30 OCTOBER 2015

## Triton Minerals Ltd

*Holder of the world's largest known combined graphite-vanadium resource*

**ASX:** TON
**ABN:** 99 126 042 215

**Directors & Management**
Chris Catlow – Non-Executive Chairman
Brad Boyle – CEO & Managing Director
Alf Gillman – Technical Director
Alan Jenks – Non-Executive Director
Paula Ferreira - Non-Executive Director

Paige Exley – Chief Financial Officer & Company Secretary

**Head Office:**
Unit 1, 256 Stirling Highway
Claremont
Western Australia 6010
**Tel:** +61 8 6489 2555
**Fax:** +61 8 9388 1252
**Email:** info@tritonmineralsltd.com.au
**Web:** www.tritonmineralsltd.com.au

**Capital Structure** as at 31 March 2015
376,549,422 Shares
23,164,146 Unlisted Options
15,000,000 Unlisted Performance Rights

**Cash at 30 September 2015**
$3.1M

**Market Cap at 30 September 2015**
$90.5M

**Top 20 Shareholders at 30 September 2015**
Hold 40.78%

# QUARTERLY ACTIVITIES REPORT

***For the period ending 30 September 2015***

## PROJECTS OVERVIEW

### Graphite Operations - Mozambique

### Balama North project

- Rubicon Resources (ASX:RBR) engaged to provide key support services in Mozambique through RBR's Mozambique subsidiary, PacMoz Lda.
- Feasibility Study activities & drilling underway, environmental and social impact assessment progressing well.
- Jumbo flake graphite located at Nicanda Hill (P66 zone).
- TMG suitable to produce graphene and battery grade spherical graphite.
- DUAT application and early works program progressing.
- Metallurgical test work program is well advanced.
- Triton Mozambique Development strategy outlined.
- Triton rapidly advancing Nicanda Hill towards production.
- Triton seeking to become a market leader in low-cost-production, high grade graphite.

### Ancuabe project

- Coastal and Environmental Services complete dry season review for Environmental Impact Study at Ancuabe project.
- Drill rig mobilised to site for initial drill program.
- Substantial graphitic mineralisation confirmed (T12 Mineralisation).
- Environment Impact Assessment (EIA) continues on schedule.
- DUAT applications on schedule.
- Initial feasibility study commenced.
- Early works commenced with 15km all weather access road to sealed highway completed to T12 site.

### Balama South project

- Reconnaissance geological mapping & sampling program completed.
- Metallurgical and mineralogical analysis underway.

### Joint Venture Operations

### China

- China JV factory site visit completed.
- TMG product testing underway.

### Mozambique

- Mozambique JV factory site location soon to be finalised.

### Australia

- Fraser Range North project surrendered.

## CORPORATE OVERVIEW

- Paula Ferreira appointed Non-Executive Director.
- Change of registered address and principal place of business.
- General Meeting held 22 October 2015.

The quarter ending 30 September 2015 was another productive quarter for **Triton Minerals Limited** (ASX: TON, **Triton** or **Company**). A considerable amount of material activity was reported both at a corporate level and across Triton's operations, including:

- Triton Mozambique Graphite (**TMG**) suitable to produce graphene, battery grade spherical graphite and a range of enhanced graphite products;
- Jumbo flake graphite located at Nicanda Hill (P66 zone); and
- Substantial Graphitic Mineralisation confirmed at Ancuabe (T12).

These highlights, together with other material activity announced during the quarter, are discussed in more detail below.

## GRAPHITE OPERATIONS – MOZAMBIQUE

### A. Balama North Project

1. *Material Activity during the quarter*

#### 1.1 Engagement of Rubicon Resources

During the quarter, Triton announced the formation of a strategic partnership with Rubicon Resources Ltd (**Rubicon** or ASX: RBR) to provide key support services in Mozambique.

Triton engaged Rubicon as its preferred Mozambique service provider to assist in key aspects of the development and operational phases of its three Mozambique graphite projects (*Nicanda Hill, Ancuabe and Pemba*).

Rubicon, through their wholly owned Mozambique subsidiary PacMoz Lda (**PacMoz**), will provide Triton with a broad range of in-country support services including; permitting, licencing, business administration, human resources (including recruitment, contract management, training and immigration) and company secretarial support.

Rubicon intends developing a medical services business in Pemba, which will be able to provide further support to Triton with the provision of pre-employment medicals and periodic medical support. Rubicon is also assisting with logistical services as Triton heads rapidly towards graphite production.

#### 1.2 DUAT

Triton confirmed that the DUAT applications (right to use and exploit land) in Mozambique are progressing well, as the public consultations with the surrounding villages around the Nicanda Hill graphite project have now been completed. Subsequently, the editals (reports) have been completed and submitted to the Governor of the Cabo Delgado Province for provincial approval. Following this the DUAT application will be submitted to the Council of Ministers for final approval. Triton is expecting that the DUAT will be approved by the end of 2015.

#### 1.3 Environmental and social impact assessment (ESIA)

Triton confirmed that Coastal and Environmental Services (Pty) Ltd (**CES**) has completed both the wet season and dry season baseline studies which are key components of the ESIA process.

The Ministry of Coordination of Environmental Affairs (**MICOA**) has completed their site visit at the Balama

North project and the Environmental Pre-viability Report and Scope Definition (**EPDA**) and terms of reference disclosure documents will shortly be submitted to the Mozambique government.

Public consultations have been completed in the five surrounding villages with representatives from Triton, CES and the Government present.

CES are targeting to complete and submit their final ESIA report to the Mozambique Government by early December 2015. Once submitted, the report will be reviewed accordingly and is expected to be finalised and approved by early 2016.

### 1.4 Nicanda Hill Definitive Feasibility Study (DFS)

During the quarter, Triton announced that the DFS is progressing well at the Nicanda Hill resource. The DFS drilling program at Nicanda Hill has progressed well with a limited number of hydrology, sterilisation and water supply drill holes to be finished shortly.

Triton confirmed assay results from the resource infill drilling program are being received from the Genalysis laboratories. These results will be reviewed before being used to confirm the current resource interpretation and to establish the optimum grade control pattern within the limits of the Years 1 to 10 design pit.

Another key objective of the additional drilling program is to provide sufficient information to underpin an upgrade in resource classification of material significance and thus form the basis of developing a substantial quantity of proven graphite reserves to both underpin the project economics and reduce the risk profile.

Triton confirmed that the design for the ROM pad, graphite processing plant, flow sheet and site layout are almost complete and ready for the final phase of the DFS assessment. Please refer to the Triton website for an overview of the plant design and mine site layout, using the following website link (www.tritonmineralsltd.com.au/links-and-gallery/videos).

### 1.5 Jumbo flake graphite identified at Nicanda Hill

During the quarter, Triton announced that as a result of the current Definitive Feasibility Study (DFS) drilling program, the Company has identified a substantial jumbo flake graphite zone at Nicanda Hill - known as “P66”.

The new graphitic zone is in addition to the initial JORC 2012 compliant graphite resource announced on 21 October 2014. The Company verifies that diamond drill hole, GBND0055, intersected strong graphitic mineralisation with extensive jumbo flake graphite present in the drill core.

Triton completed a number of additional drill holes both north and south of the original P66 intersection, which have confirmed the continuity of jumbo flake graphite mineralisation over a considerable distance.

The P66 zone is located to the north-west and outside of the previously defined graphitic mineralisation at Nicanda Hill and was discovered whilst testing a geophysical anomaly located outside the known resource footprint (refer to Figure 1).

