

# Archer June 2014 Quarterly Activities Report



ASX Code: AXE

## Directors

Greg English  
*Chairman*

Gerard Anderson  
*Managing Director*

Tom Phillips AM  
*Director (Non-Executive)*

Alice McCleary  
*Director (Non-Executive)*

## Company Secretary

Craig Gooden

## Shares on Issue

84.3 million

## Unlisted Securities on Issue

2.4 million Performance Rights

## Key focus

Campoona and Sugarloaf Graphite Projects (Eyre Peninsula, South Australia).  
Second tier projects cover magnesite, manganese, copper and gold.

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## HIGHLIGHTS FOR THE JUNE 2014 QUARTER

Archer Exploration's strategy is to identify and acquire resource projects, create value through defining resources, developing mining plans and then crystallising value through divestment or strategic partnerships.

The current portfolio consists of 3 main project opportunities:

### GRAPHITE

- Campoona Mine Lease Proposal studies are 70% complete and on track for submission September/October 2014.
- Central Campoona graphite drilling results received with an updated JORC 2012 Resource planned for Q3 2014.
- Samples of final Campoona concentrate being evaluated by a number of companies with a view to either off-take or project investment opportunities.
- A production water bore and a monitoring bore were successfully installed at Pindari. Pump testing indicates abundant saline water is present that will provide a long-term supply of process water for the Sugarloaf processing facility
- Archer entered into a Sale and Purchase agreement to buy the Waddikee Tenement from Monax Mining Limited and expects to finalise the deal in Q3 upon Ministerial consent. Testing of Wilclo South and Francis samples recovered large, medium and fine flake graphite at commercial grade.
- Historic testing suggests the presence of large and jumbo flake graphite also at Argent, Balumbah and Cut-Snake prospects.
- Excellent progress made in graphene research indicating specific possible commercial opportunities.

### MAGNESITE

- The Complaint lodged against the Mt Hutton portion of the greater Leigh Creek magnesite deposit was withdrawn and Archer has recommenced its strategic review in respect of the project.
- Magnesium Developments Limited (MDL) has commenced an additional action in the Supreme Court for an amount of \$250,000. Archer is defending the claim and continuing to negotiate with MDL for a resolution.

### GOLD

- The Bartels Gold project reported gold intercepts from its drilling at EPIRC14\_002 with
  - 22m @ 0.33g/t Au from 0m down hole, and
  - 8m @ 0.14g/t Au from 26m down hole.

### FINANCIAL

- Cash in bank on 30th June 2014 of \$5.565 million.
- \$934,000 was spent on exploration and project evaluation during the quarter.



## Summary of the June 2014 Quarter Exploration Activities

### 1. Graphite

#### a. CAMPOONA MINE LEASE PROPOSAL

Studies required to support the upcoming Mining Lease Application and PEPR progressed throughout the Quarter. As at 30 June the MLP was approximately 70% completed and plans remain on track to lodge the MLP in September/October 2014.

**Table 1. MLP Progress**

<b>Ecology</b>	Spring & Winter baseline surveys	✓ Completed
	Impact assessment	✓ Completed
<b>Air quality</b>	Project reviewed & GAP analysis	✓ Modelling being finalised
<b>Hydrogeology</b>	Desktop study completed	✓ Completed
<b>Geochemistry</b>	Draft report completed	✓ AMD testing underway
<b>Socio-Economic &amp; Community Consultation</b>	Stakeholder engagement plan	✓ 5 x bi-monthly newsletters
	Community newsletters	✓ 5 x CCC Meetings completed
	Bi-Monthly CCC meetings	✓ Community open days planned
<b>Surface Water</b>	Desktop study	✓ Completed
<b>Visual Amenity</b>	Fieldwork completed	✓ In progress
<b>Tailings Management</b>	Tailings workshop	✓ Tailings Option Assessment
	Tailings Option Assessment	✓ Characterisation in progress
<b>Mine Closure Plan</b>	Information review & gap analysis	✓ Mine plan outstanding
<b>MLP &amp; PEPR</b>	Kick-off meeting Table of Contents	✓ Awaiting final mine plan and tailings review
<b>Regulator Liaison</b>	Meetings with government stakeholders undertaken	✓ Regular meetings
<b>Permitting Review</b>	Draft Permit Register completed in February 2014	✓ Completed
<b>Cultural Heritage</b>	Desktop cultural heritage study	✓ Completed
<b>Noise</b>	Review of various project documents and gap analysis	✓ Desktop modelling and reporting in progress
<b>Traffic</b>	Desktop traffic study	✓ Completed



## b. CAMPOONA GRAPHITE

### Campoona Graphite Marketing

Late in the Quarter Archer provided samples of final Campoona graphite concentrates to a number of international companies for them to conduct detailed testing as a possible pre-cursor to entering into either off-take agreements or taking a direct equity stake in the project.

### Central Campoona Drilling Results

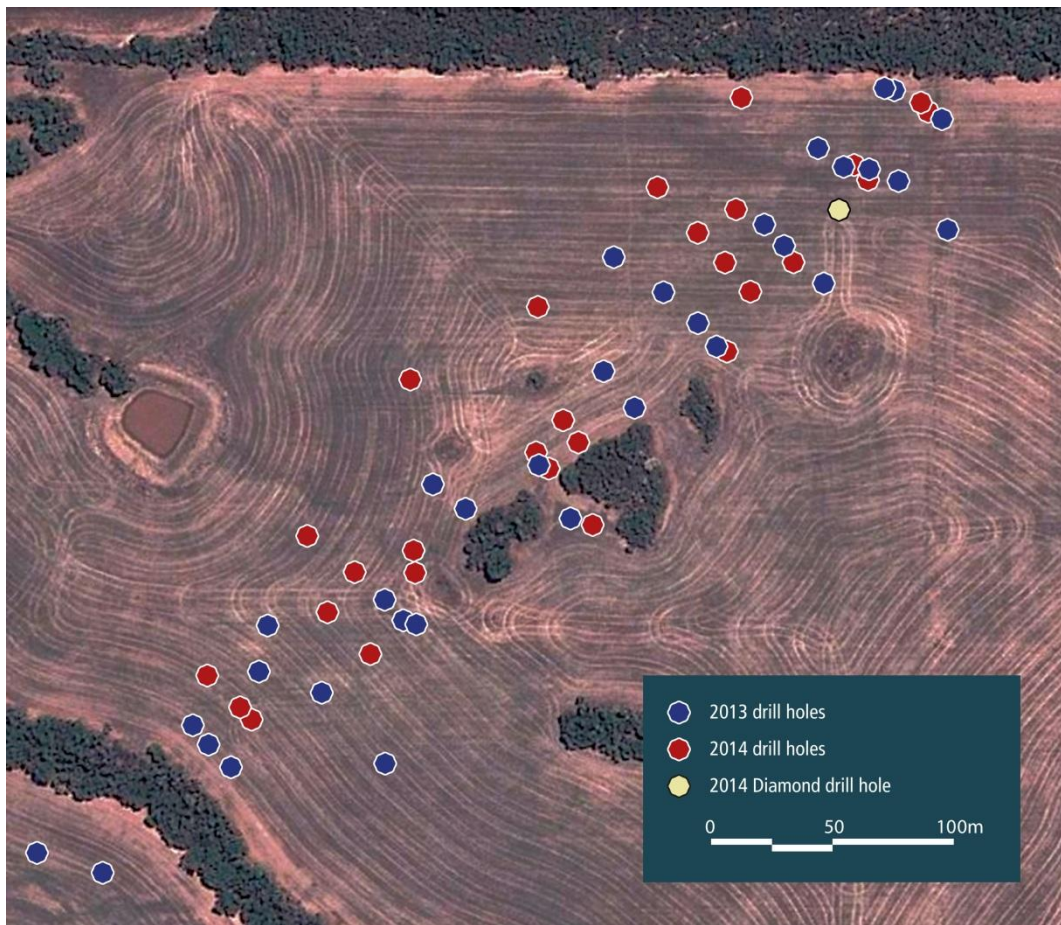
A total of 28 Reverse Circulation (RC) holes (1,447m) and one Diamond Drill Hole (DD) were drilled early in 2014 as a part of the recommendations from the maiden JORC 2012 Central Campoona Resource Estimate. The holes provided additional geological data and assay data to improve the estimation confidence and possibly allow for a higher confidence resource classification. Table 1 presents the intervals reporting above 10%CG.

