

29 October 2015

SEPTEMBER 2015 QUARTERLY REPORT

Highlights

- Strategic entry in the graphite market via two option-to-purchase agreements
- \$2.6 million raised through an underwritten accelerated rights offering

Sayona Mining Limited (ASX: SYA) ("Sayona" or the "Company") is pleased to announce activities for the quarter including securing options on two graphite projects and completing a \$2.6 million capital raising.

Strategic Entry into the Graphite Market

During the quarter, the Company announced a strategic entry into the natural flake graphite market by securing option-to-purchase agreements over two graphite projects, including Itabela in Brazil, which has near-term development potential, and the earlier stage East Kimberley project in Australia, which is planned to be drilled in late 2015.

Both projects offer an attractive entry into the graphite market, as they are:

- Situated in proven districts for high-value, high purity and large flake graphite;
- Simple geology and large resource potential;
- Well-established mining districts with excellent infrastructure;
- Close to end-user markets; and
- Tier one mining jurisdictions with stable taxes and royalties, and mining law.

East Kimberley, Western Australia

The East Kimberley project is located within the East Kimberley region of Western Australia, 240 kilometres south of Wyndham Port and 220 kilometres south-south-west of the regional centre, Kununurra.

The Company's East Kimberley project includes one granted tenement and three separate tenement applications, subject to two option-to-purchase agreements. The project covers 278 km² and comprises two areas, Keller and Corkwood (See Figure 1). These areas have never been previously explored for their graphite potential.



Terms of the two option-to-purchase agreements, include:

- Attgold Pty Ltd ("Attgold") SYA paid Attgold \$5,000 on signing and is required to make payments of \$30,000 within 6 months and \$170,000 within 18 months of signing of the agreement, respectively, to acquire a 100% interest in the tenements E80/4915, E80/4948 and E80/4949; and
- Western Iron Pty Ltd ("Western Iron") SYA paid Western Iron \$5,000 on signing and is required to pay \$200,000 on or before the six month agreement anniversary to exercise its option to acquire 100% of the graphite interests in tenement E80/4511. Western Iron will also receive a 1% gross production royalty. Western Iron retains a Back-in Right to the nickel, copper and iron mineralisation by the payment of \$100,000 within 12 months.

Table 1: East Kimberley Project Tenements				
Tenement	Name	Status Area		Vendor*
E80/4915	Keller North	Applied 17 October 2014	14 blocks	Attgold
E80/4948	Keller West	Applied 17 March 2015	9 Blocks	Attgold
E80/4949	Corkwood	Applied 17 March 2015	21 Blocks	Attgold
E80/4511	Western Iron	Granted 28/12/2011	42 Blocks	Western Iron
*Option-to-Purchase agreement subject to Attgold and Western Iron agreements				



Figure 1: East Kimberley project location, tenement boundaries and infrastructure





Figure 2: Sample results from the two mapping and sampling programs

The Company's initial field reconnaissance has identified a number of graphite outcrops which closely correspond with geophysical targets reported in search literature. The graphite has a recessive weathering profile and poorly outcrops.

Geological and geophysical information in the Corkwood area has defined graphite prospective anomalism along a 20 kilometre strike extent. An initial field reconnaissance program has confirmed the prospectivity of the area with the discovery of graphite mineralisation at surface.

A total of 19 rock grab samples were collected and submitted for graphite analysis, with 9 returning higher than 5% TGC (total graphitic carbon) including a peak assay of 7.71% TGC.

The Corkwood graphitic horizon has limited outcrop but in road cuttings and creek exposures, is commonly 10 metres or more, and ranges up to 35 metres in true thickness. The broad thickness, extensive strike extent and good grade highlights the potential for significant graphite mineralisation within the project area.

A follow up program was completed in July 2015 to map and sample the central portion of the Corkwood anomaly on the Western Iron granted Exploration License E80/4511, where there has been no previous graphite exploration.

Mapping has identified outcropping graphite mineralisation along a 10 kilometre strike extent within the 20 kilometre long geophysical anomaly at Corkwood. A total of 110 rock grab sample have been submitted for assay, with results ranging from 0.65% to 20.2% TGC, including:

• Seventeen of the samples returned 5% TGC or greater; and



• Two of the highest samples included 20.2% TGC and 16.8% TGC.