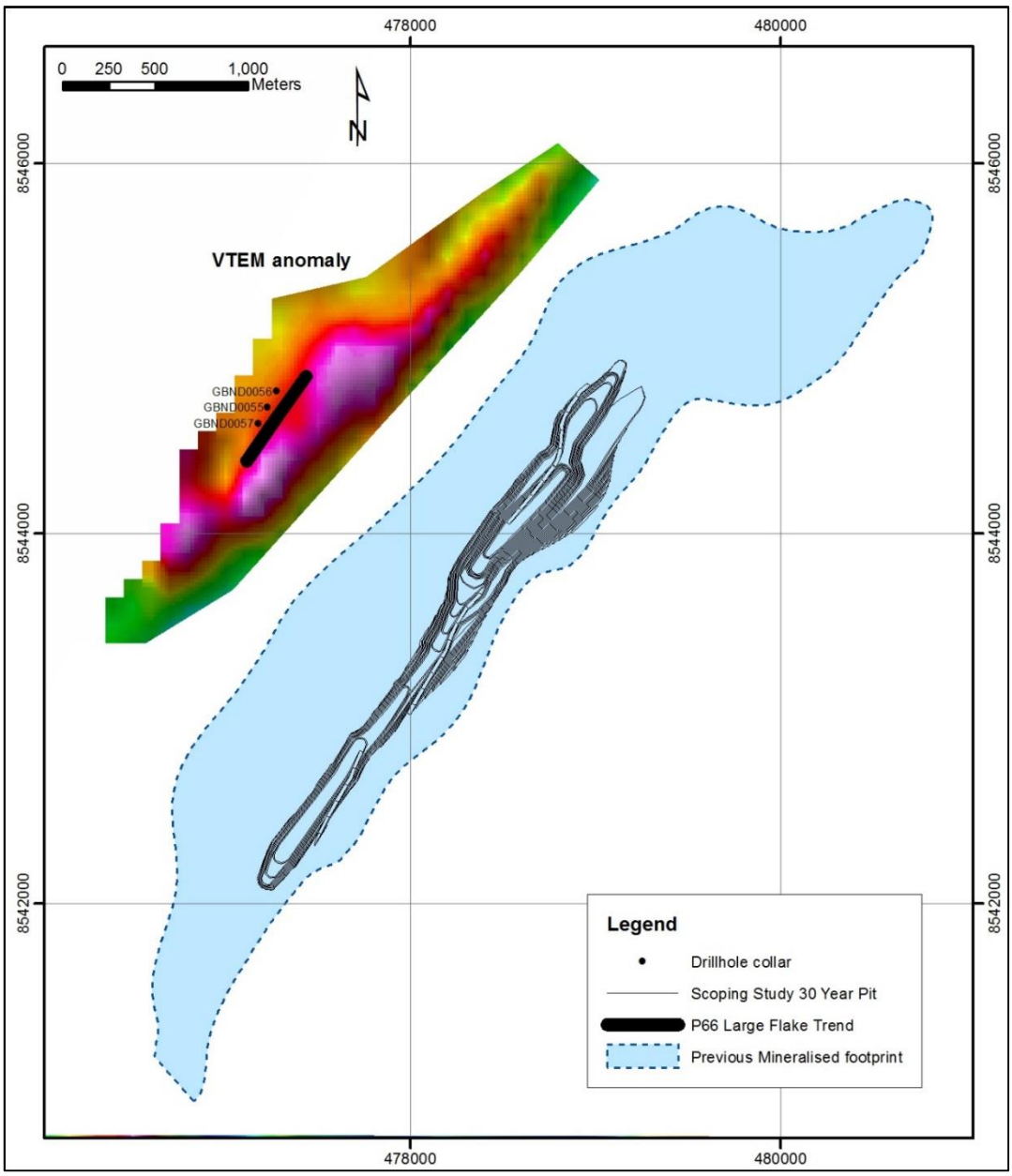


**Figure 1.** Overview map of the graphite mineralisation footprint and the new P66 jumbo flake zone at the Nicanda Hill project.

Based on the previous strong correlation demonstrated between the VTEM anomalies and the associated graphite drill intersections at Nicanda Hill, Triton is confident that the correlation will continue at the P66 zone, which could amount a substantial mineral resource of jumbo flake graphite. The geometry of the new graphitic zone is yet to be fully defined and additional exploration work and

drilling will be completed by Triton in order to obtain a better understanding of the true dimensions of the P66 graphite zone and to define a mineral resource. The zone has been confirmed in drill hole GBND0056, which is located 100m to the north of drill hole GBND0055. Drill hole GBND0056 ended at 152m in good visual graphite mineralisation, so there is scope to extend the zone at depth if required. Drilling of drill hole GBND0057 is currently underway.

Visual inspections of the drill core from the P66 zone shows a high volume of large, jumbo and super-jumbo flake graphite, that appears to readily separate on the outer surface of the drill core samples (Figure 2).

Figure 2 shows examples of super-jumbo graphite flakes liberated from drill core samples found in the P66 zone. The scale clearly shows that the graphite flakes obtained from the Nicanda Hill samples are well in excess of the 2000µ (2mm).

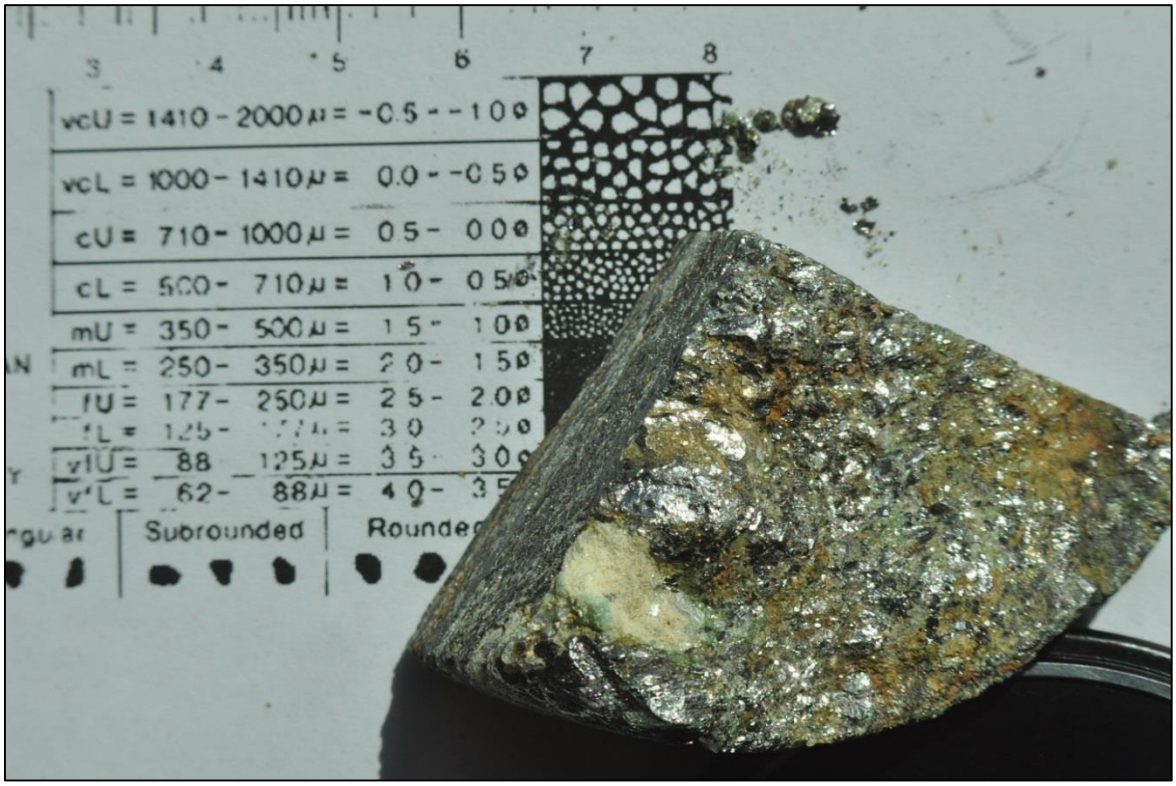


**Figure 2.** Observed graphite flakes obtained from drill core from the P66 zone (in excess of 2000µ)
Sample is from GBND0055 approximately 35m downhole

The Company believes that, based on the visual inspections of the drill core samples obtained from the P66 zone, that the material has a number of physical similarities to the graphite mineralisation identified at the Company's Ancuabe project (refer Figure 3). These similarities include the very large graphite flakes and coarse gneissic texture associated with higher metamorphic grade.

The discovery of the P66 zone is an exciting and economically significant outcome for Triton. The strong presence of jumbo flake graphite at Nicanda Hill will complement the wide range of the graphite flake sizes, including fines, medium and large flakes, making it one of the most unique graphite deposits in the world and possibly the best large volume high-quality graphite resource in Mozambique.

This is a very exciting development for Triton, as the P66 zone now provides Triton further opportunities and greater flexibility to increase the TMG product range, to meet current off-take demands and to potentially supply to a larger range of graphite end users across the globe. The jumbo flake graphite will provide additional benefits for Triton, once commercial graphite concentrate production and enhanced graphite products commence in the near future.

Jumbo flake graphite attracts a premium price in the graphite market of more than US$2,000 per tonne. The addition of the jumbo flake zone is likely to have very positive impact on the overall economics of mining operations at the Nicanda Hill deposit.

The drilling was undertaken as part of a comprehensive DFS program which includes resource infill drilling within limits of the Year 10 pit perimeter, hydrology (pit dewatering and process water supply), test pitting, pit geotechnical and sterilisation.

As previously announced on 11 May 2015, the results from the resource infill drilling program will be used to confirm the current resource interpretation and to establish the optimum grade control pattern within the limits of the Years 1 to 10 design pit.