Hole ID	Depth From	Depth to	Interval (m)	Cg %
CSRC14_004	1	19	18	11.1
CSRC14_005	52	69	17	16.7
CSRC14_006	16	24	8	11.5
CSRC14_007	32	58	26	12.4
CSRC14_008	54	84	30	12.7
CSRC14_009	1	11	10	11.3
CSRC14_018	35	42	7	13.7
CSRC14_021	52	81	29	11.3
CSRC14_022	52	81	29	11.5
CSRC14_024	111	119	8	11.7
CSRC14_026	80	97	17	12.2
CSRC14_027	88	97	9	11.8
CSRC14_028	85	116	31	12.8
CCDD14_01	0	66	66	10.1

**Table 1. Central Campoona drill intervals reporting above 10%Cg\***

*\*(For information relating to the reporting of the drill results presented above, please refer to ASX release 24<sup>th</sup> April 2014, JORC Table 1.)*

Figure 1, below shows the location of the holes drilled in 2014, relative to previous drilling in the same area of Central Campoona.



**Figure 1. Location of holes drilled at the North end of Central Campoona**

## **Metallurgical program on composite auger sample from Campoona Shaft**

Archer's ongoing metallurgy investigations advanced into flowsheet optimization and collection of process criteria for plant design.

Preferred process operations are being thoroughly and systematically tested with a sample which represents the carbon grade and gangue mineralogy of 'starter' pit zone at the Campoona Shaft deposit.

Important advances included simplification of primary and secondary grinding and the characterisation of grade recovery response with concentrate grind size.

Test reproducibility has been excellent throughout rougher and cleaner flotation and has allowed further optimization of collector and frother dosages. Optimization of cleaning the final concentrate will continue through the planned program of re-grinding and re-flotation investigation.

All testing is now being conducted with water sourced from an aquifer at Pindari approximately 4km from the proposed plant location at Sugarloaf. The use of saline water has introduced a number of key benefits, namely:

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- The grade-recovery results from beneficiation tests (grinding and flotation) show little difference between the water sources.
- The use of saline groundwater will significantly reduce the consumption and hence cost, of using potable water.
- Saline water effectively disperses problematic clay mineral during flotation enabling a relaxation of reagent rates of alkaline chemicals into process slurries.

The 'front-end' pilot scale testwork campaigns commenced with blending and primary comminution of approximately 4.5 tonnes of Campoona composite mineralization at ALS laboratory in Adelaide.

A 600 kg portion of this composite sample, at 100% passing 0.6 mm, was dispatched for large bulk flotation test at MBE-CMT laboratory Cologne.

A campaign of 'washing' the clay-rich ore in place of higher cost coarse grinding is being planned to treat a second portion of the same composite sample.

Following optimization of the flotation conditions based on small batch tests, a preferred laboratory will be awarded the 'downstream' testwork, including slurry classification and multi-stage cleaner flotation.

Further concentrate 'polishing' tests will follow this planned program of flowsheet development.

Testwork on tails slurry is planned during the next quarter to support design of the storage facility

## Process Water

Two holes were drilled to depths of 121 and 91m to test for flow rates and water quality as a potential source of water for graphite processing future based at Sugarloaf. The 121m hole was established as the primary production bore and the 91m hole as the monitoring hole. Pump testing over 48 hours tested a number of abstraction rates ranging from 3-7 litres per second. Drawdown stopped at abstraction rates of 5 litres per second with recharge below 4 litres per second. The testing indicated a sustainable abstraction rate of 5 litres per second which is significantly in advance of the estimated process water requirements for Campoona graphite processing.



**Plate 1. Pindari production water bore (foreground) and monitoring bore**

SA Water provided a Supply Contract to supply the Sugarloaf processing facility with a potable water allowance of 40 megalitres per annum which can be increased to 80 megalitres per annum should the need arise. With the water supply from Pindari, Archer will only need potable water for final concentrate washing.

## **c. PURCHASE OF WADDIKEE FROM MONAX MINING LIMITED**

On the 19<sup>th</sup> June 2014 Archer advised the ASX that it had completed due diligence under the Sale and Purchase Agreement with Monax Mining Limited ("Monax") and the Company indicated it would proceed with the purchase of Monax's Waddikee Exploration Licence EL4662. Archer's primary interest in acquiring Waddikee is in the known flake graphite deposits occurring on the tenement and in the large number of significant EM conductors that remain undrilled.

The purchase remains conditional on the Minister consenting in writing pursuant to the Mining Act to the Sale and Purchase Agreement and the transfer of all legal and beneficial interest in Waddikee EL4662 to Archer. That consent is expected early in Q3 2014.

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## Waddikee EL4662

Waddikee EL4662 is located between the townships of Cleve and Kimba on central Eyre Peninsula (Figure 2). The 999km<sup>2</sup> tenement is situated immediately north of Archer's main graphite interests on EL4693 Wildhorse Plain. Waddikee is highly prospective for graphite, manganese, iron (magnetite and hematite), gold and base metals (Ag-Pb-Zn-Cu).