The graphite mineralisation is contained in units commonly 10 metres or more in thickness and up to 50 metres in thickness.

Geophysical Surveying

The Company has completed a review of historical exploration data in the district, including airborne and ground electromagnetic surveying ("EM") targeting conductive base metal mineralisation. Graphite is also strongly conductive and many explorers interpreted graphite as the likely cause of the identified anomalism.

Geophysics in the Corkwood area has defined a conductive anomaly over a 20 kilometre strike length, which correlates with surface graphite mineralisation recently discovered in the tenement). Surface rock samples collected from the geophysical anomaly area, include:

- Northern Area up to 6.91% Total Graphitic Carbon ("TGC"); and
- Southern Area up to 7.25% TGC.

Geophysics in the Keller area has also defined several conductive anomalies, including one over 5 kilometres in strike extent, coincident with several high-grade graphite occurrences.

Subsequent to the end of the quarter, The Company successfully completed a 320 line kilometre Versatile Time Domain Electromagnetic ("VTEM") geophysical survey over the Corkwood Graphite project. The helicopter borne VTEM system is designed to identify conductive features in the bedrock, such as flake graphite mineralisation.

Preliminary VTEM survey data clearly defines robust and coherent conductive anomalies along a corridor extending for some 25 kilometre strike extent within the project tenements (preliminary survey data is displayed in Figure 3 - the areas of high intensity and potential high grade graphite mineralisation are highlighted as purple).

The VTEM anomalies coincide with areas where graphite has been identified at surface, providing encouragement that all the survey anomalies relate to bedrock graphite mineralisation.

The principle anomalous area at Corkwood Central is 9 kilometres in strike length and is coincident with graphite mineralisation identified at surface which returned up to 20.2% TGC. Within this area six prospects have been outlined with the best combination of flake size, conductance, thickness and grade for a proposed drilling program.

The survey also identified a robust southern extension to the known mineralisation which totals over 8 kilometres in strike extent and is totally untested by any exploration to date.

Final survey data is anticipated to be received in early November.







Petrography

Seven East Kimberley project surface rock samples were submitted to Townend Mineralogy Laboratory for polished thin section preparation and petrographic description. Five of the samples were collected from the northern portion of the Corkwood lease, one from the southern portion and one from the Keller area. Sample locations are shown in Figure 6.





Figure 4: Sample SK555108 which assayed 7.25%TGC with 75% of the graphite flakes over 500 micron in length with 10% over 1,000 micron

Figure 5: Sample SK555107 which assayed 5.4%TGC with 50% of the graphite flakes over 500 micron in length



Figure 6: Petrography sample locations, Corkwood North

The Corkwood rocks are classed as graphite marbles, with the calcite as a replacement mineral of metosomatic origin and related to alteration during weathering. Original feldspar, mica and sulphide have also changed during weathering causing the graphite flakes to be disrupted. The graphite shows good



orientation with flakes frequently in excess of 500 micron in length and with widths typically up to 50 micron or more, with a population of finer material within the marble.

The Keller lease sample is a quartz arenite with fine flake graphite identified in the one sample tested.

Next Steps

The Company is planning to drill test the prospective Corkwood leases during the fourth quarter, calendar 2015 once statutory and Native Title requirements have been completed.

Itabela, Brazil

During the quarter, the Company signed an option-to-purchase contract for the advanced Itabela graphite project in Brazil.

Brasil Grafite S.A. ("Brasil Grafite"), is a privately owned Brazilian exploration and development company which owns 100% of the Itabela graphite project, comprising 13 exploration permits with a total area of 13,316 hectares. Sayona has signed a fourmonth, exclusive binding term sheet to acquire the Itabela project. Key terms, include:

- Monthly option payment of US\$15,000 during the four month due diligence period;
- US\$3.5 million purchase price should Sayona elect to acquire Itabela; and
- Vendor retains a 2% NSR over all mineral rights.

During the due diligence period, Sayona intends to complete independent technical reviews of the drilling and resource, and metallurgical test work.