Further, this additional drilling will also provide Triton sufficient information to underpin a partial but significant upgrade of the mineral resource from indicated to measured classification. The reclassified resource material will then form the basis of developing a substantial quantity of proven graphite reserves to both underpin the project economics and reduce the risk profile.

### 1.6 Early works program (EWP)

Triton's EWP allows for the implementation of project development activities prior to the formal granting of the mining licence. The EWP strategy is designed to accelerate the construction and commissioning phases of the mine and plant. EWP activities include road access and process water supply.

**Road Access** - In order to improve vehicle access and safety during construction and operations, modifications to the project site access road are planned. The Department of Road and Infrastructure (DRI) has provided written approvals for this road construction work. The current turn-off to the Nicanda Hill project is located at the Mapapulo village and is fortunately located on a newly constructed sealed main road, thus signifying Triton will only have 10km of maintained gravel haul roads between the sealed main road and mine site.

The sealed road is considered to be critical by Triton, as a short distance to the west of the Mapapulo

village, the main road reverts to a gravel road which is in poor condition and not suited to regular traffic, least of all heavy transport vehicles, heading towards either the Pemba or Nacala ports.

**Water Supply** - As a result of the hydrological studies currently being undertaken and the completion of a Light Detection and Ranging (**LIDAR**) survey, a number of water sourcing and large-scale on-site water catchments and storage areas appear to present an optimum water solution which is now being investigated.

## 1.7 Metallurgy

During the quarter, Triton confirmed that the DFS metallurgical test work program is well advanced with a bulk sample being processed, assessed and refined at the SGS laboratories in Perth. The program is designed to refine and enhance the flow sheet design to optimise the established high recovery rates and high graphite concentrate grades of the flotation process and they are to be adopted at the Nicanda Hill processing plant. This will ensure the most cost effective and efficient graphite recovery process is used during the large scale commercial production of the high quality graphite concentrate.

Triton continues to look to expand the TMG product range and as such work is now being undertaken by Independent Metallurgical Operations (**IMO**) to understand a full range of the graphite concentrate physical characterisation properties, including electrical, thermal, density and laser sizing. Triton is reviewing various metallurgical tests to assess applications and diversification of the TMG concentrate, helping to expand Triton's market presence as a vertically integrated graphite company.

**Figure 3.** The column float cell test setup at SGS Laboratory, Perth

## 1.8 Battery grade spherical graphite produced

Triton confirmed initial tests undertaken on typical Nicanda Hill flake graphite concentrate by a highly reputed American-based laboratory, using jet milling (spheroidisation) equipment, has successfully produced spherical graphite (Figure 4).

Results to date are considered very encouraging and further testing will continue to optimise performance and recoveries rates.

Spherical graphite has the potential to substantially increase the range of TMG products and to enhance the future revenue stream of the Company. Triton will now review the additional options available and consider the benefits of incorporating a scaled production process of spherical graphite into future product streams.

Nicanda Hill flake graphite concentrate was utilised in the initial tests due to the presence of the naturally occurring high purity finer flake material. The benefits of using this naturally-occurring material directly, is the reduction in the time and costs required to grind the concentrate particles to the required size.

The initial milling tests (using a patented process (Figure 5) was applied to a sample of Nicanda Hill flake graphite concentrate with an average feed size of less than 100 microns (-140 mesh). The Company considers the outcomes of this initial test to be very positive with the successful production of a wide range of spherical graphite particles ranging from 5 to 40 microns.

The spherical graphite industry utilises a standard deviation system for classifying particle distribution and they have found that the smaller spherical graphite particle size will create a larger surface area which has a higher density and will increase storage capacity potential of the graphite particle.

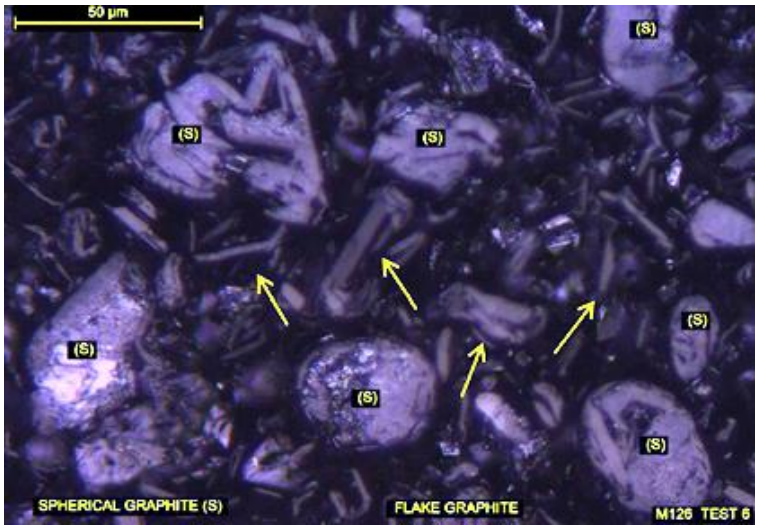


**Figure 4.** Polished section of a graphite concentrate using high magnification oil immersion optical microscopy

Triton confirmed the spherical graphite produced in these initial limited tests consisted of an average of

90% distribution at <35 microns, 50% distribution at <13 microns and 10% distribution at <4.5 microns. The spherical graphite was produced by patented air powered jet milling equipment.

Research has found the spherical graphite particle size for Li-ion batteries are split into two main categories. The Li-ion course sizing battery requires spherical graphite with particle sizes ranging from 25 microns to 48 microns, whilst the fine sizing battery requires spherical graphite with particle sizes ranging from 3 microns to 25 microns. Therefore, these initial tests demonstrate Triton's Nicanda Hill graphite is ideally suited for the creation of the spherical graphite and use both categories of the ever growing Li-ion battery market.

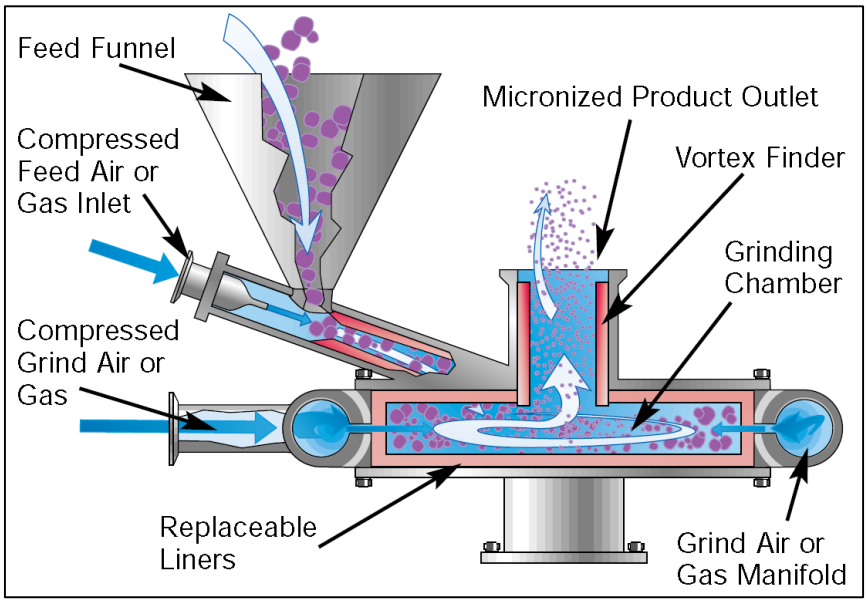


**Figure 5**. Overview of the jet milling method utilised to produce the Spherical graphite.

### 1.9 Graphene Oxide and Graphene produced

During the quarter, Triton announced that in tests conducted by a Government-sponsored laboratory in Singapore, Graphene Oxide has been successfully produced from various graphite concentrate grades of TMG product.

Commercial-grade Graphene Oxide was readily produced from a broad range of TMG concentrates, using the standard extraction methods. These initial results are considered by Triton to be encouraging.

In these industry-standard production runs only 1.5 grams of TMG concentrate was required to produce approximately 250ml of high concentration graphene oxide solution.

Research has found that graphene oxide solution is sold commercially in a diluted form (concentration at 4mg/ml) and can sell for of up to $400 for 250ml. Triton considers that the economics of producing graphene oxide and subsequently graphene from TMG are very encouraging.

The Company will continue to explore opportunities to refine the production of Graphene Oxide. As the predicted global demand for graphene oxide and graphene grows, Triton is well positioned to help meet that supply demand, with the ability to produce high purity and volume of graphite concentrate.