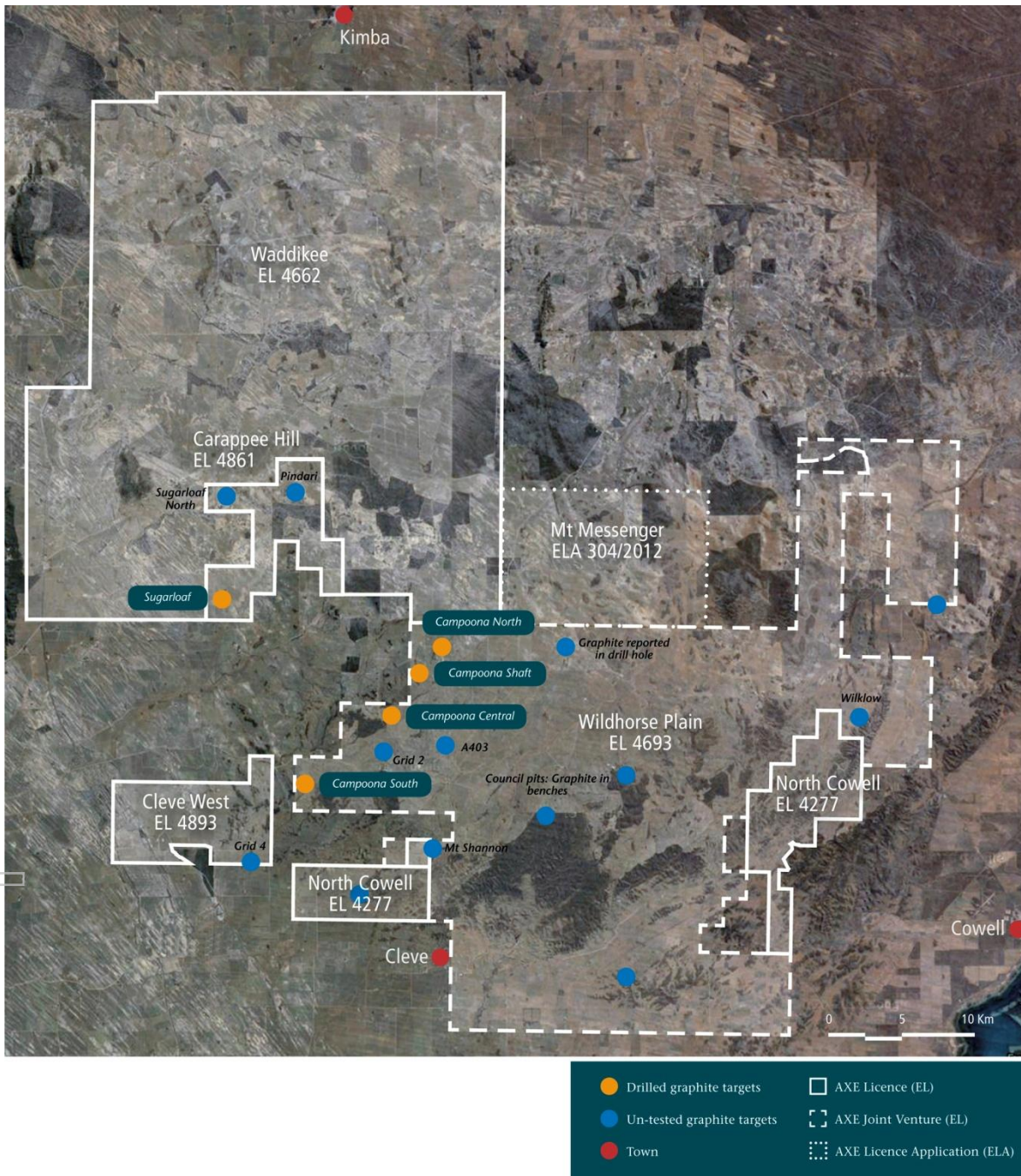


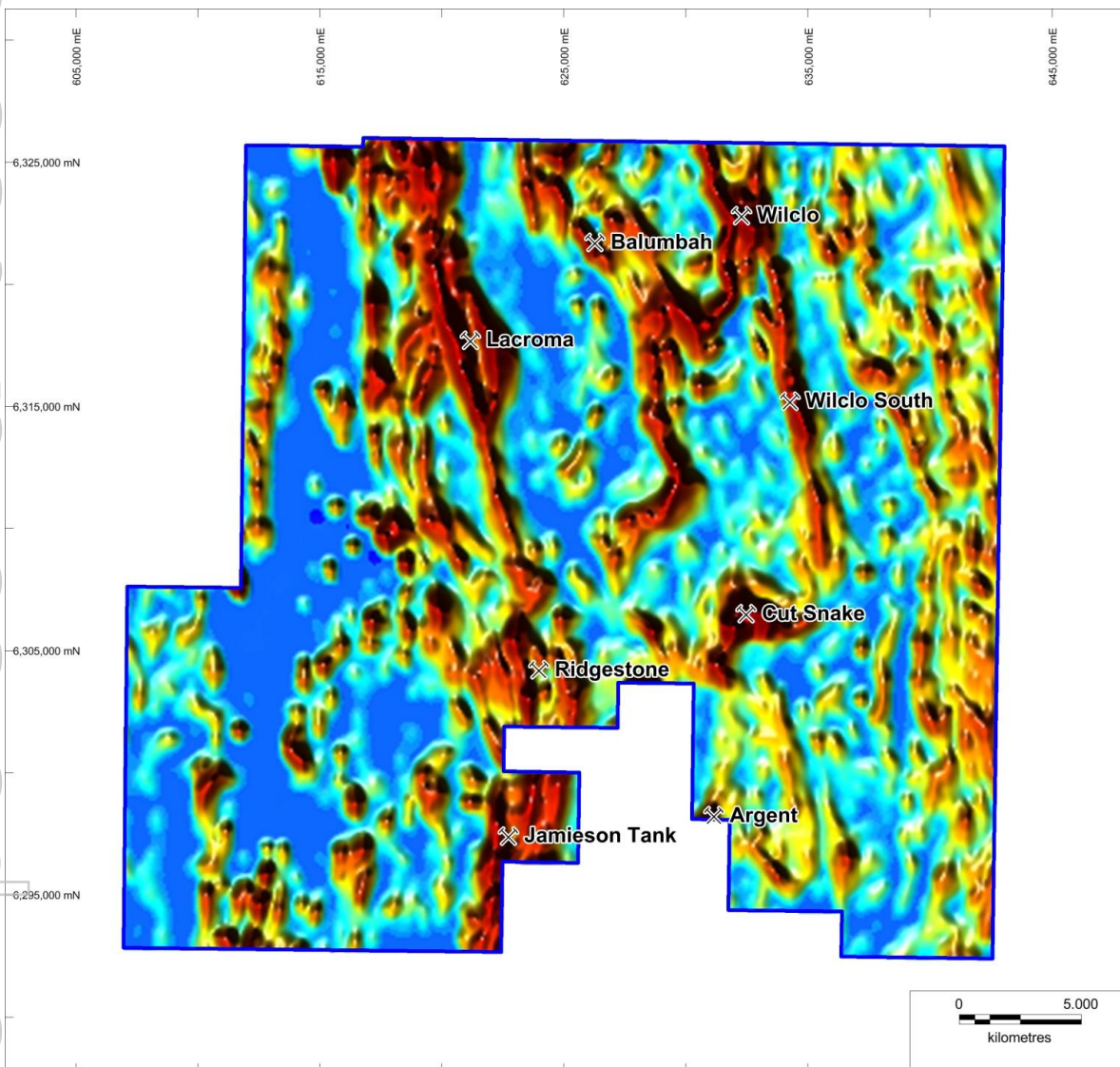
Figure 2. Location of Waddikee EL4662 relative to Archer's other graphite tenements.



## Waddikee Graphite

Waddikee has a number of graphite deposits and prospects that have been evaluated using combinations of geophysics (airborne magnetic and electromagnetic surveys) rock chip sampling, detailed petrology and drilling.

Rock chip sampling by Monax returned high grade graphite at the Argent, Wilclo, Cut Snake, Balumbah and Lacroma prospects.



**Figure 3. Key graphite deposits and prospects on Waddikee EL4622**

Petrology from several samples showed the presence of large and jumbo flake graphite at the Argent, Balumbah and Cut Snake prospects.

