

ASX and Media Release 29 October 2010

# **Quarterly Activities Report – September 2010**

### **HIGHLIGHTS**

- Acquisition of the world-class Kwale Project completed.
- \$8.02 million capital raising completed.
- The first phase of work towards an enhanced DFS ("EDFS") commenced with the initiation of a capital cost update and process design review study (completed in October).
  - **o** Kwale Project now projected to be larger and more robust:
    - Capital cost of between US\$225 million and \$255 million
    - NPV<sub>10</sub> of between US\$160 million and US\$210 million
- Development financing activities underway with the mandating of RFC Corporate Finance.

Base Resources Limited (ASX:BSE) ("Base") has made significant progress in the development of the Kwale Project over the September quarter, completing both the acquisition and related \$8 million capital raising as well as initiating the capital cost update on the original project Definitive Feasibility Study ("DFS") and the Process Design Review Study evaluating improvement project improvement opportunities.

#### **Kwale Acquisition**

In July, Base completed the acquisition of the Kwale Mineral Sands Project in Kenya Project from Vaaldiam Mining Inc ("Vaaldiam") (TSX:VMI). Completion of the acquisition followed a substantial due diligence exercise, the securing of both Government of Kenya and Base shareholder approval and completion of an \$8 million capital raising. The due diligence exercise confirmed Kwale as a robust project representing an outstanding opportunity for Base shareholders to acquire an advanced and highly competitive project in a sector with a significant forecast supply shortfall emerging in the medium term (refer to Annexure 1 – Kwale Project for further information).

The capital raising, which was completed in July, comprised a 1 for 1 rights issue and \$4.6 million placement and was priced at \$0.09 per share. and raised a total of \$8.02 million. The rights issue and placement, which were respectively underwritten and arranged by RFC Corporate Finance Ltd, resulted in a number of institutional and sophisticated investors taking up substantial shareholdings in the company. These included Asian Investment Management Services Ltd and RMB Resources who took up interests of 19.97% and 17.17% respectively.

On completion of the acquisition, Base initiated a comprehensive re-estimate of the capital cost for the original DFS and a Process Design Review study, which were both completed in October. The purpose of these exercises was to provide the basis, scope and a refined estimate of the outcome of the EDFS. The capital cost re-estimate has been undertaken by Ausenco, the authors of the original DFS, and incorporates several changes in approach from the original DFS, including a decision to owner operate the mobile fleet and the adoption of more conservative approaches to procurement and costing. The Process Design Review study has identified and evaluated to scoping study level a suite of design and concept changes that will improve the project in terms of enhanced returns and risk profile.

As announced on the 26<sup>th</sup> of October, on the basis of current TZMI price forecasts, the capital cost update and the Process Design Review, the capital development cost and economic returns from the Kwale Project have been updated and are now projected to be within the following ranges:

	Capital Cost (US\$m)	Operating Cashflow (US\$m)	NPV10 (US\$m)	IRR
High	225	840	210	29%
Low	255	735	160	25%

Following their successful role in advising on the Kwale Acquisition and arranging the \$8 million acquisition funding, specialist resource sector corporate advisory firm RFC Corporate Finance Ltd have been mandated to work with the Company to develop the financing strategy and arrange the required funding for the development of the Kwale Project. Discussions with a number potential offtake and joint venture partners, debt providers and equity investors were initiated during the quarter with encouraging progress to date.

The December quarter will see significant further progress in the development of Kwale. With the results of the Process Design review having established the scope, work has now commenced on the EDFS with completion targeted in the 2<sup>nd</sup> quarter of 2011. A drilling program to better define lithology, grade and assemblage within the dunes for detailed mine planning and process design confirmation is underway and will be completed in the December quarter. This drilling will form the basis of an updated mineral resource estimate due in the 1<sup>st</sup> quarter of 2011.

Base is working towards having studies completed, off-take arrangements concluded and development funding in place by the 3<sup>rd</sup> quarter of 2011 which would see the Kwale Project in production in mid-2013.