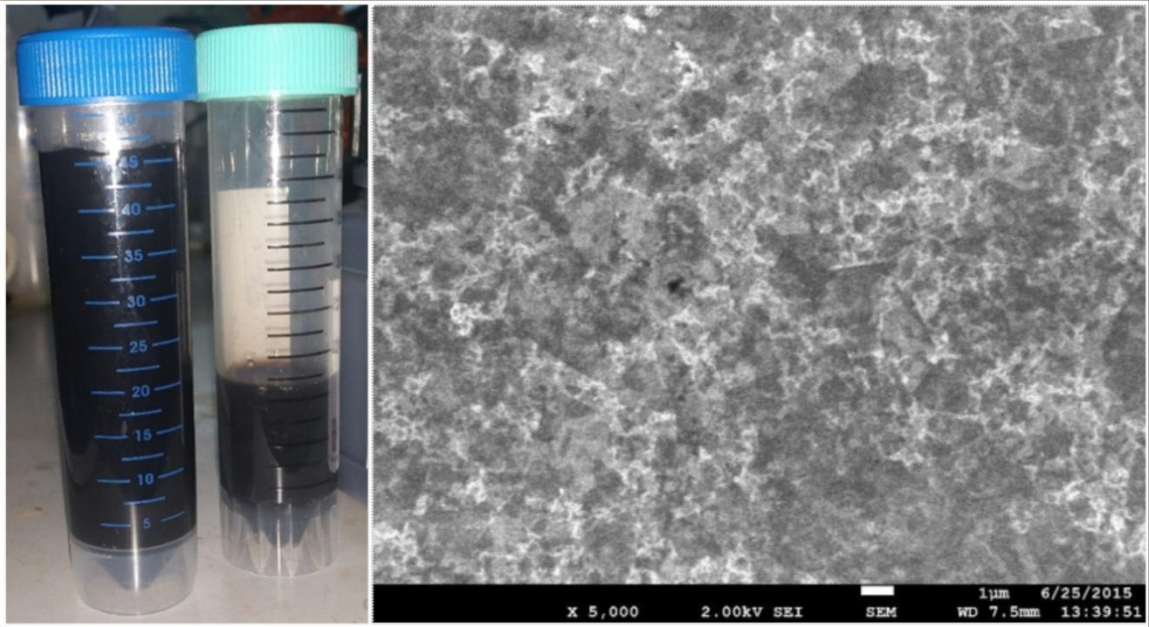


**Figure 6.** Image of the Graphene Oxide solution (left) created from TMG concentrates. SEM Imaging of fine Graphene Oxide flakes (right) created from TMG concentrate. The size of the flakes ranged from approximately 100 nm to 3 µm.

Triton also confirmed the same Singapore laboratory successfully created Graphene powder from the TMG products by simply reducing (drying) the TMG Graphene Oxide solution. Once the Graphene powder has been created it is actually insoluble in water.

**Figure 7**. Example of reduced Graphene Oxide powder (www.indiamart.com/united-nanotech/industrial-chemical.html)

## 1.10 Triton Mozambique Development Strategy

During the quarter, Triton announced a concept-level internal economic assessment, undertaken by the Company to establish the parameters for the DFS financial modelling, which confirmed the economic robustness of Triton's strategy of producing and exporting high-value graphite products directly from its integrated Nicanda Hill operations in Mozambique.

Triton believes some of the key benefits of value-adding of the TMG products on site at Nicanda Hill include the use of established mine infrastructure, power and water.

These combined benefits would help to reduce capital and operating costs for the joint venture project and the in-country value adding process is aligned with the current objectives of the Mozambique fiscal and mining regimes.

Triton's internal modelling shows that while the export of graphite concentrate alone can be very profitable in ideal future market circumstances, the financial returns from in-country value adding, by contrast, provides for a more rapid return on investment and vastly increased profit margins in the near (1-2 year) term, by a factor up to 5 to 10 times, in the corresponding graphite market conditions.

Triton has confirmed that the production and export of high value products, such as graphite composite material, graphite sheets and foils, spherical graphite and possibility graphene, which are currently in high demand in the broader and larger energy storage and electronics markets offers the Company the opportunity to enjoy stronger financial returns several quantum higher than the export of graphite concentrates alone.

Benefits of this strategy include:

- Significant tax and import/export incentives that are not available to mining-only operations.
- Integrated DFS financial modelling will include mine-gate concentrate production costs rather than FOB costs.
- Integrated DFS financial modelling will incorporate value-added sales prices which can be greater than US$2,500/tonne for expanded graphite, US$6,000/tonne for composite graphite material and up to US$50,000/tonne for graphite foils (for which Triton will share propriety and patented technology to produce).
- Longevity and certainty of supply from the world's largest known high grade graphite deposit to fulfil 20 year (2 million tonnes) binding off take with Yichang Xincheng Graphite Co., Ltd (YXGC) of graphite concentrate, for both expanded and composite graphite products.

- Binding joint venture agreements with YXGC to produce composite graphite products generates an internal supply demand for the TMG which is both independent and not reliant on the broader global graphite market.

- Ability to produce a high quality, competitively-priced, full range of flake graphite concentrate grades and sizes that can be customised for end user requirements.

- Ability to produce high quality enhanced graphite products that can be customised for end user requirements.

- Ability to produce competitively-priced spherical graphite on site at production levels that can be customised to suit market requirements and demand.

- Wastage of concentrate in processes, such as spherical graphite production, can be as high as 50%. By producing spherical graphite on-site, only the high-value product will be transported to clients. The costs of transporting concentrate destined for off-shore spherical graphite production, of which up to half will be discarded as waste, are thus avoided.

- The waste component from spherical graphite production at Nicanda Hill will be re-cycled into high-value composite graphite products, so that all components of TMG are used.

- The current Nicanda Hill DUAT application will incorporate the spherical and enhanced graphite products factory facilities, such that a separate DUAT application will not be required.

- The current Environment Impact Assessment (EIA) application will incorporate the factory facilities at Nicanda Hill.

- The factories and concentrator will share the same energy and water sources, thus avoiding duplication of capital and operating costs.

- Superior infrastructure and access compared to peers, including close proximity to regional capital of Montepuez (<20km to project), mains power, water and telecommunications, a new sealed public road within 8km of the Nicanda Hill deposit, directly connecting to Pemba and Nacala port facilities.

### 1.11 TMG Products

During the quarter, Triton announced that the Company is rapidly becoming a market leader by positioning itself to produce from two superior quality projects – from the world's largest known high grade graphite deposit at Nicanda Hill and from the renowned Ancuabe area which is known for the world's best quality and flake graphite distribution. Triton aims to produce high quality graphite

concentrates in a full range of flake sizes and to produce broad range of enhanced graphite products (Figure 8).

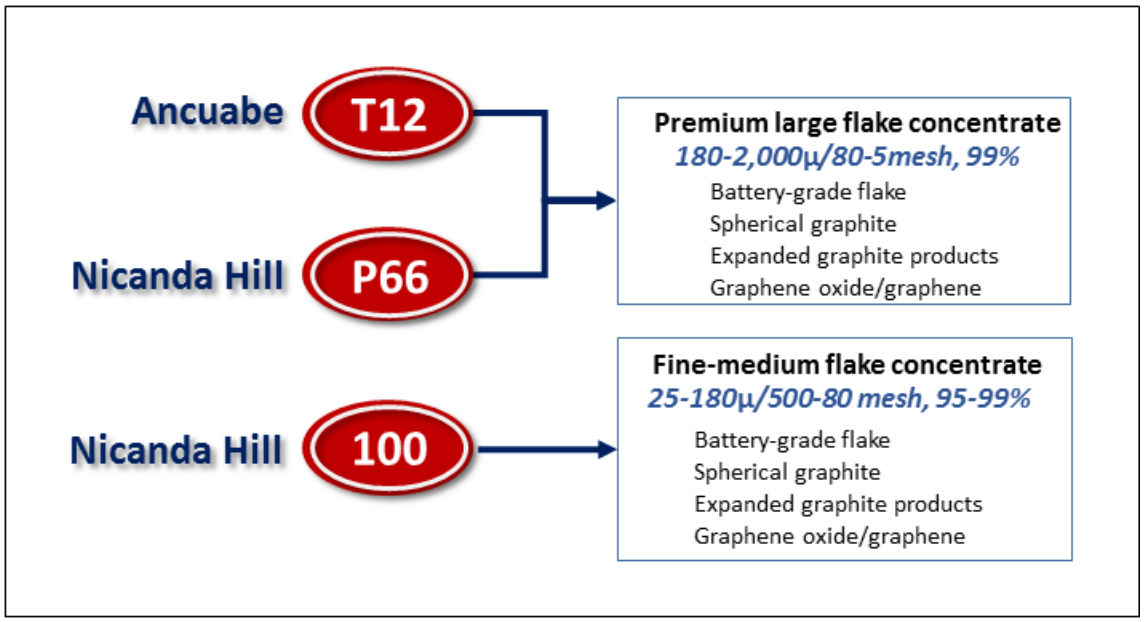


**Figure 8.** Overview of the currently targeted TMG product range, flake sizes and graphite applications

These two world class graphite projects are complemented by the newly discovered P66 zone at the Balama North project. TMG is located in northern Mozambique and is unique as the graphite readily liberates to very high purities through traditional flotation methods.