The graphite morphology at Waddikee contrasts to that at Campoona. Graphite at Waddikee is:



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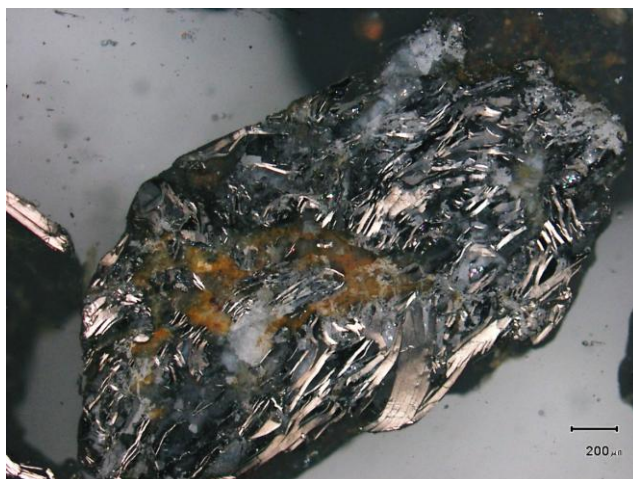
1. Clearly coarser than at Campoona with flake graphite mostly exceeding 200 $\mu\text{m}$  with some flake exceeding 500 $\mu\text{m}$ .
2. Flake graphite occurs as individual coarse flakes, as aggregates of flakes and as massive graphite aggregates.
3. Apart from flake, graphite also occurs as finer ragged flake aggregates of various sizes.

The morphology and coarse nature of Waddikee graphite from Wilclo South and Francis deposits is clearly shown in Plates 2 – 5 below.



**Plate 2. Hole WG103, 33- 34m**

(PPL), (Xnic). Schistose graphite within metamorphic mosaic of white ghost-like clays ex-felspar ( $\pm$  minor micas). Accessory interstitial quartz. Scale bar 200 microns.



**Plate 3. Hole WG091, 44-46m**

Composite particle with  $\sim$  35% graphite in a host rock of yellow iron-stained clay, minor white clay and quartz. Scale bar 200 microns.



**Plate 4. Hole WG044, 73-74m**

(PPL), (Xnic). Graphite scattered as individuals and composites, all enclosed within ochreous-red ferruginised ex-felspars and local micas. Scale bar 200 microns.



**Plate 5. Flake aggregates from RC drill hole WG041 (98-99m).** Scale bar in centimetres.

The rock chip sampling and detailed petrology has been supported by airborne magnetic and electromagnetic (AEM) data that showed that each of the graphite prospects was located within areas of distinctive linear conductive features.

Subsequent work by Monax increased the number of graphite prospects to eight.

In July 2012 Monax drilled 40 reverse circulation drill holes for 2,908 metres on five of the graphite prospects. From this drilling Monax identified the Wilclo South, Francis and Lacroma prospects as high priority exploration targets.

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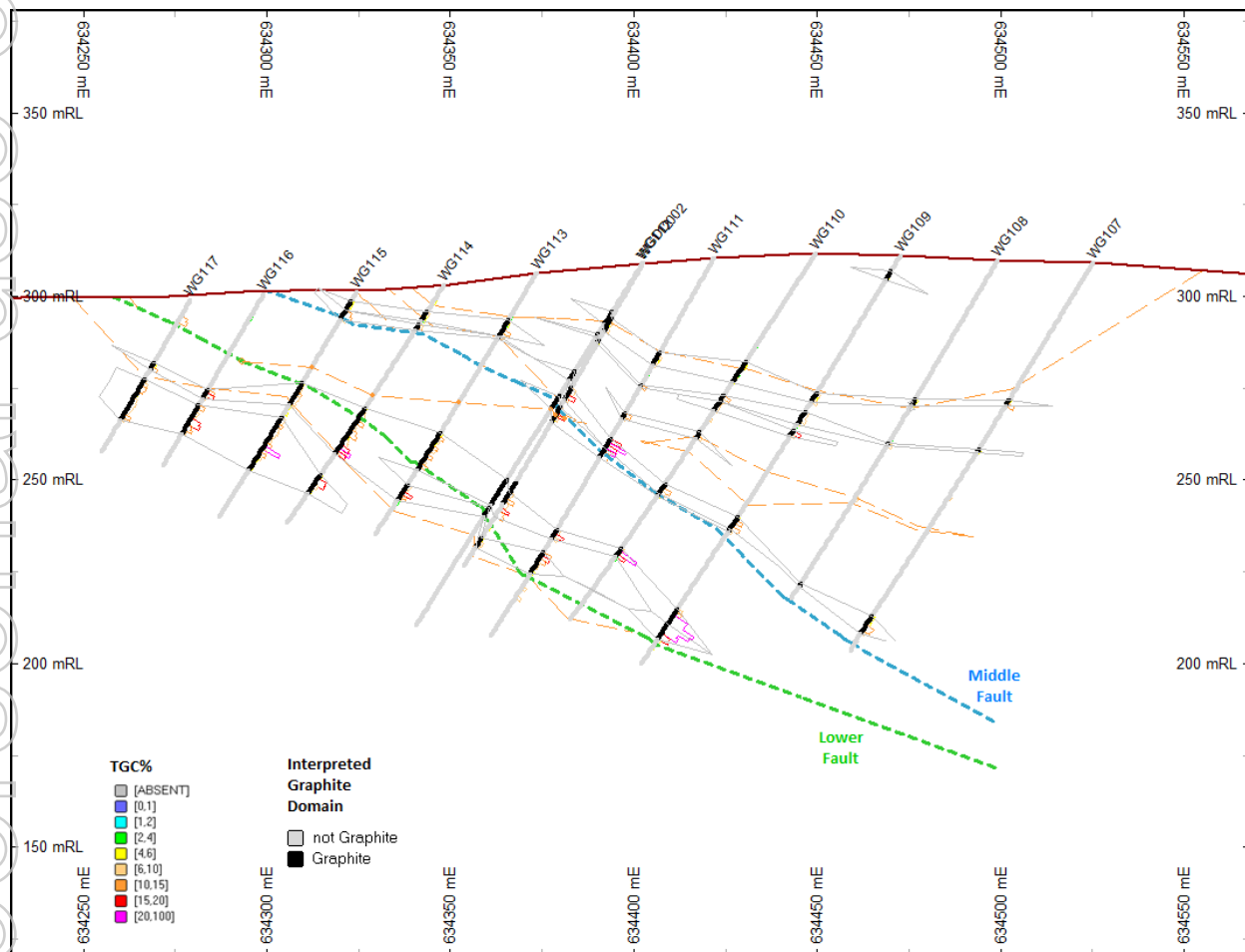
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## Wilclo South 2012 JORC Indicated Resource

In February 2013 Monax completed 77 reverse circulation drill holes for 7,307 metres over 1.4km of the Wilclo South graphite prospect. The drilling identified multiple shallow dipping graphite horizons.

Graphite mineralisation at Wilclo South is divided into upper and lower lenses separated by two low angle thrust faults.



**Figure 4. Wilclo South interpreted geology showing graphite lenses separated by the Middle and Lower thrust faults.**

Drilling was conducted on a combination of 200 metre, 100 metre and 75 metre line spacings. All resources are at Inferred category.

