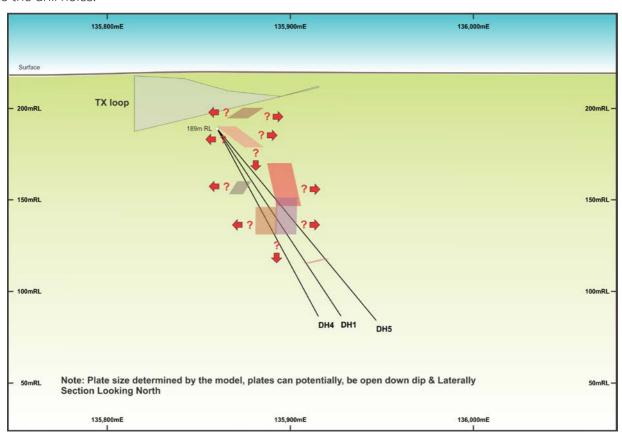


Figure 11: Plan and section view DH1, 4 and 5

As with Aluketiya the DHTEM shows the presence of plates within the drill hole confirming the observed graphite mineralisation as well as the presence of conductors not intersected by the drilling.



Future work

The DHTEM survey reveals that due to the abundance of off-hole anomalies there is more prospective graphite than initial drilling had identified. First Graphite will progressively confirm this with infill drilling targeting these anomalies and adjust the mine development plans as required to effectively set mining areas up for long term extraction. This may alter the timing of initial production however it will potentially provide the company with a longer term higher production rate from each shaft.

The off hole anomalies in ALK11 and ALK28 show there is further potential mineralisation close to Shaft H and to this end FGR has arranged for the diamond drill to work extended hours during the next month to provide this information to the mining engineering team as quickly as possible.

Supplies of High Grade Graphite Received

The Company is pleased to announced that it is in receipt of its first shipment of graphite in Perth, being material sourced from a third party producer in Sri Lanka. This premium quality graphite is earmarked for both conversion to graphene and for use in accelerating the establishment of the Company's position as a credible supplier to the premium graphite market.

Given the time that it takes to develop and ramp-up the 100% owned graphite mines, the Company has adopted a dual strategy of acquiring and marketing third party graphite in parallel to sourcing its material from its own mines. This will accelerate the establishment of a credible presence in the market as a reliable supplier of premium quality graphite to world markets rather than waiting until sufficient size stockpiles have been accumulated from its own mines. It will also accelerate the availability of graphene that can be supplied to potential customers, given the rapid progress with the commissioning of the graphene cell.

Central Hub Construction

FGR has commenced construction of a 600m² warehouse located at Warakapola to provide processing, maintenance and field office facilities for its surrounding mining and exploration activities. This Hub is a major step to ensure a cohesive approach for field and engineering support as production commences.

Engineered footings and tie beams have been completed with erection of the warehouse to commencing in late October.



Figure 12:

Warehouse footings and tie beams at the Warakapola hub



FGR's Managing Director Craig McGuckin said he was pleased with the quarter's progress for the Company as it marched towards production.

Mr McGuckin said First Graphite was making rapid progress towards its goal of becoming a substantial supplier of high quality-graphene in 2016.

"The progress on the Phase 1 250 litre production cell has been excellent," Mr McGuckin said, "We anticipate being able to provide bulk quantities of high quality graphene at commercially attractive prices.".

"While work continues on developing our own sources of high grade graphite we are able to source third party material for graphene production."

The December Quarter Program

FGR is now immersed in an active December Quarter, which includes:

- Continuing graphene unit research toward the optimum mix of power and electrolyte.
- Undertaking further development work on the methodologies for screening, washing and drying of the graphene being produced
- Continuing mine development at Aluketiya and Pandeniya
- Follow up drilling at Aluketiya and Pandeniya based on the targets identified in the downhole electromagnetic survey at these projects

Invest in Australian Resources - Konferenz Frankfurt, & Edelmetallmesse in Munich

The Company will be represented at the above conferences on the 1 and 3 November respectively.

IDTechEx Santa Clara 16-17 November 2016

Managing Director, Craig McGuckin, will be presenting at the above conference on 16 November 2016. His presentation will be "Toward the Commercialisation of Graphene: Using High Grade Vein Graphite in its production." His paper will be made available on the FGR website at the time of the presentation.