Triton confirms the bulk sample test work being undertaken at SGS Lakefield, Perth on standard Nicanda Hill graphite material (100) has achieved high recovery and purity results. The latest test results have confirmed the Nicanda Hill graphite concentrate can be readily upgraded to **99%** purity through simple flotation.

Both Nicanda Hill and Ancuabe graphite materials have achieved the highest levels of quality and purity without the need for chemical leaching, thus reducing the overall production costs and increasing TMG product options.

The demonstrated high quality of the TMG means Triton has the flexibility to customise and produce a broad range of graphite concentrates and enhanced products for a diverse global market, as shown in Figure 9 below.

**Figure 9:** TMG product range

TMG is unique and provides Triton the ability to produce a wide range of high quality graphite products, including a full range of high grade flake graphite concentrates with purities of up to 99% TGC, graphite composite material, graphite sheets and foils, spherical graphite and graphene to cater for a globally diverse range of end users.

The high quality nature of the TMG products and low technical risk combined with the strong support of the Mozambique Government allows Triton to focus on rapidly advancing all the projects and operations in Mozambique, with a particular focus on in-country value adding and premium quality flake concentrates. This strategy aligns with the fiscal and mining regimes of the Mozambique Government and offers the Company the advantage of obtaining a number of development incentives and financial rebates.

Triton's business model that embraces the in-country value adding to create spherical and enhanced graphite products at Nicanda Hill, in conjunction with the production of graphite concentrates, is considered to be the most logical and more economically sound path forward, as it provides for greater flexibility to customise products and the ability to utilise the established and future infrastructure, thus maximising the value of the TMG products.

As a result of the encouraging recent results with TMG products, Triton is now reviewing options to expand the scope of the current DFS to include the P66 zone, the vertical integrated facilities at Nicanda Hill and subject to further exploration success, potentially include the Ancuabe project.

Triton continues to establish TMG as the global graphite-industry benchmark, by aiming to offer the world's lowest cost and most diversified graphite product range together with the longevity of a reliable supply of **premium quality flake graphite.**

## 2. *Material Activity subsequent to the quarter*

### 2.1 Positive Metallurgical Results for P66

Subsequent to the quarter, Triton announced that initial metallurgical test work on the P66 zone from Nicanda Hill material confirmed the substantial presence of large graphite particle sizes.

Initial sighter flotation test work has been completed by SGS Lakefield Oretest Pty Ltd (Perth) on a 10kg composite core sample obtained from the P66 zone, which is located to the north west of the main Nicanda Hill prospect.

The key objective of the testing was to ascertain the liberation qualities of large flake graphite, such that a successful outcome would justify a more comprehensive flotation test work and concentrate production program.

Initial metallurgical test work carried out on core samples from GBND0055 (the first hole drilled at the P66 zone), confirms the substantial presence of large liberated flake graphite particles.

The large flake graphite in the P66 sample was readily liberated by crushing, grinding, rougher and cleaner flotation, with no additional regrind required. Flotation tests confirm that **53%** of the discrete mass graphite particles are larger than **150µm (+100 mesh)** (Table 1).

| MICRON | MESH | DISCRETE MASS (%) |
|---|---|---|
| **>300** | **50** | **12.6** |
| **150-300** | **100-50** | **40.2** |
| **75-150** | 200-100 | 25.0 |
| **<75** | 200 | 22.2 |

**Table 1.** P66 - Size by assay of flotation feed.

A concentrate grade of 96.1%TGC achieved at a recovery of 97.4% with a head grade of 11%TGC.

These initial results on the P66 zone graphite samples are considered by Triton to be encouraging and justify the progression to a comprehensive metallurgical test work program and bulk concentrate production run.

The confirmation of the large and jumbo size fractions of high grade graphite flakes recovered from flotation is consistent with the mineralogical observations. It is expected that this will improve the economic returns from the Balama North project as the larger size flakes will raise the average basket sale price for the graphite concentrate sold from Nicanda Hill.

Triton is currently waiting on the assay results for the additional P66 exploration drilling.

Optimization of the metallurgical process is expected to further enhance the quality of the final product concentrate. The Company is reviewing options to determine whether the graphite concentrate from the P66 zone can be further upgraded through flotation. Triton is aiming to obtain similar purity levels to those recently achieved with Nicanda Hill, that being in excess of 99%TGC, without the use of acid leaching.

Triton considers the initial metallurgical results to be a highly encouraging outcome and is optimistic of receiving further positive results with the completion of additional metallurgical test work.

## B. Ancuabe Project

*1. Material Activity during the quarter*

### 1.1 ESIA

During the quarter, Triton confirmed that Coastal and Environmental Services (Pty) Ltd (**CES**) have competed the dry season review which is the first key component of the study at the Ancuabe project. CES specialists are now completing further assessments of flora, fauna, natural resources and agriculture, water quality, fish, geohydrology, noise assessment, traffic and air quality. Triton confirms the ESIA continues to progress well and is on track to be completed by June 2016.

### 1.2 Exploration program

The high grade and exceptional quality of the Ancuabe graphite has been proven in precursor exploratory work.

A total of 10 VTEM-based targets, located in Prospect Area 1 (Figure 10) will be tested in the first pass “proof of concept” drilling program. The key objective of the program is to confirm that graphite, and no other conductive material, is responsible for generating the larger VTEM responses.

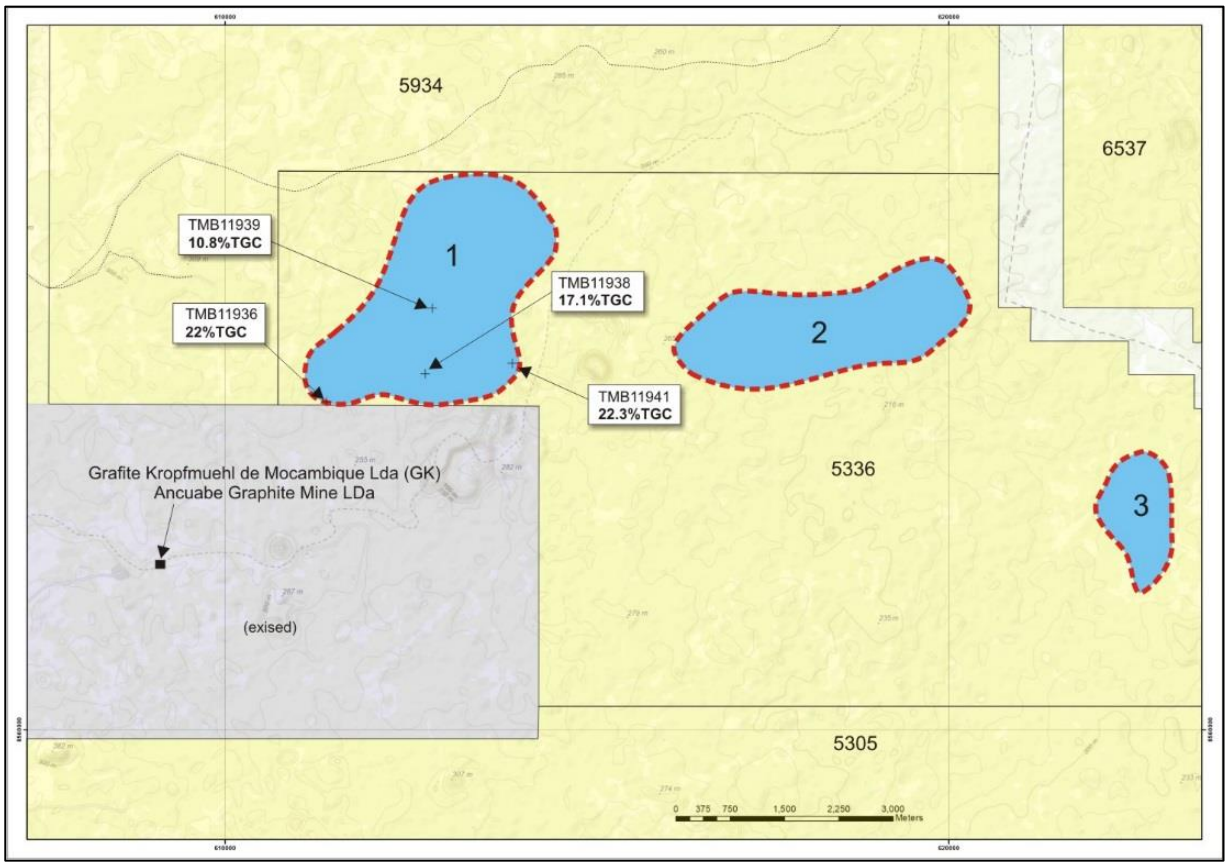


**Figure 10.** Ancuabe prospect areas

## 1.3 Drilling program commenced

During the quarter, Triton announced the commencement of a limited initial drilling program designed to test a number of VTEM-based targets at Ancuabe.