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## Wilclo South Inferred Mineral Resources (no lower cut-off applied)\*

Fault Zone	Oxidation State	Tonnage (Mt)	TGC (%)	Density (t/m <sup>3</sup> )
Upper Block	Oxide	1.32	7.3	2.3
	Fresh	3.56	7.4	2.3
Middle Block	Oxide	0.39	7.9	2.1
	Fresh	1.83	9.2	2.1
Lower Block	Oxide	0.32	7.1	2.1
	Fresh	0.40	8.5	2.1
Subtotals	Oxide	2.02	7.4	2.2
	Fresh	5.79	8.0	2.3
<b>Total Inferred (no cut-off)</b>		<b>7.81</b>	<b>7.9</b>	<b>2.2</b>

\*This information was prepared and first disclosed under the JORC Code 2012 (Monax Mining Limited, ASX Announcement 26th August 2013). It has not been updated since on the basis that the information has not materially changed since it was last reported.

## Wilclo South Inferred Mineral Resources (>5% TGC cut-off)

Fault Zone	Oxidation State	Tonnage (Mt)	TGC (%)	Density (t/m <sup>3</sup> )
Upper Block	Oxide	1.02	8.4	2.3
	Fresh	2.67	8.7	2.3
Middle Block	Oxide	0.36	8.2	2.1
	Fresh	1.72	9.5	2.1
Lower Block	Oxide	0.25	7.9	2.1
	Fresh	0.36	9.1	2.1
Subtotals	Oxide	1.63	8.3	2.2
	Fresh	4.74	9.0	2.2
<b>Total Inferred (no cut-off)</b>		<b>6.38</b>	<b>8.8</b>	<b>2.2</b>

## Wilclo South Inferred Mineral Resources (>10% TGC cut-off)

Fault Zone	Oxidation State	Tonnage (Mt)	TGC (%)	Density (t/m <sup>3</sup> )
Upper Block	Oxide	0.25	11.9	2.3
	Fresh	0.76	11.9	2.3
Middle Block	Oxide	0.07	12.0	2.1
	Fresh	0.60	13.3	2.1
Lower Block	Oxide	0.03	11.8	2.1
	Fresh	0.08	14.3	2.1
Subtotals	Oxide	0.33	11.9	2.2
	Fresh	1.43	12.6	2.2
<b>Total Inferred (no cut-off)</b>		<b>1.75</b>	<b>12.5</b>	<b>2.2</b>



Wilclo South currently contains over 560,000 tonnes of contained graphite. The deposit is open to both the north and south. It is reasonable to expect that additional drilling at Wilclo South will increase the graphite inventory.

The Francis deposit contains very high grade graphite intercepts including 15m @ 20.7% TGC; 12m @ 21.9% TGC; 3m @ 22.2% TGC, and 2m @ 25.0% TGC. The intercepts are downhole intervals and may have intersected the mineralisation at a high angle.

Drilling at Lacroma also returned solid intercepts including 60m @ 6.8% TGC. The graphite from the limited petrology undertaken suggests very fine graphite.

Rock chip sampling at Balumbah returned grades in excess of 13.7% TGC but importantly petrology recorded very coarse flake graphite.

The airborne EM data suggests that there are several kilometres of prospective linear conductors that remain to be drill tested.

## ***Waddikee Metallurgy***

Archer evaluated the metallurgical performance of Waddikee prior to committing to purchase the tenement. Approximately 20 kilograms of sample was collected from selected drill holes at Wilclo South and Francis. Samples were taken by scoop from individual sample bags and combined to form one sample for metallurgical testing.

The yield of flake obtained was calculated about 20% (+/- 5%) of the available elemental carbon at 90% grade cut-off.

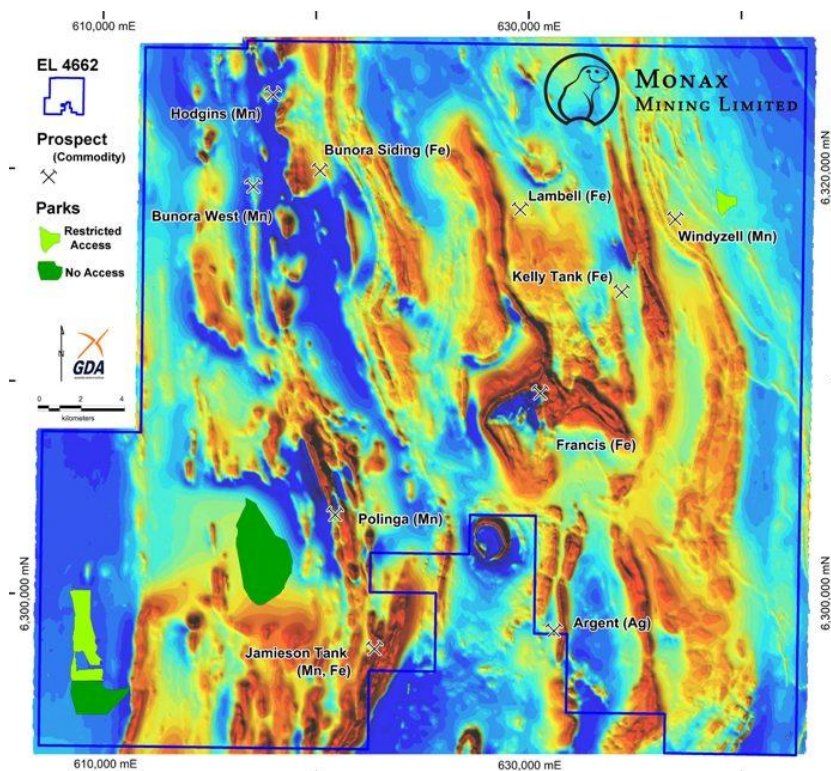
Gravity testing was performed on three size fractions of +150, +106 and +75 microns. The highest grade was achieved in the middle size range of +106  $\mu\text{m}$  to 93.1% TGC at an overall grade of final products 89.9%. Similar good results were obtained in other size ranges, with an overall grade of 91.9% TGC for +75  $\mu\text{m}$  and 86.7% TGC for +150  $\mu\text{m}$ .

The potential yield of combined flake increases to around 32% at about 85% grade cut-off into 20-25% of the sample weight.

The flotation response of this chip sample was about 90% grade at 75% recovery, (test CN7); after passing through roughing plus 3 stage cleaning, following regrinding to about 400 mesh, 38 microns.

## ***Waddikee Manganese and Iron***

The Waddikee project has strong potential for iron and manganese mineralisation within the Palaeoproterozoic Hutchison Group metasedimentary rocks. More than 80km of strike length of the host sequence, including banded iron formation (BIF), occur throughout the tenement. The BIF sequences are clearly evident as long curvi-linear highs within Monax's 100m line spaced aeromagnetic data (Figure 2). Rock chip sampling by Monax identified a number of iron (hematite) and manganese prospects within the tenement.



**Figure 5. Total Magnetic Intensity (TMI) image showing BIF sequences and Monax's iron and manganese prospects.**

Monax completed 13,204 metres of RC Air Core and Percussion drilling across the project primarily evaluating the potential for economic manganese mineralisation.

The Jamieson Tank manganese prospect in the south west of the tenement comprises over 5km strike of banded iron formation. Manganese mineralisation occurs along strike parallel bands on either side of the BIF sequence and extends well into EL4693 Wildhorse Plain. Archer has the rights to all minerals other than uranium on EL4693.