### **Midwest Projects**

Previous work has resulted in the establishment of a series of specific iron, uranium, gold and base metal targets at the Poona east, Murgoo and Wandarrie Well projects (refer to Annexure 2 – Midwest Projects). Appropriate exploration programs have been developed to test these targets but their implementation has been on hold pending the finalization of the heritage agreements with native title claimants that are required for the granting of the tenements. These negotiations have now been concluded with agreements to be executed in the December quarter, clearing the way for the granting of the tenements.

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# **About Base Resources**

**Base Resources Limited** (ASX:BSE) is developing the world-class Kwale Mineral Sands Project in Kenya, East Africa. Kwale is an advanced and highly competitive project in a sector with a significant forecast supply shortfall widely expected to emerge in the medium term.

The Kwale Project represents an advanced development opportunity with all material project approvals, permits and licenses required for development currently in place and a full definitive feasibility study (DFS) having been completed, representing an investment of in excess of US\$60 million by the previous owners.

The Project enjoys a high level of support from the Government of Kenya as well as the local community and, located just 50km from Mombasa, Kenya's principal port facility, is well serviced by existing physical infrastructure.

Importantly, two pilot plant operations at Kwale provide confidence in processing behaviour and indicate a suite of readily marketable products. The Project's high value mineral assemblage and low stripping ratio result in a projected revenue to cash cost ratio that would place Kwale in the top quartile of world producers.

An updated and enhanced DFS is underway and will be completed in the June quarter of 2011 with a view to completing off-take and financing arrangements in the 3<sup>rd</sup> quarter of 2011. A realistic development time line should see the Kwale Project in production in 2013.

Base Resources also has a portfolio of early stage exploration projects in Western Australia's Mid West region, with established targets for iron ore, gold, base metals and uranium. The Company continues to progress the granting of the tenements, the evaluation of their potential and the consideration of the various development alternatives to maximize realized value.

The Board of Base Resources brings together a diverse skill set and considerable experience in all aspects of exploration and development, operations, finance, corporate development and capital markets - together with a commitment to unlock value for its shareholders from the Company's growing and diverse portfolio of assets in both Africa and Australia.

### ANNEXURE 1 - THE KWALE PROJECT

#### **PROJECT OVERVIEW**

In the Kwale Mineral Sands Project in Kenya, East Africa, Base has secured a "world class" advanced development project well positioned to capitalise on a sector with a significant forecast supply shortfall emerging in the medium term.

All material Project approvals, permits and licenses required for development are in place and a full definitive feasibility study (DFS) was completed, representing an investment of in excess of US\$60 million by the previous owners, Vaaldiam Mining Inc (Vaaldiam) of Canada. High value mineral assemblage and a low stripping ratio result in a projected revenue to cash cost ratio that would place Kwale in the top quartile of world producers.

The Project, which enjoys a high level of support from both the Government of Kenya and the local community, has access to well developed existing physical and social infrastructure and is located just 50km from Mombasa, Kenya's principal port facility.

Furthermore, two pilot plant operations at Kwale have given confidence in processing behaviour and indicate a suite of readily marketable products.

An updated and enhanced DFS (EDFS) will be completed in the second quarter of 2011 with a view to completing offtake and financing arrangements in the third quarter of 2011. A realistic development time line should see the Kwale Project in production in mid 2013.

Importantly, as part of the Kwale acquisition, Base also acquired an option to purchase two further exploration projects from Vaaldiam, representing additional

production potential from a combined ~1.3 billion tonne mineral resource.

Strategically, the Kwale Project represents the vehicle to establish the regional presence and operating model, the capital base and cash flow to unlock the potential of these exploration projects.

#### MINERAL SANDS MARKET OUTLOOK

The acquisition of the Kwale Project was motivated by a strongly held view that, as an advanced project, significantly de-risked through extensive studies and pilot plant operations, it is perfectly positioned to take advantage of a sustained opportunity set to emerge in the medium term across the three product streams of ilmenite, rutile and zircon.