About First Graphite Ltd (ASX: FGR)

First Graphite is aiming to develop an underground mining operation to extract high-grade, crystalline vein graphite, which is unique to Sri Lanka. The Company holds exclusive rights to exploration licenses covering approximately 39,500 hectares in area, with historical workings located within nearly all license grids.

About Graphene

Graphene, the well-publicised and now famous two-dimensional carbon allotrope, is as versatile a material as any discovered on Earth. Its amazing properties as the lightest and strongest material, compared with its ability to conduct heat and electricity better than anything else, mean it can be integrated into a huge number of applications. Initially this will mean graphene is used to help improve the performance and efficiency of current materials and substances, but in the future it will also be developed in conjunction with other two-dimensional (2D) crystals to create some even more amazing compounds to suit an even wider range of applications.

One area of research which is being very highly studied is energy storage. Currently, scientists are working on enhancing the capabilities of lithium ion batteries (by incorporating graphene as an anode) to offer much higher storage capacities with much better longevity and charge rate. Also, graphene is being studied and developed to be used in the manufacture of supercapacitors which are able to be charged very quickly, yet also be able to store a large amount of electricity.

Nature of vein graphite

Sri Lankan graphite deposition model is best described from the 'bottom up': tension fractures formed in the metamorphic sediments, caused by the folding of the sediments, creating 'conduits' for the hydrothermal deposition of high quality vein graphite. Historically, mining of these veins has found the veins generally increase in thickness and grade quality with increasing depth. Graphite veins generally dip steeply at -70° to near vertical, enabling 'narrow vein' extraction mining techniques similar to those used on narrow vein, high grade gold deposits. The method commonly used is an overhead retreat stoping technique where the high grade vein graphite is mined and hauled to surface without contamination. The graphite selvages, in contact with the surrounding waste, is hauled to surface and stockpiled for upgrading. The balance of the waste is used to fill the floor of the stope.

Due to the nature of the vein graphite, it is anticipated vein widths of ~25cm, using narrow vein mining techniques can be economically extracted from underground operations.

For further information:

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Information in this report relating to Metallurgical interpretation, analysis, mineral distribution and recommendations has been compiled by Mr Chris Banasik, MAusIMM in consultation with Dr Slobodanka Vukcevic, Senior Metallurgist at Nagrom the Mineral Processors. Dr Slobodanka Vukcevic has sufficient experience and expertise relevant to this type of test work through her job experience and expertise and qualifies as a competent person in the field of metallurgy.

Information in this report relating to Exploration Results is based on information compiled by Mr Chris Banasik, MAusIMM working in consultation with MRL's Senior Sri Lankan Geologist who has 35 years of vein graphite experience in Sri Lanka. Their experience is relevant to the type of deposit under consideration. Mr Banasik is signing as competent person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Banasik consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

JORC TABLE 1 Report for Exploration Locations

Section 1 Sampling Techniques and Data

Criteria	Explanation
Sampling techniques	 Diamond core is collected and stored in core trays of 5m per tray. Vein graphite is readily identified visually (black in colour) and intersections recorded accordingly. Intersections will then be cut under the supervision of MRL's Senior Sri Lankan Geologist and prepared for transport to Nagrom (Australia) for analysis.
Drilling techniques	All future drilling will be undertaken utilising NQ Triple Tube (NQTT) drilling.
Drill sample recovery	Diamond core recovery is recorded between core runs by the geological crew in the Core Logging Record. The unconsolidated surface material will be drilled using rotary wash method until competent material is intersected
Logging	 All holes are logged on site by MRL geological personnel under the supervision of MRL's Senior Sri Lankan Geologist, using MRL's Core Logging Procedure Manual. Logging will record geological and geotechnical observations, and is undertaken on a continual basis throughout the entire drill hole.
Sub-sampling techniques and sample preparation	Half-core intersections of Vein Graphite will be submitted for analysis to Nagrom laboratories in Perth Western Australia. The remaining half-core is stored in the core boxes. Core & bulk samples may be provided to potential off-take parties.
Quality of assay data and laboratory tests	 All Vein Graphite core intersections will be analysed by Nagrom the Mineral Processors in Perth Western Australia. Nagrom will follow industry practice QA/QC procedures to ensure high quality sample assurance. Certified Sample Standards will be inserted routinely into sample analysis.
Verification of sampling and assaying	All diamond core will be logged and photographed by MRL geologists under the supervision of MRL's Senior Sri Lankan Geologist. Independent consulting geologist will visit the MRL operation sites on a regular basis to oversee QA.
Location of data points	All drill locations have been positioned using hand-held Garmin GPS systems. MRL has completed a full topographical survey of the Pandeniya – Bopitiya & Aluketiya areas. All drill collars will be geo-referenced to the Sri Lankan Transverse Mercator Projection.
Data spacing and distribution	Drill holes have been orientated in a position to intersect the expected vein mineralisation (based on historical shafts / adits and geophysical information) at the optimal angle for evaluation, whilst minimising surface land disturbance.
Orientation of data in relation to geological structure	Diamond Core Drill holes are designed to intersect potential graphite vein mineralisation perpendicular to strike, wherever possible, whilst taking into account expected deviation in dip and azimuth.
Sample security	Core Samples are collected and stored in core trays under the supervision of MRL geological crews and then transported at the end of each day, and secured in a locked container at the MRL site facility for further detailed logging. Security is managed by MRL's Senior Sri Lankan Geologist and the MRL country General Manager.
Audits or reviews	A review was undertaken by the consulting Geologist of all procedures, including retrieving of core samples from the core tube, through to logging and storage of core