Significant manganese results reported by Monax included:

- 10m @ 17.5% Mn (JTRC069 26-36m) including 2m @ 26.7% Mn (26-28m)
- 5m @ 19.2% Mn (JTRC119 14-19m)
- 7m @ 17.1% Mn (JTRC121 22-29m)
- 4m @ 14% Mn (PRC003 25-29m) and 6m @ 16% Mn (PRC003 31-37m).
- 3m @ 19.8% Mn (JTRC057 18-21m)

Manganese beneficiation test work undertaken by Amdel Laboratories demonstrated the ability to significantly improve the manganese grades with effective removal of iron and silica. Results from this beneficiation include:

- JTRC034 (14-21m) – initial Mn grade of 18.7% Mn was upgraded to 34.7% Mn (88.2% recovery); and
- JTRC036 (8-13m) – initial grade of 20.3% Mn was upgraded to 42.5% Mn (80.96% recovery) – see ASX Release 18 December 2008 for full details of the beneficiation.



Significant intersections of iron include:

- 44m @ 34.6% Fe (PRC001 25-69m)
- 17m @ 31.6% Fe (JTRC011 3-20m)
- 12m @ 33.8% Fe (JTRC012 18-30m)
- 17m @ 31.6% Fe (JTRC013 33-50m)
- 24m @ 28.4% Fe (JTRC014 54-78m)
- 17m @ 33.3% Fe (JTRC041 9-26m)
- 20m @ 33.8% Fe (JTRC042 20-40)
- 16m @ 34.6% Fe (JTRC043 43-59m)
- 12m @ 34.8% Fe (JTRC044 67-79m)
- 20m @ 32.1% Fe (JTRC054 5-25m) and 8m @ 25.9% Fe (JTRC054 31-39m)

The iron potential of the Waddikee tenement has not yet been fully tested.

## d. RESEARCH & DEVELOPMENT

The joint graphene research funded by Archer Exploration through the University of Adelaide has generated excellent first outcomes. The \$200,000 research funding over two years helps support a graphene research team at the School of Chemical Engineering under Professor Dusan Losic.

Archer was first approached by the University of Adelaide in late 2013 to provide samples of raw graphite and graphite concentrates to determine their amenability to produce graphene. That initial investigation provided rapid confirmation that graphene (and other graphite derivative products) could be readily extracted from Archer's graphite. That work produced a wide number of graphene and intercalated graphite products from raw Campoona graphite and from Campoona medium-grade (92% C) graphite concentrates. Key products produced were:

- Graphene oxide sheets
- Graphene sheets
  - Graphene nanosheets with controllable size (20 nm to 1,000 nm)
  - Functionalised graphene nanosheets
  - Graphene powders
  - Graphene films
  - Graphene membranes
  - Graphene electrodes
  - Graphene nanocarriers
- Graphene based composites
  - Graphene aerogel composites
  - Graphene conductive hydrogels
  - Graphene/carbon nanotube aerogels
  - Graphene magnetic aerogels
- Intercalated graphite

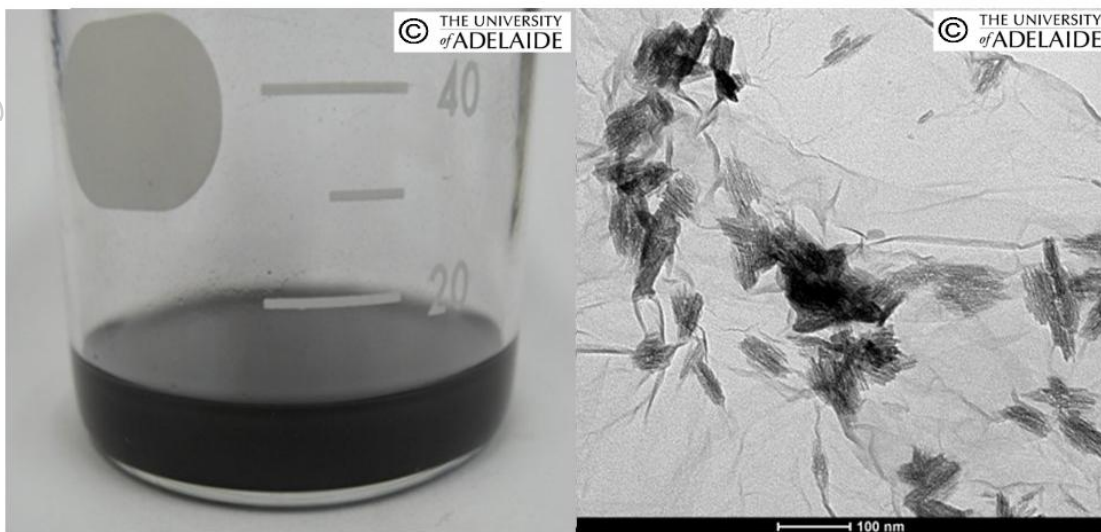


Plate 6. Prepared graphene nanosheets in solution from raw Archer Campoona graphite.

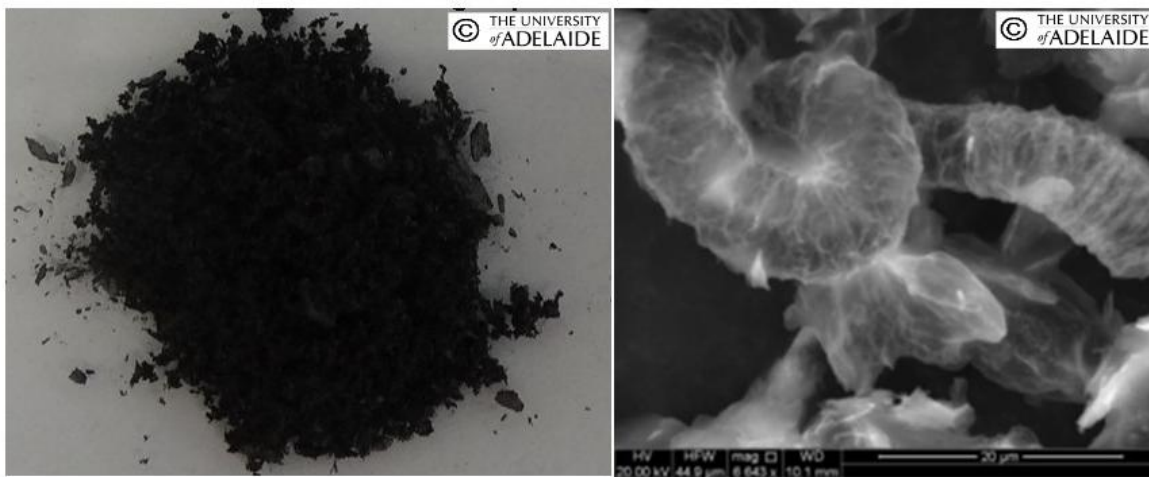
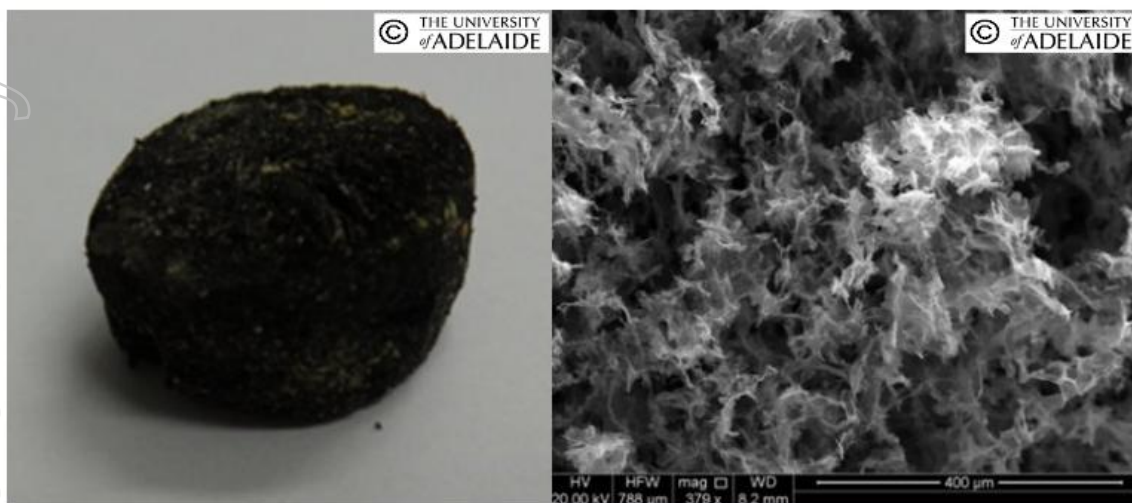