Access to some drill targets has been restricted due to the rough terrain and heavy vegetation, so Triton mobilised a D6 bulldozer to site in order to create the relevant assess tracks.

Triton confirmed that earthworks, carried out in clearing and preparation of some drill pads, has exposed limited graphitic mineralisation at surface, which includes very high grade and jumbo flake graphitic material (Figures 11 and 12).

These near-surface finds confirm the previous identification of graphitic outcropping. The Company is hopeful that the drilling will intercept further graphite mineralisation within the main target areas.

Although the initial evidence to date is considered to be encouraging by Triton, the delineation of a potential economic resource will require a more extensive drilling program over the next 6-12 months.

Based on the historic mining in the region, the outcropping and surface mapping to date, Triton believes

the resource style of graphite mineralisation at Ancuabe is likely to be very high-grade, relatively low-tonnage with flat-dipping graphite zones. This is in stark contrast to the Nicanda Hill style of graphitic mineralisation (high grade, very large tonnage, steep dipping).

This interpretation of the mineralisation style at Ancuabe will be tested properly with the current and future drilling programs.

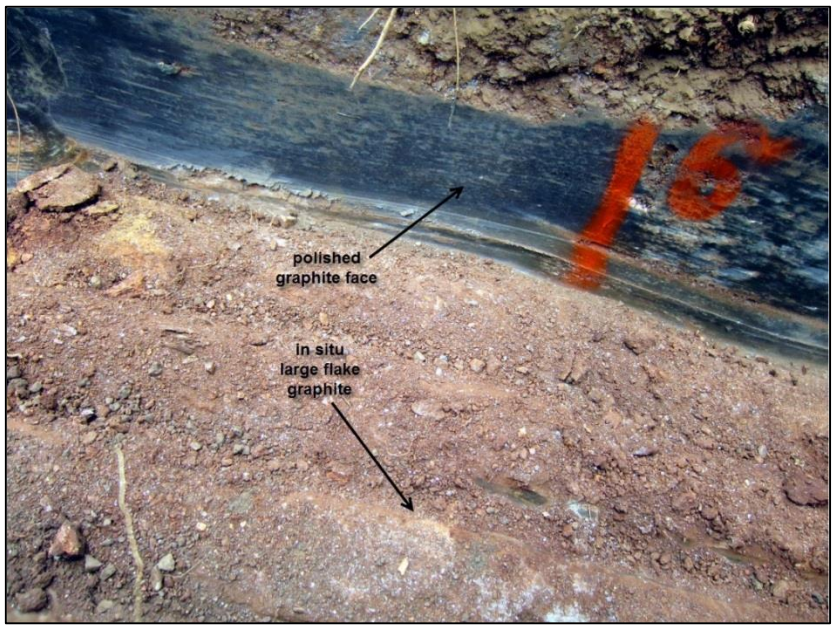


**Figure 11.** Limited graphitic mineralisation identified at surface at Ancuabe (polishing effect produced by smearing of graphite by excavator bucket along the side of the trench)

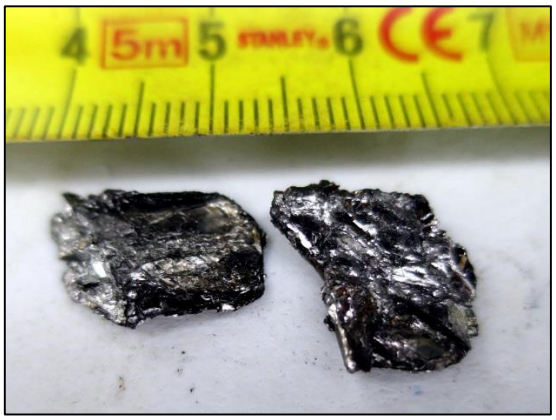

**Figure 12.** Flake graphite picked from site preparation spoils dump at Ancuabe.

A total of 10 VTEM-based targets, located in Prospect Area 1 will be tested in the first pass "proof of concept" drilling program. The key objective of the program is to confirm that graphite, and no other conductive material, is responsible for generating the larger VTEM responses.

### 1.4 Substantial graphitic mineralisation confirmed at T12

During the quarter, Triton announced that based on initial visual inspections of the drill core from the first five diamond drill holes and three RC drill holes from the T12 target, initial visual estimates indicate the mineralisation zone to be approximately 100 metres wide at surface and up to 50m in true thickness down hole comprising of a number of high, medium and low grade graphite zones. Assay results are pending.

Continuous graphitic exposures were discovered by ground validation of the associated VTEM anomaly. True intersections have subsequently been confirmed by five diamond drill holes.

To date, the target zone has been confirmed by drilling to be continuous over a 550m strike length and remains open to the north-east, north-west and at depth. Based on the interpretation of the T12 VTEM anomaly, Triton estimates the mineralisation zone has a potential strike length of over 2.5kms. The target zone projects from the drill intersections to surface exposure, as there is no overburden.

Triton is rapidly advancing the development of the T12 target area with the aim of defining a JORC compliant resource by the end of 2015 which is within the 6-12 month time frame originally anticipated.

Further exploration, likely to commence in 2016 as originally anticipated, will continue over several additional large targets located further to the east. Road access is currently being established to these sites.

**DUAT** applications (land use license) have commenced, together with the **initial feasibility study**. In order to streamline and minimise the development timeline and associated costs, Triton is planning to utilise the established infrastructure and strategic alliances.

**Early works** has commenced. A 15km all-weather access road connecting the T12 site to the sealed highway has been completed which will provide a more direct access route to nearby Pemba.

## *2. Material Activity subsequent to the quarter*

### 2.1 Ancuabe Bulk Concentrate Production

Subsequent to the quarter, Triton announced that due to the high customer demand for samples of Triton's Ancuabe graphite concentrate, a trial bulk production cycle was initiated at Mintek in Johannesburg.

The sample run was also used to compare the laboratory test work completed earlier in 2015, with a larger scale production scenario.

During this production cycle an average grade of **98.2%TGC** was achieved with a metallurgical recovery of 97%.

