

## Significant copper from Spring Creek underground sampling



ASX Code: AXE

### Directors

Greg English  
*Chairman*

Gerard Anderson  
*Managing Director*

Tom Phillips AM  
*Director (Non-Executive)*

Alice McCleary  
*Director (Non-Executive)*

### Company Secretary

Damien Connor

### Shares on Issue

84.5 million

### Unlisted Options on Issue

23 million Performance Rights

### Key focus

Eyre Peninsula Graphite  
Project (includes Campoona,  
Sugarloaf and Waddikee)  
Additional portfolio  
opportunities: magnesite,  
manganese, copper and gold



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## Highlights

- **Underground face sampling on the uppermost level of the historic Spring Creek Copper Mine confirmed significant copper mineralisation peripheral to the former production stopes.**
- **Sampling identified a  $\approx 2\%$  Cu halo consisting of copper carbonate (malachite and azurite) outside of the main stopes including:**
  - **2m @ 1.8% Cu across drive 1**
  - **4m @ 3.0% Cu across drive 1a**
  - **10m @ 1.3% Cu along drive 2, and**
  - **12m @ 1.9% Cu along drive 3a**
- **Point sampling of pillars within one stope indicated grades over 8% Cu – mirroring the reported grades from the mine.**
- **Copper mining ceased in 1918 when the shallow underground mine flooded.**
- **Presence of copper outside of main stopes highlights potential for new copper lodes to be intersected below the sampled drives.**
- **Archer plans to drill test the copper mineralisation in FY 2016**

Archer Exploration Limited (Archer or the Company) is pleased to announce that its initial sampling of the old Spring Creek Copper Mine, located 30km of Wilmington, South Australia, has identified significant copper outside of the previously mined areas. The results of the sampling have confirmed:

- the style of mineralisation is not strictly limited to the stratigraphy; and
- the presence of copper outside of main stopes highlights potential for new copper lodes to be intersected below the sampled drives

Commenting on the results, Managing Director, Gerard Anderson said, *“Having recently lodged the Mining Lease Proposal for our Campoona Shaft graphite project we now have some time to devote to assessing our other portfolio opportunities.”*

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*“Our findings of copper peripheral to the old stopes at Spring Creek, together with the likelihood of being able to define extensions to the high grade historic stopes, is a very exciting prospect for Archer. This rediscovered project had historically been mined without the aid of modern mining methods or technology and was mined at an elevated cut-off grade to deliver ore grading 8-10% Cu. There is a lot of potential for us to find value in this asset” said Mr Anderson.*

The Company has started the process of gaining the consents required to commence an underground diamond drill program at Spring Creek.