Ilmenite and rutile are feed-stocks for the production of titanium dioxide (TiO<sub>2</sub>) pigment used in the production of high quality finishes. Due to these end uses, titanium pigment is essentially a lifestyle product.

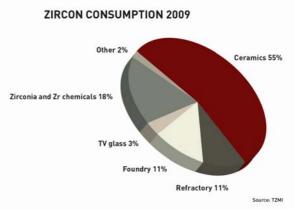
Historically, its use has developed strongly in the most economically developed countries of the world where it is an essential component of basic consumer products, such as housing, motor vehicles and plastic products. Over past years, global consumption of TiO<sub>2</sub> pigment has consistently grown at rates close to 3.1% per annum.

Zircon has a range of end-uses, the largest of which, accounting for 55% and 18% of global consumption in 2009 respectively, are in ceramics and zirconia-based chemicals. Consumption of zircon has grown at a compound average rate of 3% between 2000 and 2009 with the principal driver of this growth being the industrialization and urbanisation of China.

Industry experts such as TZ Minerals International ("TZMI") forecast the emergence of significant supply deficits in each of the sulphate ilmenite, rutile and zircon markets by 2013, with demand for all three products expected to at least maintain their growth trend of the last ten years. Supply deficits are the result of depletion of existing operations and the impact of the sustained low prices of the last several years being insufficient to induce the development of new projects capable of supplying the required volumes.

With this outlook of supply constraint, an increasing overall upward trend in ilmenite, rutile and zircon pricing has emerged with TZMI forecasting prices to reach US\$130/t, \$715/t and \$1,300/t respectively from 2015.

# Food and pharmaceuticals 1% Rubber 2% Fibres 2% Inks 3% Specialties 3% Paper 9% GDP (US\$'000 PER CAPITA) 125 Russia Eur ave LA ave Brazil Turkey 5 ME&A ave ME&A ave ME&A ave



0.0

0.5

1.0

1.5

2.0

ANNUAL TIO, PIGMENT CONSUMPTION (KG PER CAPITA)

2.5

3.0

#### **CURRENT STATUS**

All material leases, licenses, permits and government agreements necessary to allow development of the Kwale Project to proceed are in place, including the key Special Mining Lease (SML), environmental permits and a Fiscal Investment Agreement with the Government of Kenya which provides a range of government undertakings and tax concessions for the Project.

This suite of granted licenses includes land titles for the port and processing facility sites.

The resettlement program has been completed, with all former landowners and squatters compensated and relocated from the SML to newly allocated land. A small number of farmers who occupy land to be impacted by the ultimate construction of the Mukurumudzi dam have been allocated new land plots but are yet to be relocated and compensated although the formula for doing so has been established.

The Project continues to enjoy a high level of Government and community support. Importantly, the Government of Kenya regards Kwale as a project of national significance and, as such, is committed to seeing its development.

Activities in the 2010/11 financial year will focus on completing an enhanced DFS, establishing offtake arrangements and securing the requisite project funding on a timeline that will see development of the Kwale Project commence by the middle of 2011.

The DFS completed by Vaaldiam was last updated in 2006. Base has completed a comprehensive reestimate of the capital cost for the original DFS and a Process Design Review study. The purpose of these exercises was to provide the basis, scope and a refined estimate of the outcome of the EDFS. The capital cost re-estimate was undertaken by Ausenco, the authors of the original DFS, and incorporated several changes in approach from the original DFS, including a decision to owner operate the mobile fleet and the adoption of more conservative approaches to procurement and costing. The Process Design Review study has identified and evaluated to scoping study level a suite of design and concept changes that will improve the project in terms of enhanced returns and risk profile.

A drilling program of up to 7,500 metres is also being undertaken to better define lithology, grade and assemblage within the dunes for mine planning and process design enhancement.

The product of this work will be an updated and enhanced DFS, due for completion in the second quarter of 2011.

Preliminary discussions are underway with potential offtake partners. The level of interest being shown reflects the forecast medium term supply deficits in both the titanium dioxide and zircon feedstock markets. The apparent strategic imperative to secure supply is presenting opportunities for customer participation in the provision of development funding.