Location

Itabela is located in the north-eastern state of Bahia, Brazil, 800 kilometres north of Rio de Janeiro and 500 kilometres south of the state capital, Salvador. The nearest town, Itabela, is situated 5 kilometres to the south-east and has an estimated population of 28,500.

Itabela is located in a major graphite district with three operating graphite mines. Brazil is the second largest graphite producer in the world and home to the largest producer of high quality graphite outside of China with a history of over 60 years of continuous production.

The district has a well-developed mining culture and excellent project development infrastructure, including:

- 90 kilometres by sealed road to an international airport at Porto Seguro;
- 270 kilometres by sealed road to the deep-water port of liheus (export for final product); and
- Power, labour, water and gas within 5 kilometres of the project area.



Resource Estimate

Approximately 8,000m of drilling has been undertaken at Itabela by Brasil Graphite out of which approximately 4,000m are used for an internal resource estimation. This is currently being converted to a JORC complaint mineral resource, with completion due in November 2015. The average hole depth is 9 metres with a maximum depth to 44 metres.

Metallurgical test work

The Itabela project has been subject to extensive metallurgical testing at bench and pilot scale. More than 31,000 kilograms (31 tonnes) of sample has been pilot tested at Fundação Gorceix, a major mineral research centre located in Ouro Preto, State of Minas Gerais. Several other major Brazilian and peer ASX listed graphite and mining companies utilize Fundação Gorceix as a pilot plant testing facility.

The metallurgical test work was managed by Mr Placido Campos, a registered professional mining and process engineer in Brazil. Mr Campos has more than 30 years' experience and expertise in graphite processing. Mr Campos was previously employed by Nacional de Grafite Ltda, the world's largest graphite producer. Responsibilities included production supervision for major operating units of the company, project management, research development, reaching General Manager of the company. He has also previously worked for Grafite de Brasil (private Brazilian graphite producer) helping optimize their process circuit as well as several other private and listed graphite companies.

The objectives of the pilot test work program were to optimise the positive results from the bench scale test work, including:

- Achieve a high-grade graphite concentrate of greater than 93% and maintain a large flake size distribution;
- Demonstrate that ultra-high purity graphite could be produced from Itabela concentrate; and
- Design a feasibility standard, simple, low cost flotation circuit.

A total of 31,000 kilograms of run-of-mine ore ("ROM"), selected from three locations within the deposit, was mined and sent to the Fundação Gorceix pilot plant for processing.

The Company believes this is one the largest bulk samples and pilot plant tests undertaken by an ASX or TSX listed graphite explorer based on a review of published reports, providing a high quality, reliable set of data that can be used in a feasibility study.

Table 2: Bulk sample locations			
Sample Location	Sample Size (kilograms)		
Sao Rubens East	6,000		
Sao Rubens West	9,000		
Sao Manuel	16,000		
Total	31,000		



The floatation test work demonstrated that jumbo and large flake graphite of high purities could be achieved.

Table 3 demonstrates the distribution of flake sizes and concentrate grades of each fraction as a composite of the three samples based on achieving a minimum concentrate grade of 95%.

Table 3: Itabela Concentrate Minimum +95% Carbon Content				
Flake Size	Mesh Size	Graphite Size (Microns)	Distribution	% Cg
Super Jumbo	30#	>500	4%	95%
Jumbo	50#	>300	32%	95%
Large	80#	>180	27%	97%
Medium	140#	>106	17%	97%
Fine	-140#	<106	20%	97%

As an alternative to producing a 95% concentrate, a +93% carbon content concentrate can be produced to test the flake size distribution in the event of market changes or potential client requests for a lower grade concentrate. Table 4 demonstrates a 10% increase in flake size in the +50# and +80# mesh sizes compared to the minimum 95% carbon content.

Table 4: Itabela Concentrate Minimum +93% Carbon Content				
Flake Size	Mesh Size	Graphite Size (Microns)	Distribution	% Cg
Super Jumbo	30#	>500	4%	95%
Jumbo	50#	>300	37%	93%
Large	80#	>180	32%	93%
Medium	140#	>106	12%	97%

Itabela graphite has also been independently tested by one of the world largest European carbon and graphite users for its expansion properties. Itabela's +50# mesh, 98% carbon content concentrate yielded an expansion volume of 531 cm³/g, demonstrating high quality specifications against industry standards. Testing for volatile matter, leachable chloride and fluoride, moisture and ash content was also performed, yielding favourable results.