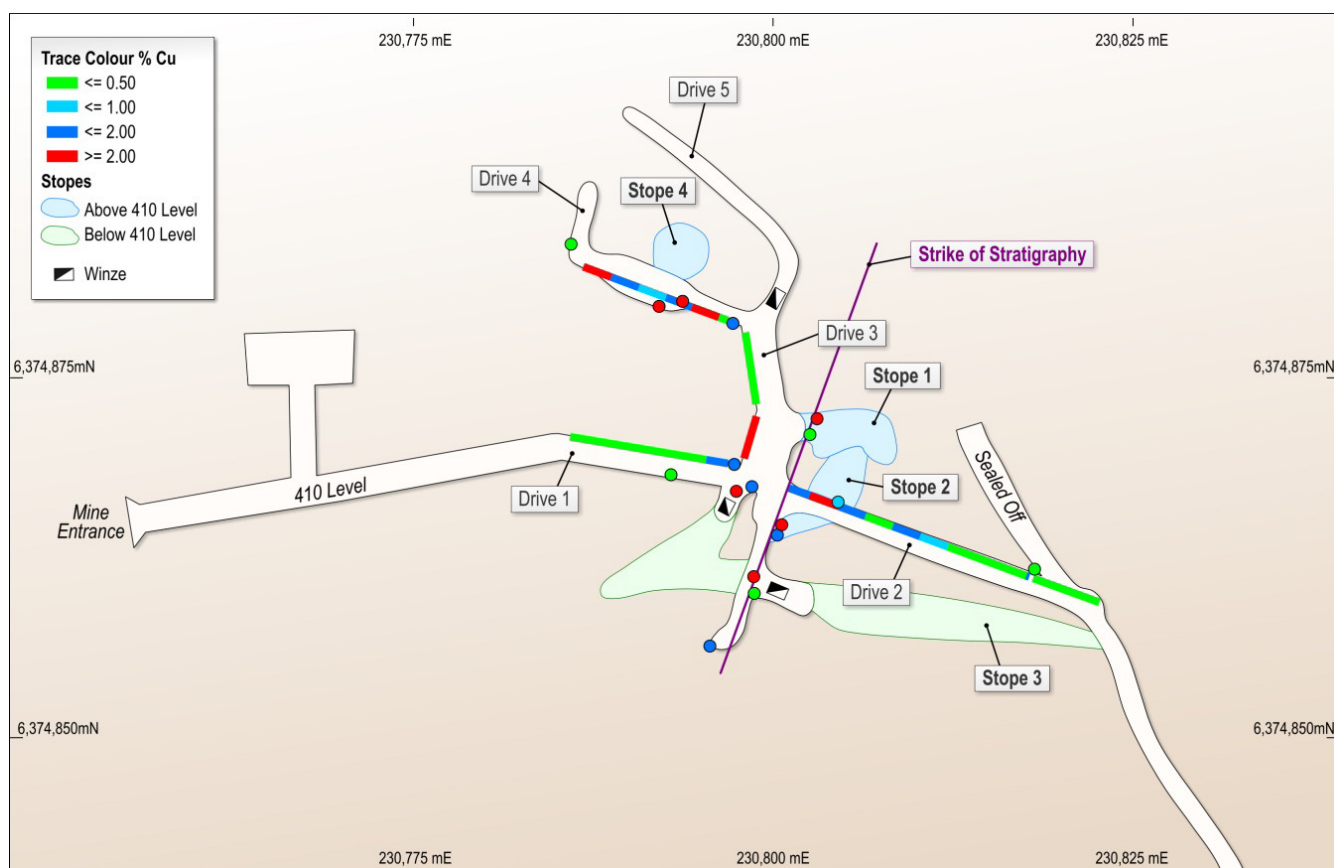


Figure 1. Plan view of underground workings, face and point sampling copper assays.

### **Spring Creek**

The historic Spring Creek copper mine is located 30km south of the township of Wilmington, South Australia.

Copper mining ceased in 1918 when the mine de-watering pump failed and the mine flooded. The government of the day determined that the operator had 12 months to reactivate the mine or face forfeiture. Pumps failed again and the mine was relinquished.

The historic mining records at Spring Creek document what can be described as a classic supergene copper profile with the uppermost portion comprised solely of copper carbonates malachite



( $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$ ) and azurite ( $2\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$ ) which pass vertically into copper oxides cuprite ( $\text{Cu}_2\text{O}$ ) and native copper ( $\text{Cu}$ ) before passing vertically into transition sulphide zone consisting of chalcocite ( $\text{Cu}_2\text{S}$ ), and covellite ( $\text{CuS}$ ).

Primary sulphides were never encountered meaning that the primary mineralisation which was the source of the copper that was mined is likely to occur at depth below the flooded workings. Archer expects that because of this that “unmined” intact and high grade copper mineralisation is likely to be found below the stopes.

The mine comprises a series of drives coming off an adit cut into a hill face, figure 1. Only the upper level was accessed. From these different drives a number of stopes are observed that were historically;

- accessed by winzes to lower levels
- mined down to the main drive from the surface



Plate 1. Looking from the end of Drive 1 into the main drive intersection

The main copper lodes at the historic Spring Creek Copper Mine are contained within an intense east-west striking quartz-rich hematite breccia within a ferruginous siltstone. Lower grade copper occurs as blebs and joint/fracture coatings within a “halo” around the mined stopes.



The style of mineralisation is NOT strictly limited to the stratigraphy as mineralised lenses are cross cutting and plunge within the breccia itself.

### ***Sampling***

The sampling program was undertaken to assess the presence and grade of copper mineralisation peripheral to the historic high grade (8-10% Cu) mining stopes within the Spring Creek mine. Samples were collected by face sampling access drives and by taking point sampling of remnant pillars.

Three separate drives were sampled (highlighted in figure 1) and assayed for copper. The results demonstrate that the multiple high grade copper bodies (8-10%Cu) have a halo of mineralisation averaging 1-3% Cu. Point sampling of remnant pillars within one stope accessible on the one level sampled indicate grades up to 8% Cu which mirrors historic mined grades.