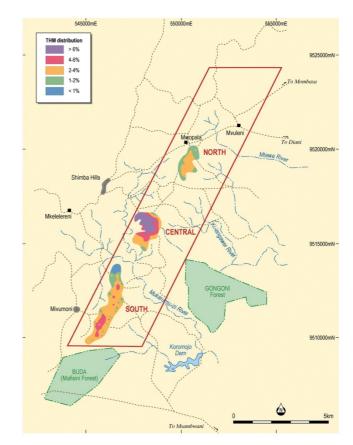
# **MINERAL RESOURCES**

The Kwale Project, as contemplated in the DFS is based only on the Central and South Dunes with combined JORC Compliant Mineral Resources of 38.5mt at 6.8% Total Heavy Mineral (THM) in the Measured category and 101.5mt at 3.8% THM in the Indicated category.

A further Mineral Resource of 116mt at a grade of 2.1%THM has been reported at the North dune. This has not previously been included in the Kwale Project but will be evaluated as an extensional opportunity in due course.

The Central Dune has an average thickness of 29 metres with the upper section exhibiting a higher grade (>5% THM) than the lower section (1-5%). There is a particularly high grade area in the northern part of the Central Dune where grades can exceed 10% THM. For the dune as a whole, the heavy mineral content averages 5.7%.

The South Dune has an average thickness of 19 metres with an average mineral content of 3.5%.



#### MINING AND MINERAL PROCESSING

The Kwale dunes are considered amenable to a continuous mining technique, with a bucket wheel excavator and overland conveyors contemplated in the original DFS. While this is a sound approach, a number of lower capital cost alternatives are being evaluated as part of the DFS enhancement process.

For the first four years, the mine is expected to operate at 8.8mtpa before increasing to 12.5mtpa as grade declines.

The ore is planned to be processed using conventional mineral sands separation techniques. Ore will be transported by an overland conveyor system and divided at the plant run-of-mine (ROM) stockpile into direct plant feed and stockpiled excess.

Feed ore will be wet screened, deslimed and processed in the primary concentrator spirals circuit to produce heavy mineral concentrate (HMC). Water will be reclaimed via a slimes thickener, and recirculated to the process water reservoir. Thickened slimes and sand tailings from the spiral plant will be pumped to the residue storage areas.

HMC will be withdrawn from the stockpile to feed the first section of the mineral separation plant (MSP), to recover the ilmenite into a storage shed, and upgrade the remaining mineral by removing further quartz and some gangue heavy mineral. This non-magnetic concentrate will be stored prior to use in downstream MSP sections.

The non-magnetic concentrate will be dried, and subjected to conventional magnetic and electrostatic separation processes, to produce the rutile product and a small additional ilmenite stream. The zircon-rich remaining sand will then be processed in a wet gravity separation plant to remove gangue heavy minerals, particularly kyanite.

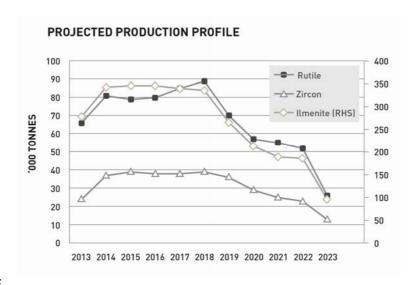
The enriched zircon concentrate will be re-dried and finally treated using electrostatic and dry magnetic equipment.

Each product will have on-site storage silos, before being hauled 50 kilometres by road tankers to the export facility near Mombasa.

Two separate pilot plant operations have given insight into the processing behaviour of the ore and provide a sound basis for the design of the flowsheet and the proposed slimes handling approach.

The pilot plant results support the production of a suite of products that are readily saleable with low levels of several of the key deleterious elements, including radio-nuclides. They also support the validity of the proposed approach to slimes handling and disposal.