The market growth for expanded graphite is expected to be strong, with its electrical and thermal conductive properties suitable for use in fire retardants, foundry materials, graphite foils and batteries.

The high quality and diverse characteristics of Itabela's graphite provides the Company with a significant competitive advantage, due to the graphite's potential use in a wide variety of applications, including the high-value segments.

Flow Sheet Development

A simple process flow sheet comprising vibrating screen, milling, flotation, screening, filtering and drying was developed (Figure 7) from the pilot plant test work. ROM ore is disaggregated prior to primary grinding down to 2.0mm followed by screening into



 $\pm 50\#$ mesh (0.3mm) to separate the larger and finer flake sizes. The $\pm 50\#$ mesh flake was processed separately to preserve the large flake sizes.

The separately screened material was passed through primary floatation, then through successive additional grind and float circuits to upgrade the quality of the concentrate. Several optimisations to test retention times, reagents and milling times were completed.

One of the key advantages of Itabela ore is the ease at which the flakes are liberated from the ore without excessive processing which damages the flake sizes.



Figure 7: Itabela Process Flowsheet

Development plan

Sayona intends to fast track Itabela towards production by completing a Feasibility Study during 2016 followed by construction and production.

Capital Raising

During the quarter, the Company completed a fully underwritten, accelerated rights offering to raise \$2.6 million. The terms of the capital raising, included:

- a 1 for 4 entitlement offer at an issue price of \$0.025 per share;
- 1 free attaching option, exercisable at \$0.03 and expiring 30 December 2016, for every new share applied for;
- the placement of 1,224,116 shares and listed options in respect of underwriting oversubscriptions; and



• the issue of 1,603,522 shares and 6,808,666 listed options in part settlement of raising management and underwriting fees.

Tenement Id	Name	Current Interest	Status
E80/4915	Keller North	0%	Option to acquire
E80/4948	Keller West	0%	Application
E80/4949	Corkwood	0%	Application
E80/4511	Western Iron	0%	Option to acquire
872874/2010	Brasil Grafite S.A.	0%	Option to acquire
872737/2010	Brasil Grafite S.A.	0%	Option to acquire
872736/2010	Brasil Grafite S.A.	0%	Option to acquire
872735/2010	Brasil Grafite S.A.	0%	Option to acquire
872734/2010	Brasil Grafite S.A.	0%	Option to acquire
872733/2010	Brasil Grafite S.A.	0%	Option to acquire
872732/2010	Brasil Grafite S.A.	0%	Option to acquire
872329/2010	Brasil Grafite S.A.	0%	Option to acquire
872328/2010	Brasil Grafite S.A.	0%	Option to acquire
871722/2010	Brasil Grafite S.A.	0%	Option to acquire
871524/2013	Brasil Grafite S.A.	0%	Option to acquire
871053/2011	Brasil Grafite S.A.	0%	Option to acquire
871052/2011	Brasil Grafite S.A.	0%	Option to acquire

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Sayona Mining Limited is an Australian, ASX-listed, company focused on sourcing and developing high purity flake graphite for use in the rapidly growing new technology sectors.

Please visit us as at www.sayonamining.com.au



Previous Disclosure - 2012 JORC Code

Certain Information relating to Mineral Resources, Exploration Targets and Exploration Data associated with the Company's projects in this September 2015 Quarterly Report has been extracted from the following ASX Announcements:

8 July 2015 - Strategic Entry into the Graphite market

9 July 2015 – Geophysics Highlights Prospective Targets

- 10 July 2015 Jumbo and Large Flake Graphite Identified at East Kimberley project
- 20 July 2015 Drill Target and Metallurgy Program
- 21 August 2015 High Grade Graphite Mineralisation Identified at Corkwood
- 19 September 2015 Superior Quality Graphite Demonstrated at Itabela Project
- 28 September 2015 Itabela Produces High Value Expandable Graphite
- 21 October 2015 Corkwood Geophysical Survey Completed Anomalies Defined

Copies of these reports are available to view on the Sayona Mining Limited website www.sayonamining.com.au. These 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. 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