Plate 7. Prepared intercalated graphite microparticles (left) with characteristic worm-like structure (right) from 92% C concentrate

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**Plate 8. Prepared graphene aerogel filters for water and air purification from raw Campoona graphite**

The ready ability of Campoona graphite and Campoona graphite concentrates to deliver a wide spectrum of graphene and graphene-related products greatly enhances the probability of Archer being able to deliver two 15-20 year business streams – high grade to ultra pure fine natural flake graphite, and, the separate manufacture of high tech high-value graphene products.

Archer's research is clearly focused on the development of scalable production of graphene from its South Australian graphite deposits and graphene's broad industrial, environmental and agricultural applications.

Key outcomes thus far have included:

- Graphite samples from Archer's Campoona and Sugarloaf graphite deposits have been characterized to determine mineral composition, graphitic carbon concentration and impurities as inputs into optimising processing conditions for the production of graphite concentrates and graphene based products. The results confirmed high concentrations of graphitic carbon critical for the production of high quality graphite.
- Campoona and Sugarloaf graphitic ores readily produce graphene.
- Early research using Archer graphene has demonstrated excellent performance in new adsorbents for water purification, in the removal of spilled oils from water, for the removal of toxic metals from waste waters, in soil remediation and in agricultural applications. Further research will be directed at identifying potential commercial developments.
- Archer's sponsored graphene research was presented by the University team at the Nanotech USA 2014 Conference in Washington from the 15-18<sup>th</sup> June 2014. The conference is one of world's biggest Nanotechnology conferences. The University team presented two papers from the graphene research showing a new and green approach for the reduction of graphene oxide nanosheets using non-aromatic amino acids which can be used for production of graphene and graphene oxide with controllable size and chemistry of nanosheets. The second paper outlined the development of Graphene composite hydrogels and aerogels for selective removal of oils and organic contaminants.



## 2. MAGNESITE

Archer owns the world's largest cryptocrystalline magnesite deposit which is at Leigh Creek.

Magnesium Developments Limited ("MDL") a wholly owned subsidiary of Foyson Resources Limited lodged a Plaint in the Wardens Court on 5th December 2013. The lodging of the Plaint effectively put on hold Archer's advanced plans for its greater Leigh Creek magnesite project. Archer Exploration successfully had the Plaint withdrawn prior to the hearing commencing.

With the Plaint withdrawn, Archer has recommenced its development strategy with Ernst & Young appointed Lead Advisor in Archer's strategic review of the Company's 100% interest in Leigh Creek Magnesite Pty Ltd.

MDL has commenced an additional action in the Supreme Court for an amount of \$250,000, claiming that Archer made a binding offer to settle the Warden's Court dispute. Archer will defend the claim, and is negotiating to settle the claim.

## 3. GOLD

Archer has an emerging gold prospect at Bartels on Wildhorse Plains.

Drilling at Bartels successfully defined anomalous gold within a north dipping, westerly plunging orientation. The mineralisation is hosted within a highly altered dolomite. Gold intercepts included 22m @ 0.33g/t Au from the surface in EPIRC14\_002.

The highly anomalous epithermal gold mineralization is likely to exhibit strong vertical zonation where gold tenor may transition over relatively short vertical distances. Parkinson Dam is an example of the style of mineralisation being explored.

The following plates (6 to 9) are examples of rock textures that exist along strike from Bartel's and are indicative of boiling systems that are required for the development of low sulphur epithermal gold mineralisation. Identifying these textures is important in identifying future drill targets as they are limited in their surface extent within the highly weathered terrain.



Plate 6. Bladed silica textures Plate 7. Other Silica textures

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**Plate 8. Polymict Breccias**



**Plate 9. Breccia**

Mapping and soil sampling along the strike will help further define the mineralisation 'footprint' prior to drilling of deeper holes.

*(For information relating to the reporting of the drill results presented above, please refer to ASX release 28<sup>th</sup> May 2014, JORC Table 1.)*

## **4. FINANCIAL**

The Company's cash balance at the end of the quarter was \$5.565 million.

\$934,000 was spent during the quarter on exploration and development activities.

## **5. TENEMENTS**

Archer made application under the ERA (Exploration Release Area) process for ground east of Pt Pirie covering magnesite beds at Collaby Hill. Subsequently an ELA (2014/0070) has been commenced for this ground which contains magnesite beds that strike for over +10km.

Collaby Hill is likely to be an important addition to Leigh Creek offering high grade, low silica magnesite within 15 kilometres of Port Pirie.