Kwale is projected to produce an average of 330ktpa, 80ktpa and 35ktpa of ilmenite, rutile and zircon respectively over the first six years of operation from the higher grade Central dune before declining to average 190ktpa, 55ktpa and 25ktpa over the subsequent five years.



### **INFRASTRUCTURE**

The Kwale Project is well supported by relatively well developed existing physical infrastructure.

The Project site is some 8 kilometres to the west of the main coastal highway connecting Mombasa to Tanzania. Kwale product will be hauled 50 kilometres along this road to a dedicated ship loading facility to be constructed at Likoni. This loading facility will access the existing shipping channel associated with the main Mombasa port that is the primary terminal for East Africa.

Mineral sands projects require significant quantities of water and power. At Kwale, there is a substantial latent water supply to be accessed via the construction of a dam on the Mukurumudzi River and the development of a borefield on a local aquifer.

The Project is permitted to establish a dedicated power production facility and this formed the basis of the power supply in the original DFS. However a 132kva substation has recently been commissioned just 18 kilometres from the Project site with sufficient capacity to accommodate Project requirements. The power delivery profile of this line is being evaluated as part of the EDFS.

# **PROJECT ECONOMICS**

On the basis of the current TZMI price forecasts, the capital cost update and the Process Design Review, the capital development cost and economic returns from the Kwale Project have been updated and are now projected to be within the following ranges:

	Capital Cost (US\$m)	Operating Cashflow (US\$m)	NPV10 (US\$m)	IRR
High	225	840	210	29%
Low	255	735	160	25%

With the results of the Process Design review having established the scope, work has commenced on the EDFS with completion targeted in the second quarter of 2011.

# **KENYAN EXPLORATION PROJECTS**

Base has acquired an option to purchase three further exploration projects from Vaaldiam, namely Mambrui, Kilifi and Vipingo. These projects, which are located along the coast to the north of Mombasa, have a combined JORC Compliant Mineral Resource as previously reported by Vaaldiam, of 1,388 million tonnes at 3.8% THM (1,111 million tonnes at 3.7% THM "Indicated" and 278 million tonnes at 4.1% THM "Inferred").

#### **COMPETENT PERSONS STATEMENT**

Information in this announcement that relates to mineral resources at the Kwale Project is based on information compiled by Dr Alwyn Annels in 2001. Dr Annels is a Fellow of the UK Institute of Materials, Minerals and Mining. Dr Annels was at that time an employee of SRK (UK) Limited.

Dr Annels 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Annels consents to the inclusion in this announcement of the information based on his work in the form and context in which it appears on the basis that the resources have not changed since his 2001 information.

SRK has also consented to the publication of this Competent Person Statement on the basis that the resources and modifying factors have not changed since its last review in 2006/2007 which used essentially the same resources as were reviewed in 2001.

#### FORWARD LOOKING STATEMENTS

Certain statements made in this announcement contain or comprise certain forward-looking statements regarding the capital cost and production and financial performance of the Kwale Project. Although Base believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchanges rates and business and operational risk management. Base undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

### ANNEXURE 2 - MIDWEST PROJECTS

### **POONA EAST**

The Poona East project is comprised of four exploration license applications (E20/673-675 and E20/718) covering approximately 300 square kilometres in area. The project is located in the Murchison mineral field between the Weld Range and the Big Bell Gold Mine. Tenements lie adjacent to the Poona rare earth element (REE) occurrence where past mining of tin and associated rare earth minerals has occurred along a faulted contact between granite -pegmatite and greenstone. This style of pegmatite- hosted mineralisation may be repeated within, or extend into, Base's tenements. Such mineralisation may also be prospective for tungsten, tantalum and gold.

The tenements are broadly oriented along a regional boundary between granite in the south and greenstone lithologies in the north. This geological association provides diverse commodity potential. The magnetics data within the greenstones in the eastern part of the land holding indicates complex folds within iron rich (BIF) units (Figure 1).