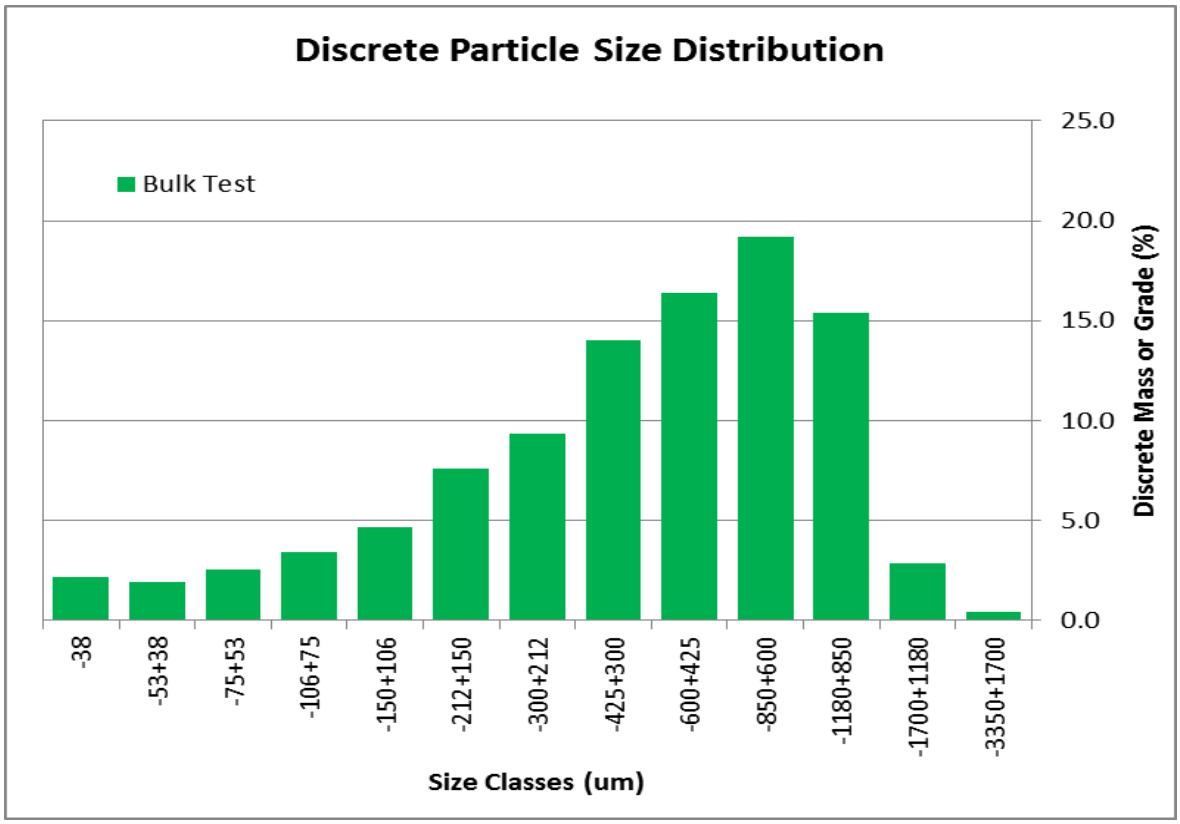


**Figure 13:** Ancuabe Discrete Particle Size Distribution

During the bulk sample test work graphite concentrates were produced in excess of 98%TGC, whilst still preserving the majority of graphite flake sizes. The graphite flakes were obtained through the standard methods of crushing, grinding, rougher and cleaner flotation.

The Company found that over 85% of the graphite particle sizes were larger than 150µm (+100 mesh) (Figure 14) and the majority were in excess of 300µm (+50 mesh).

**Figure 14.** Jumbo graphite flake recovered from Ancuabe.

These exceptional results demonstrate the high quality of the Ancuabe graphite and concentrate samples are currently being despatched to several parties across the globe that have expressed interest in testing the material.

## C. Balama South Project

*1. Material Activity during the quarter*

### 1.1 Exploration program commenced

During the quarter, Triton announced that it has completed a small reconnaissance geological mapping and sampling program on the Balama South project. The program was designed to confirm the presence of graphitic mineralisation as identified by the VTEM survey completed last year. A number of rock chip samples were obtained from graphitic outcrops and have been sent to the Mintek laboratories in South Africa for analysis.

### 1.2 Metallurgy & analysis underway

During the quarter, Triton confirmed that metallurgical and mineralogical test work is being conducted by Mintek laboratories in South Africa to define the flow sheet for the graphite flotation and recovery process. The tests are focused on the effect of milling times in the circuits and the graphite flake preservation in the early stages of the flotation process.

Triton expects to receive preliminary assay results and the subsequent flotation results from Mintek in the coming weeks. Triton will provide further updates regarding the Balama South graphite samples as results become available.

## JOINT VENTURE OPERATIONS

## A. China

### 1. Site visit

During the quarter, the Company confirmed attendance at a joint venture and status meeting with Yichang Xincheng Graphite Co., Ltd (**YXGC**) in the town of Dongyang in the Yichang region of the province of Hubei.

The meeting confirmed the joint venture for the development of the Chinese graphite factory is on track and expected to commence initial production of enhanced graphite products in 2016.

Initial production of the enhanced graphite products from the Chinese graphite factory, will provide the Company the benefit of an early income stream and the production is not dependent on bringing online the Company's Mozambique graphite projects, as YXGC can source enough flake graphite locally to meet the needs of the new factory, for the first few years. However, in the longer term YXGC will need to rely on the supply of the flake graphite from Triton to keep all of their factories in production.

The visit also included a further review of the current and new graphite production facilities at Dongyang, in order for Triton to obtain a better understanding of the production facilities and material requirements.

Whilst at the graphite factory, YXGC have conducted additional tests on the TMG products and have once again confirmed TMG products are ideally suited for use in all of the YXGC enhanced graphite products range and is now also suitable for a new high-value composite graphite product currently being developed by YXGC. Triton, with the assistance of YXGC, will be conducting further tests on the TMG products for suitability in a more diverse range of enhanced high-value graphite products.

During the second half of the visit, Triton attended the proposed site for the YXGC joint venture graphite enhanced graphite production plant which is located in Xingshan.

As previously announced, the Xingshan Regional Government is very supportive and keen to assist in the development of the graphite production plant. The Xingshan Regional Government is working closely with Triton and YXGC to develop the graphite production plant as soon as possible and is in the position to provide generous financial concessions in order to facilitate development.

The Xingshan plant site is located next to a hydro power substation, river loading facilities and a major highway. The early works continue with the construction of access roads, clearing and ground preparation for the proposed plant site, split into three levels totalling approximately 16 acres (Figure 15).

**Figure 15.** Xingshan proposed graphite plant site. Hydro-electric sub-station (right centre) and port loading facilities (centre).

Triton also inspected the accommodation facilities located a short distance from the proposed graphite plant site. These facilities are expected to house approximately 400-500 workers.

Triton confirmed that tremendous progress has been made in the past few weeks at the graphite plant site in Xingshan, with the Government-sponsored site preparation and earthworks nearing completion.

To view the current status of the ground works at the Xingshan site, refer to the Triton website for videos of the site, please use the following website link (www.tritonmineralsltd.com.au/links-and-gallery/videos).

Triton was also pleased to confirm the formal registration with the Xingshan government of the Chinese joint venture company namely "Hubei Xincheng Triton Graphite Technologies Pty Ltd (HXTGT)" and the receipt of the environmental permits to construct the enhanced graphite factory at the Xingshan site.

The joint venture with YXGC and the registration of the HXTGT has attracted strong local and national support and interest in China. This has been highlighted by the media interest in Triton's recent visits to the Xingshan. Please refer to the following links to view the latest Chinese news reports (news.3xgd.com/html/201508/04/167859.html and news.3xgd.com/html/201505/27/162405.html).

The construction and commissioning of the Xingshan graphite factory, will precede the construction of a similar facility in Mozambique. This implementation schedule will not only provide cash flow from the Xingshan graphite factory but will offer Triton the opportunity to fully test the design under production conditions before committing to construction of a similar factory in Mozambique.

**Figure 16.** Representatives from the Xingshan Government, YXGC and Triton review the plan of the Xingshan industrial park.

## 2. TMG products

During the quarter, Triton was pleased to confirm the initiation of trial production with YXGC at the Dongyang factory of enhanced graphite products made from TMG concentrate.

The initial production of graphite products will commence shortly and will include the creation of polystyrene sheets with embedded expanded graphite and high strength composite graphite sheets. Both processes and products are patented by YXGC. The Company will provide further updates to the market once the trial production has been completed.

The embedded graphite in the polystyrene sheets acts as a flame retardant and provides additional thermal properties to the sheets. As previously advised the Chinese Government is reportedly planning to mandate that all building insulation use expanded polystyrene in construction of new buildings and must contain at least 10% by volume of expanded graphite.

If this occurs, then the potential market size is significant as it would likely be implemented across the entire population base of China. However, given the thermal and flame retardant properties of graphite, there are also many other applications currently being explored which may have global applications.

Currently, in China there is about 16,000 different products produced with expanded graphite. Through the joint venture with YXGC and using TMG products, Triton is hoping to produce a range of polystyrene sheets with flame retardant expandable graphite and a further range of products to assist in satisfying the future demand of these types of enhanced graphite products.

To demonstrate some of the physical properties of the expanded graphite and the effectiveness as a flame retardant, refer to the Triton website for videos comparing normal polystyrene and the graphite enhanced polystyrene sheets. Please use the following website link (www.tritonmineralsltd.com.au/links-and-gallery/videos).

The high strength graphite composite sheets are formed by mechanically compressing specially manufactured flexible graphite sheets. Graphite has excellent compressibility and resilience, excellent sealing property for microscopic surface irregularities and a long working life.

The composite sheets are predominantly used for automotive body parts and engine components, including cylinder gaskets of engines and punching into all kinds of sealing products, and are also used for many high-pressure industrial applications. Through the joint venture with YXGC and using TMG products, Triton is hoping to produce high strength graphite composite sheets to assist in satisfying the future demand of this type of enhanced graphite product.

Subsequent to the quarter, Triton announced the successful trial commercial-scale production of the high strength composite graphite materials and fire resistant polystyrene foam, using TMG (Triton

Mozambique Graphite) concentrate from Nicanda Hill, that were completed at the Yichang Xincheng Graphite Co., Ltd (YXGC) factory during September 2015.

Enhanced graphite products such as composite sheeting and expanded graphite foil attract prices of up to US$50,000/tonne with the main uses being as formed thermal insulators such as gaskets, fire door seals, electronic parts and battery heat shields.