All samples taken in the sampling programme were from the zones peripheral to the mined out stopes and all mineralisation consisted of the copper carbonates, malachite and azurite.

Sampling of Drive 1 (Face\_001) commenced in hard silica rich rock and ended (Face\_001a) in a pillar opposite Stope\_1 that was mined above the drive. Sampling of Drive 2 (Face \_002) commenced after passing Stope\_1 and continued back into the mine (Easterly) and ceased at the junction of an abandoned and sealed Drive. Sampling of Drive 3 (Face\_003) was completed in two parts (003 and 003a) and continued from Stope 1 (in a Northerly direction) then around to the NE towards Drive \_4.

Point samples were taken over 2 separate visits as a part of understanding the host rock and the mineralisation.

Drive 4 was not sampled as it strikes in a direction similar to that of the stratigraphy (020); Drive 5 was inaccessible at the time due to an open winze.

The lower stopes were not sampled in this round. However, Mining Reports from the SA Govt (1916), describe grades ranging from 2.2 to 8.9% Cu remain in faces in these lower stopes.



## Results

Table 1 below, presents the copper assays for the Face sample of the drives. All drives were sampled from East to West.

Hole ID	From	To	Cu%	Hole ID	From	To	Cu%
FACE_001	0	2	0.29	FACE_002	0	2	<b>1.17</b>
FACE_001	2	4	0.17	FACE_002	2	4	<b>2.04</b>
FACE_001	4	6	0.17	FACE_002	4	6	<b>1.54</b>
FACE_001	6	8	0.20	FACE_002	6	8	0.26
FACE_001	8	10	0.22	FACE_002	8	10	<b>1.46</b>
FACE_001	10	12	<b>1.78</b>	FACE_002	10	12	0.61
FACE_001a	0	1	<b>3.96</b>	FACE_002	12	14	0.27
FACE_001a	1	2	<b>2.16</b>	FACE_002	14	16	0.18
FACE_001a	2	3	<b>2.88</b>	FACE_002	16	18	0.27
FACE_001a	3	4	<b>3.17</b>	FACE_002	18	18.3	<b>1.36</b>
FACE_003	0	2	0.38	FACE_002	18.3	20.3	0.23
FACE_003	2	4	0.15	FACE_002	20.3	22.3	0.27
FACE_003	4	6	0.30	FACE_002	22.3	23.3	0.35
FACE_003a	0	2	0.35				
FACE_003a	2	4	<b>2.16</b>				
FACE_003a	4	6	<b>1.50</b>				
FACE_003a	6	8	<b>0.99</b>				
FACE_003a	8	10	<b>1.18</b>				
FACE_003a	10	12	<b>3.60</b>				

Table 1. Copper assays from Face Sampling in mine

Point samples taken from inside the mine are presented in Table 2 below.

Sample Id	From	To	Cu%	Sample Id	From	To	Cu%
WD03046	0	0.1	0.11	13809	0	0.1	2.84
WD03047	0	0.1	1.94	13810	0	0.1	0.37
WD03048	0	0.1	3.24	13811	0	0.1	1.62
WD03049	0	0.1	1.22	13812	0	0.1	8.62
WD03050	0	0.1	0.65	13813	0	0.1	3.38
WD03051	0	0.1	0.37	13814	0	0.1	0.37
WD03086	0	0.1	3.02	WD03089	0	0.1	0.49
WD03087	0	0.1	2.98	WD03090	0	0.1	1.47
WD03088	0	0.1	1.87				

Table 2. Copper assays from point samples taken in mine.



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### Future Exploration

Archer will source a small underground diamond drill rig and drill a series of fan holes designed to intersect extensions to all of the mined out the stopes below the mined out areas. Drilling from underground will determine the width and grade of the en echelon mineralisation within the cross cutting breccia.

Future drill holes will be orientated in directions to test for unmined pods primarily below the drive out to the North and South breccia contacts. The area of the breccia is some 100m by 70m (strike). A number of deeper drill holes will also seek to identify primary copper sulphides below the supergene envelope.