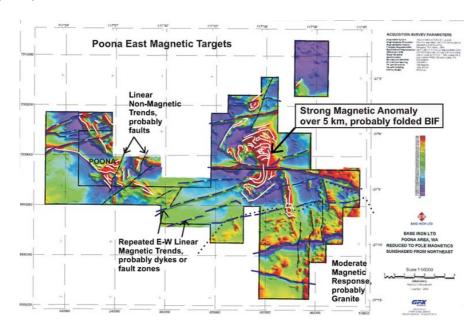


Figure 1

# **Iron Targets**

In outcrop, the BIFs appear individually limited in size and extent. However, the structural interpretation is that they are part of a fold system that repeats multiple BIF units within an area 5 kilometres long by 2 kilometres wide (**Figure 2**). Outcrops have produced rock chip samples averaging grades of 41% Fe and very low concentrations of contaminant elements (Figure 3).

Geophysical modelling and field mapping and sampling have confirmed a series of refined BIF targets for further exploration (**Figure 3**). The critical issue is the thickness of the BIF's at depth and this is proposed to be tested in conjunction with drilling to test the identified gold targets (refer below).

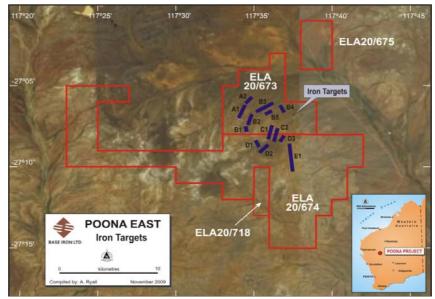


Figure 2

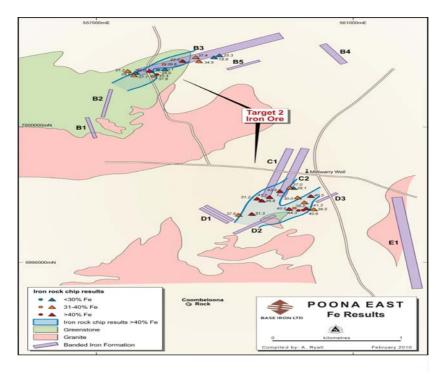


Figure 3

# **Gold Targets**

In addition to the iron ore potential, folded BIFs represent highly favorable gold targets hosting some of WA's richest gold deposits (e.g. Sunrise Dam and Mt Magnet). The potential for these BIFs to host gold exists at fold nose positions in particular, where increased deformation can be expected. Gold is chemically trapped in the BIF's but structurally focused as high grade shoots in fold nose positions where units thicken. This model is supported by anomalous soil sample results from historic exploration coincident with anomalous rock chip assays from sampling conducted by Base, in an area where the BIFs are structurally disrupted (Figure 4). These rock chip assays included a best Au result of 123ppb.

A series of gold targets have now been refined for further exploration (**Figure 4**) with a drilling program planned that will also test the co-incident iron targets.

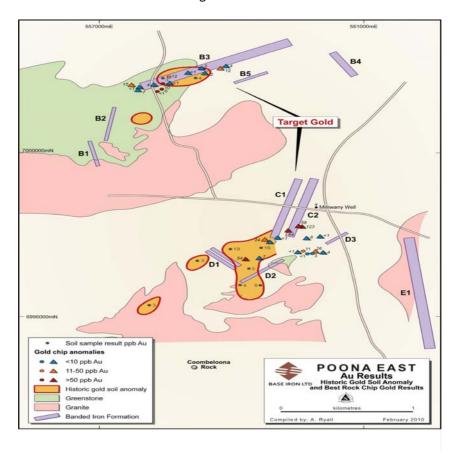


Figure 4

# **Uranium Targets**

Geophysical modeling has also identified a series of strong uranium ratio responses which may represent exposed calcrete-hosted uranium occurrences within the granites at favorable drainage and structural trap positions. A priority target has been selected for further field work in the June quarter (**Figure 5**).