YXGC sells approximately 35,000 tonnes per annum of such expanded graphite products into an existing local Chinese market with over 130 clients and a further 30,000 tonnes per annum across the globe, to a diverse range of clients in the electronics, battery, automotive and building sectors.

Triton continues to work with YXGC to refine the production process and explore further options to expand the uses for TMG. Triton aims to produce high quality graphite concentrates in a full range of flake sizes from both Nicanda Hill and Ancuabe.

**B. Mozambique**

During the quarter, Triton announced that, based on an internal economic assessment, it is reviewing a number of options and site locations including the potential construction of the enhanced graphite products factory next to the Nicanda Hill deposit.

Triton, in conjunction YXGC, will review all options over the coming weeks to determine the most appropriate course of action and will provide an update to the market accordingly.

Triton believes some of the key benefits of value-adding of the TMG products on site at Nicanda Hill include the use of established mine infrastructure, power and water. Further benefits include an available local workforce, land access as the DUAT and environmental approval would already be approved under the mining license and reduced transportation costs.

These combined benefits would help to reduce capital and operating costs for the joint venture project and the in-country value adding is aligned with the current objectives of the Mozambique fiscal and mining regimes.

**C. Fraser Range North**

During the quarter, Triton and its joint venture partner, Matsa Resources Ltd lodged applications to surrender the licences E28/1663 and E28/1664 which formed the Fraser Range North project in Western Australia.

## CORPORATE

### a. Board appointment

During the quarter, Triton was very pleased to announce the appointment of Ms Paula Ferreira as the new

Independent Non-Executive Director of the Company. Paula is a Mozambican citizen and a Chartered Accountant certified by Ordem dos Contabilistas e Auditores do Mocambique with over 44 years of experience.

Paula is a highly qualified professional having spent over 15 years of her early career in the construction industry as an accountant, Chief Financial Officer and senior executive. She was one of the founders of the major Mozambican construction company CETA, having a strategic role in the merger of the 6 construction companies that formed CETA.

Subsequently, Paula spent the next 27 years devoted to financial audit, consulting and advisory roles. Paula was the managing director and a partner of Deloitte & Touche in Mozambique from 2000 to 2013. Trained as an auditor, she was previously with Ernst & Young in Maputo, Mozambique and owned and managed her own audit firm Sisteconta from 1987 to 1992. During these 27 years and whilst dealing with an extensive client portfolio, Paula developed a strong knowledge of the business environment in Mozambique including the public sector and international funding agencies.

Formally retired since January 2014, Paula is currently a member of the Fiscal Council of Mozabanco, Fellow of Aspen Global Leadership Network and is engaged in some projects in entrepreneurship development.

Paula is co-author of "*Accounting System for the Private Sector in Mozambique*" a didactic book published in 2014 providing guidance for application of IFRS in Mozambique. She is also co-author of five e-books on the Mozambican Tax System.

### b. Change of address

During the quarter, Triton announced that it had relocated its registered office and principal place of business to Ground Floor, Unit 1, 256 Stirling Highway, CLAREMONT, WA 6010

### c. Management changes

Subsequent to the quarter, Triton advised of the resignation of Mr Michael Brady as joint Company Secretary. Ms Paige Exley will continue as Company Secretary of the Company.

### d. General meeting of shareholders

Triton held a general meeting of shareholders (**GM**) at 10.30am on Thursday, 22 October 2015 at the Celtic Club, Perth, 48 Ord Street, West Perth, WA. All resolutions proposed at the GM were approved by shareholders.

**GENERATIVE**

The Company continues to be engaged in positive discussions and open dialogue with potential end users, in Asia, Europe and America, for potential offtake of graphite produced from the Mozambique graphite project.

Now that an initial binding off-take agreement has been signed, the Company is hopeful that in the near future it will be able to secure additional offtake agreements with other end users.
Securing offtake arrangements is a primary focus of the Company during 2015 and throughout the development stage of the Mozambique graphite project.

## TENEMENT STATUS

| TENEMENT | PROJECT | PROSPECT/ DEPOSIT | JV PARTNER | LOCATION | STATUS | CHANGE IN QTR | INTEREST |
|---|---|---|---|---|---|---|---|
| EL5966 | Balama North | Nicanda Hill, | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL5365 | Balama North | Cobra Plains | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL5304 | Balama South | - | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL5380 | Ancuabe | - | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL5336 | Ancuabe | - | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL5305 | Ancuabe | - | Grafex Ltd | Mozambique | Granted | No change | 80% |
| EL6357 | Ancuabe | - | Grafex Ltd | Mozambique | Approved - Pending grant | No change | 80% |
| EL5934 | Ancuabe | - | Grafex Ltd | Mozambique | Approved - Pending grant | No change | 80% |
| E28/1663 | Fraser Range North | - | Matsa Resources Ltd | Western Australia | Application for surrender lodged, pending approval | Surrender application lodged with DMP | 0% |
| E28/1664 | Fraser Range North | - | Matsa Resources Ltd | Western Australia | Application for surrender lodged, pending approval | Surrender application lodged with DMP | 0% |

**Table 2.** Table of the significant details relating to the status of Company's tenement holding.

## ADDITIONAL INFORMATION

**For further information, please contact:**
**Brad Boyle**
CEO & Managing Director
Tel: + 61 8 6489 2555
Email: **bboyle@tritonmineralsltd.com.au**

**Competent Person's Statement**
The information in this report that relates to Mineral Resource estimate at the Nicanda Hill deposit on Balama North project is based on, and fairly represents, information and supporting documentation prepared by Mr Mark Drabble, who is a Member of the Australasian Institute of Mining & Metallurgy. Mr Drabble is not a full-time employee of the Company. Mr Drabble is employed as a Consultant from Optiro Pty. Ltd. Mr Drabble has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code)'. Mr Drabble consents to the inclusion in this report the exploration results and the supporting information in the form and context as it appears.

The information in this report that relates to Exploration Results on the Balama North, Ancuabe and Balama South projects is based on, and fairly represents, information and supporting documentation prepared by Mr. Alfred Gillman, who is a Fellow of Australian Institute of Mining and Metallurgy (CP Geol). Mr. Gillman is an Executive Director of the Company. Mr. Gillman has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity

which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Mineral Resources and Ore Reserves (the JORC Code)'. Mr. Gillman consents to the inclusion in this report the exploration results and the supporting information in the form and context as it appears.

The information in this announcement that relates to Exploration Results on the Balama North, Ancuabe and Balama South projects is extracted from the reports entitled ASX Release "Mozambique Projects Update" dated 13 July 2015, ASX Release "Mozambique and China Projects Update" dated 14 August 2015, ASX Release "Battery Grade Spherical Graphite Produced" dated 20 August 2015, ASX Release "Jumbo Flake Graphite at Nicanda Hill" dated 28 August 2015, ASX Release "TMG Produces Graphene" dated 11 September 2015, ASX Release "Triton Mozambique Development Strategy" dated 14 September 2015, ASX Release "Substantial Graphitic Mineralisation Confirmed at Ancuabe" dated 18 September 2015, ASX Release "Commercial Manufacture of TMG Enhanced Graphite Products" dated 7 October 2015, ASX Release "Positive Metallurgical Results For P66 and Ancuabe" dated 14 October 2015 and is available to view on **www.tritonmineralsltd.com.au.** The reports were issued in accordance with the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

**Forward-Looking Statements**

This document may include forward-looking statements. Forward-looking statements include, but are not necessarily limited to, statements concerning Triton Minerals Limited's planned exploration program and other statements that are not historic facts. When used in this document, the words such as "could", "plan", "estimate" "expect", "intend", "may", "potential", "should" and similar expressions are forward-looking statements. Although Triton Minerals Limited believes that its expectations reflected in these are reasonable, such statements involve risks and uncertainties, and no assurance can be given that actual results will be consistent with these forward-looking statements.

***Holder of the world's largest known combined graphite-vanadium resource***

**Vision**

Led by a highly experienced board and management team, Triton's primary vision is to grow shareholders value through discovery and development of graphite, gold and other precious, base and industrial minerals deposits. Further, Triton will explore vertical integration opportunities to supplement its core business and to create valued revenue streams to ultimately benefit Triton's shareholders.

**TMG and beyond**

Triton hopes to establish Triton Mozambique graphite, produced from its Mozambique graphite projects (**TMG**) as the global graphite-industry benchmark by aiming to offer the world's lowest cost and most diversified graphite product range, together with the longevity of a reliable supply of high quality flake graphite.

*Triton hopes to establish TMG as the global graphite-industry benchmark.*

Triton is also actively pursuing vertical integration opportunities to be involved in all aspects of the graphite supply chain, which Triton believes will add significant value to the Company and its shareholders in the long term.