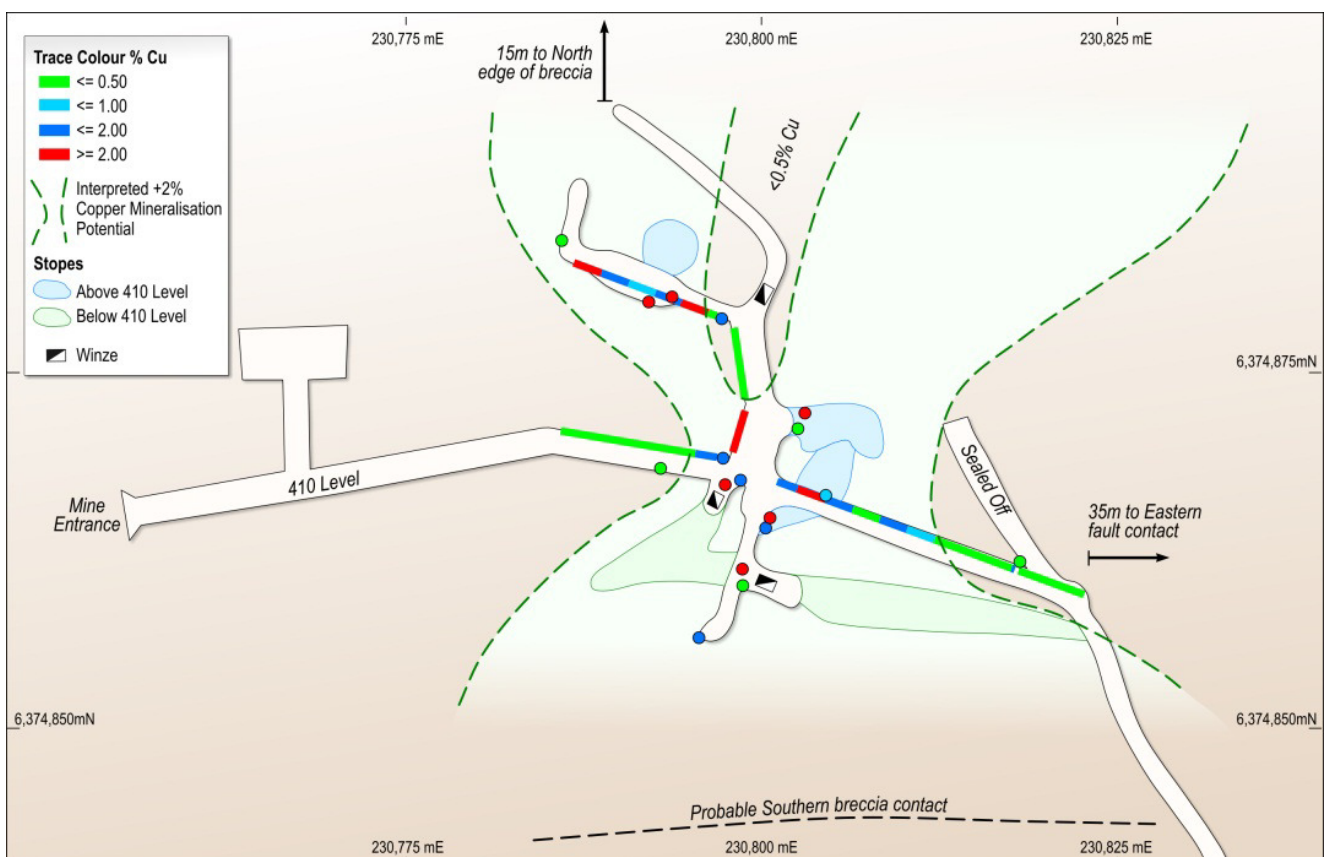


Figure 2. Mineralisation extent of underground workings

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A series of plates are presented below to show examples of the material sampled and reported.