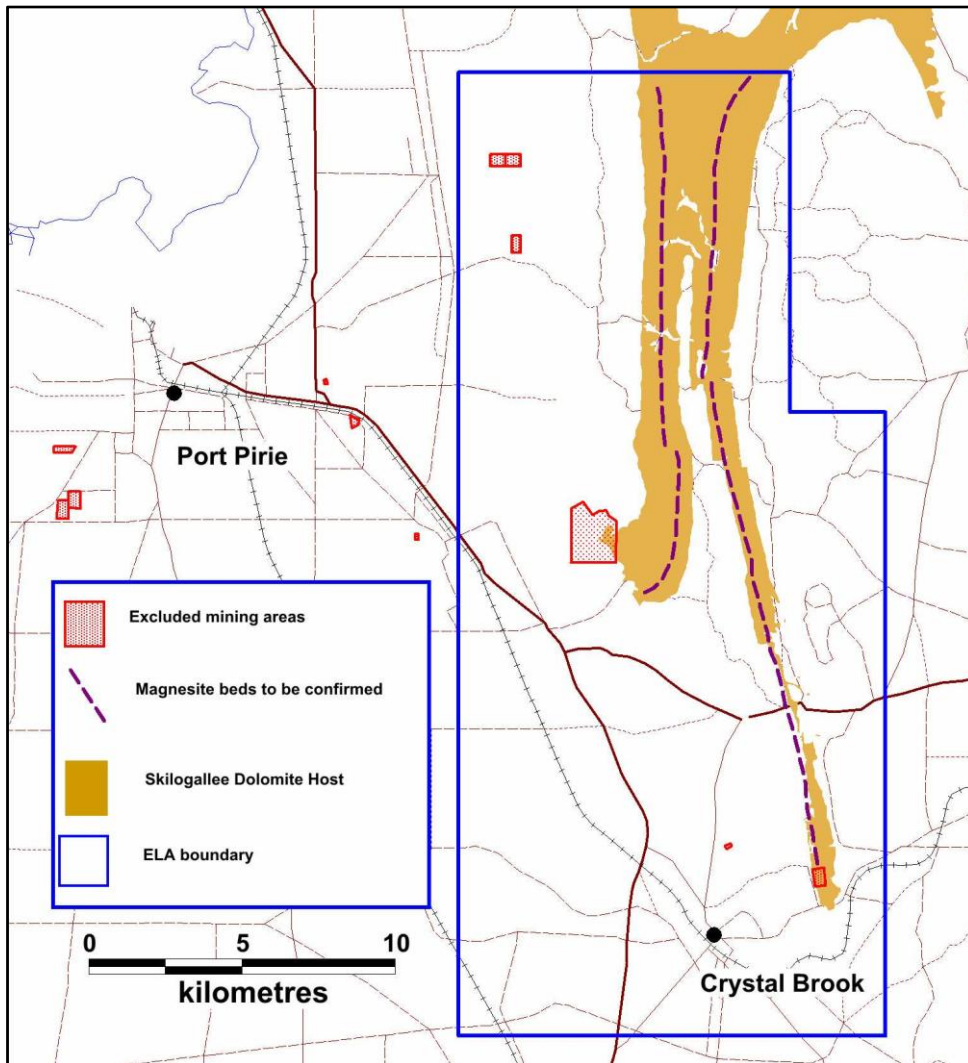


Figure 5. ELA 2014/70 Collaby Hill

## 6. ACTIVITIES FOR JUNE QUARTER 2014

Marketing of Campoona Shaft graphite concentrates will continue. Up-scale testing will continue to refine the treatment process flowsheet. Pilot scale testing will continue.

AMC Consultants have been engaged to complete the detailed mine design for Campoona Shaft.

Campoona Shaft and Central Campoona will have resource estimates completed to JORC 2012 standard. Once the Waddikee transaction is completed it will allow a combined JORC 2012 Resource statement.

Community consultation will continue right up to the point of submission of the Mining Lease Application and PEPR. The Community Consultative Committee ("CCC") meets every 2 months and Community Newsletters are distributed prior to each CCC meeting.

# Archer June 2014 Quarterly Activities Report



Studies to support the Mining Lease Application will continue throughout the September 2014 quarter.

Archer will work with Ernst & Young to complete a strategic review of the Leigh Creek magnesite project.

## 7. SUMMARY OF ACTIVITIES BY TENEMENT

The Company's interest in tenements is as follows:

All tenements are located in South Australia, are owned 100% other than as marked \* which is a joint venture to earn 100% of any minerals excluding Uranium. There has been no change in the tenement ownership during the quarter.

Commodity	Project	Tenement	Work undertaken during the quarter
Graphite	Carrappee Hill	EL4861	See report
Graphite	Wildhorse Plains	EL4693*	See report
Graphite	Mt Shannon	EL4673	No work undertaken in the quarter
Graphite	Mt Messenger	EL5383	No work undertaken in the quarter
Graphite	Cleve West	EL4893	No work undertaken in the quarter
Graphite & Copper	North Cowell	EL4277	No work undertaken in the quarter
Magnesite	Witchelina	EL4729	See report
Magnesite	Termination Hill	EL4567	See report
Magnesite	Collaby Hill	ELA 2014/70	See report
Copper	Worlds End	EL4230	No work undertaken in the quarter
Copper	Wilmington/Spring Creek	EL4249	No work undertaken in the quarter
Copper	Australia Plains	EL4482	No work undertaken in the quarter
Gold	Napoleans Hat	EL4668	No work undertaken in the quarter
Manganese	North Burra	EL4266	No work undertaken in the quarter
Barite/REE	Eudunda	EL4840	No work undertaken in the quarter
Barite	Ediacara	EL4869	No work undertaken in the quarter
Coal / gas	Ediacara	PELA 567	No work undertaken in the quarter

For further information please contact:

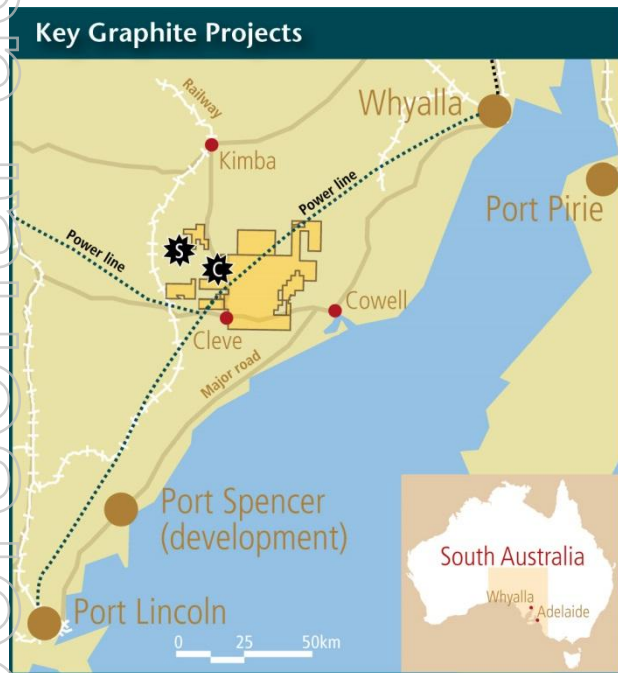
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Chairman  
Archer Exploration Limited  
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Mr Gerard Anderson  
Managing Director  
Archer Exploration Limited  
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# Archer June 2014 Quarterly Activities Report

Archer Exploration Limited is an Australian Stock Exchange listed company with 100% ownership of 13 tenements all in South Australia covering 4,954 km<sup>2</sup>. Archer also has the rights to all minerals other than uranium on EL4693 covering a further 816 km<sup>2</sup>. Archer's flagship project is the Campoona Graphite Project which is located within reach of established and major developing infrastructure. It has a JORC 2004\* Resource of 5.27 million tonnes @ 7.6 % TC (based on 2% TC cut-off). Archer plans to submit a Mining Lease Proposal to the South Australian Government for approval in the third quarter of calendar 2014.

\* This information was prepared and first disclosed under the JORC Code 2004 (Archer Exploration Limited, ASX Announcement 6th December 2012). It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.



### Advanced Graphite Projects

- Campoona
- Sugarloaf



### Priority 1 and 2 targets:

- Graphite
- Magnesite
- Manganese
- Copper
- Gold



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The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr. Wade Bollenhagen, Exploration Manager of Archer Exploration Limited. Mr. Bollenhagen is a Member of the Australasian Institute of Mining and Metallurgy who has more than eighteen years experience in the field of activity being reported. Mr Bollenhagen has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" relating to the reporting of Exploration Results. Mr. Bollenhagen consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

The information in this report that relates to the JORC 2004 Mineral Resource estimation has been prepared by Mr B Godsmark who is a Member of the AusIMM and peer reviewed by Mr G Reed who is also a Member of the AusIMM (CP). Mr Godsmark is a full time employee of Mining Plus Pty Ltd and Mr Reed is a sub-contractor to Mining Plus Pty Ltd., both have more than five years' experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Godsmark and Mr Reed have consented in writing to the inclusion in this announcement of the Mineral Resource estimation information in the form and context in which it appears. This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.