Criteria	Explanation
	samples, during drilling activities. Consulting Geologist will undertake further reviews into the future.

Section 2 Reporting of Exploration Results

Criteria	Explanation							
Mineral tenement and	The Warakapola / Bopitiya / Pandeniya project exploration license areas are 100% owned by MRL							
land tenure status	Graphite (Pvt) Ltd. The exploration Licenses when granted have a two-year term which can be							
	renewed prior to the two-year anniversary.							
		icense No.	MRL Interest	Status	General Location			
		ML/A/HO/8416/LR2	100%	Granted	Western			
		ML/A/HO/9405	100%	Granted	Central			
			10070	G. G. I.CCG	Contract			
			T	T	T			
		EL/225	100%	Granted	Central			
		L/226	100%	Granted	Central			
		EL/228	100%	Granted	Central			
	 - 	EL/243	100%	Granted	Central			
		EL/262	100%	Granted	Central			
		EL/318	100%	Granted	Central			
		EL/321	100%	Granted	Central			
		EL/325	100%	Granted	Central			
		EL/326	100%	Granted	Central			
		EL/227	100%	Granted	South Central			
		EL/322	100%	Granted	South Central			
		EL231	100%	Granted	South West			
	E	EL/244	100%	Granted	South West			
Exploration done by	sta	anding and comply w	ith the reporting	requirements	ist all granted licenses are of the exploration licence. iya / Pandeniya project was			
other parties	 out by Geological Survey and Mines Bureau (GSMB) Technical Services (Pvt) Ltd with reports provided to MRL. MRL has established a regional office in the EL228 area to support the company geologists and underground exploration crews. Historical mining has taken place with several shafts and adits evident. MRL continues exploration in all license areas 							
Geology	 Warakapola / Bopitiya / Pandeniya / Aluketiya Geologically, the area covered by the selected grid units belong to the Wanni Complex of Sri Lanka. The Wanni Complex is mainly characterised by thick sequences of orthogneisses, comprising amphibolite, migmatitic, granitic and granodioritic gneisses. These rocks represent a series of antiformal and synformal structures. A characteristic feature of the exploration area is the alignment of identified abandoned graphite mines / pits within a NNW-SSE trending corridor, (GSMB 2013) 							
Drill hole Information	 All Diamond Core Drill holes are planned to be accurately surveyed for dip and azimuth using a GlobalTech Pathfinder multi-shot, electronic, down-hole survey tool. 							
Data aggregation methods	Intersections of diamond core containing vein graphite will be visually selected for analytical testing with accurate lengths recorded to ensure 100% of mineralisation is analysed and reported.							
Relationship between mineralisation widths and intercept lengths	 Planned Drill hole orientation is based on observations from historical shafts / adits and geophysics, and planned to intersect any vein graphite mineralisation as close to perpendicular as practical. 							
	• NA							
Diagrams	• NA	\						



Criteria	Explanation				
	results from any exploration activities.				
Other substantive exploration data	No other substantive exploration data is available at this time.				
Further work	 First Graphite Ltd continues to complete further site investigations on all licenses. Following the completion of progressive site investigations and evaluation the next phase of exploration for each location will be undertaken and reported. Land access agreements continue at Pujapitiya, Dedigama and Hikkaduwa Further drilling is planned at Aluketiya, Pujapitiya and other license areas as land access is obtained. 				