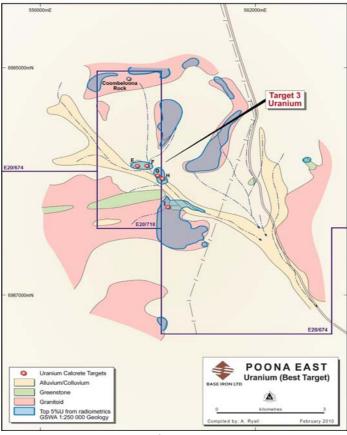


Figure 5

At this stage, the Poona East tenements are still under application. We are presently working with the native title claimants in relation to establishing an agreement which will facilitate the grant of the tenements. We anticipate completing this process by the end of the June quarter.

#### **MURGOO**

The Murgoo Project, comprising two exploration license applications (E59/1448 and E59/1556) covering almost 260 sq kms, is located between two gold bearing greenstone belts: the Yalgoo Belt to the southwest and the Dalgaranga Belt to the northeast. The most northern part of the tenement area includes greenstone lithologies, where greatest potential for gold mineralisation exists. Elsewhere the tenement is largely underlain by granite or other intrusive rocks.

A strong magnetic response in the northeast portion of the western tenement shows a dilated linear folded pattern (similar to that for BIF). These magnetic linears occur beneath cover and take the form of repeated arcuate folds and separated fold limbs around a central circular magnetic anomaly. This circular anomaly is coincident with an area barren of all vegetation. While there are several possible explanations, one is the presence of a significant buried sulphide body with base metal potential. Initially, a ground EM survey is proposed to confirm the presence of shallow conductive body (Figure 6 – Target 6).

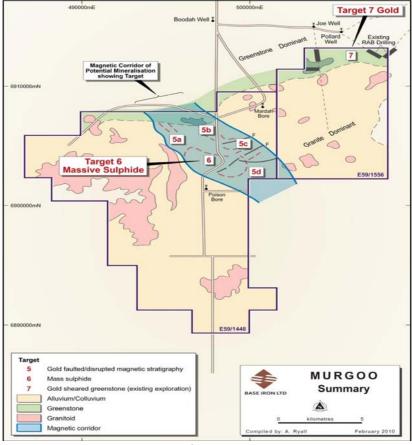


Figure 6

A number of gold targets have also been identified around this anomaly (Figure 6 – Targets 5a through 5d). The magnetic units adjacent to the anomaly may represent ultramafics, mafics or BIFs and are more likely to be mineralised in areas of maximum deformation. Whilst the magnetic units themselves may be mineralised in areas of deformation so too are the stress shadow positions that lie adjacent to the circular magnetic anomaly. Such positions may also act as trap sites for gold where ductile units are deformed around brittle units, and gold is deposited where space is created at the interface. Such forms of gold deposition and related deformation are common around and within large granite bodies (e.g. Granny Smith and Tarmoola) where stress shadow trap sites may host gold.

There is little or no previous exploration evident on-ground or from DoIR records in this area.

At this stage, the Murgoo tenements are still under application. We are presently working with the native title claimants in relation to establishing an agreement which will facilitate the grant of the tenements. We anticipate completing this process by the end of the June quarter.

#### **WANDARRIE WELL**

The Wandarrie Well project area is comprised of exploration licence application ELA 59/1656 covering an area of 192km2 immediately to the north of the Murgoo project.

Base has identified potential for a significant calcrete-style uranium deposit in an extensive channel system draining from adjacent relatively "hot" granite to the north. The project area is up-drainage from the strong and continuous radiometric anomaly within a large calcrete bearing channel recently identified by Enterprise Metals at Salt Creek. Further geophysical analysis and field work will be undertaken over the coming quarters, in conjunction with the next phase of field work at Murgoo.

### **Competent Persons Statement**

The information in this announcement that relates to exploration results, mineral resources or ore reserves in Australia is based on information compiled by Mr. Tony Ryall, who is a Member of the Australian Institute of Mining and Metallurgy. Mr. Ryall has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity to which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australian Code for Reporting of Exploration results, Mineral resources and Ore Reserves". Mr. Ryall consents to the inclusion in this report on the matters based on his information in the form and context it appears.