Plate 2. End of Drive 1, Face\_001a sample intervals



Plate 3. Example of material reporting 2.16%Cu



Plate 4. Example of material reporting 2.88% Cu



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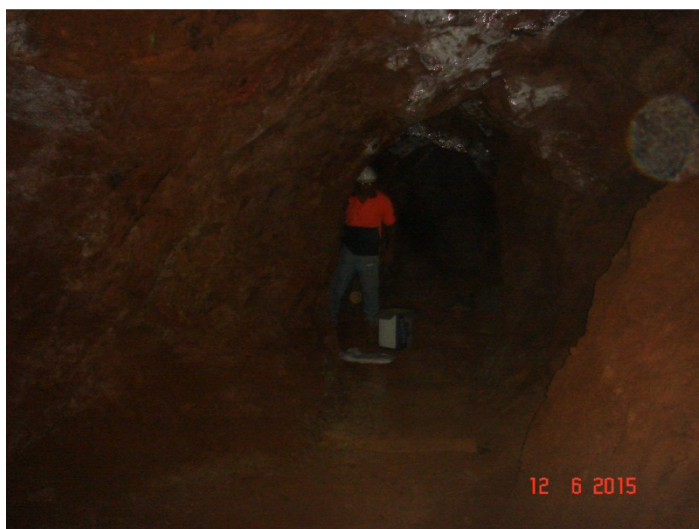


Plate 5. Drive 3 Sampling, looking East



Plate 6. Western sample from Drive 3 with 3.6% Cu



Plate 7. Spot sample taken from backs in drive 3, 8.62% Cu

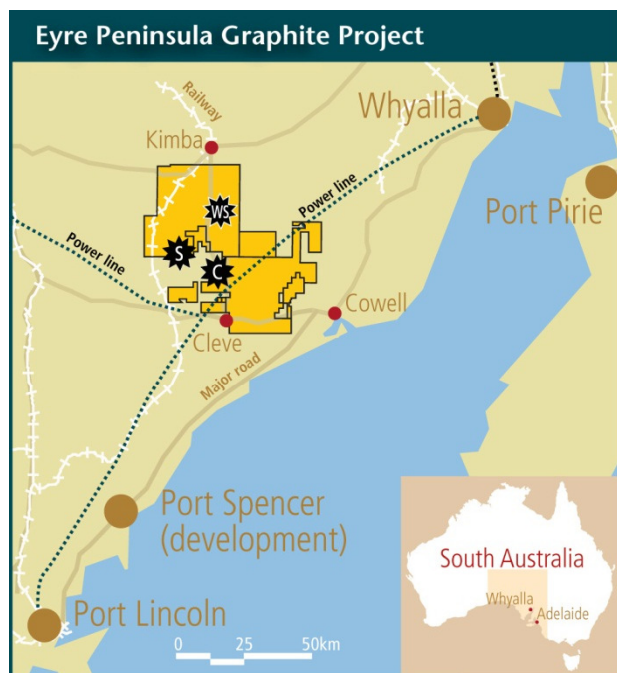




Plate 8. Example of Copper carbonate mineralisation (malachite) above portal entrance.

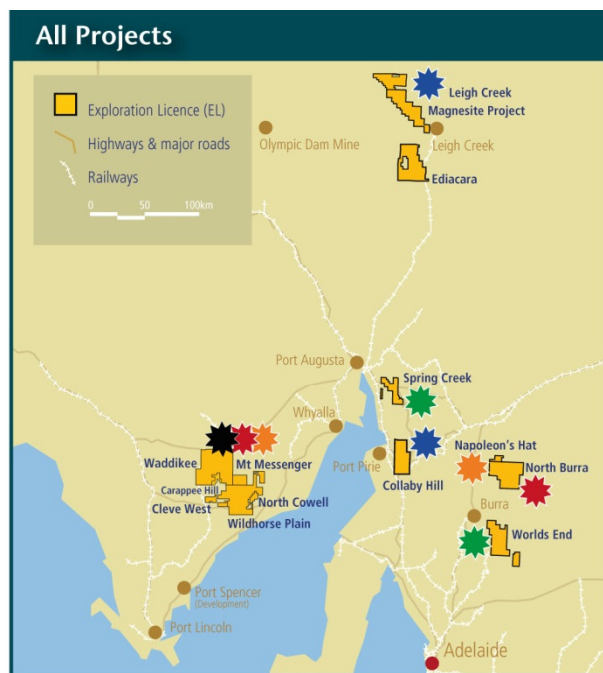
## About Archer

Archer Exploration Limited is an Australian Stock Exchange listed company with 100% ownership of 15 tenements all in South Australia covering 5,165 km<sup>2</sup>.



### Advanced Graphite Projects

★ Campoona ★ Sugarloaf ★ Wilclo South



### Priority 1 and 2 targets:

★ Graphite ★ Magnesite ★ Manganese ★ Copper ★ Gold



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*The exploration results and exploration targets 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 twenty 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.*