



# Q3 2018 EXPLORATION UPDATE

## GREENFIELDS

During the third quarter of 2018, Greenfields exploration activities were undertaken in Australia, Colombia, Brazil and the USA. Greenfields exploration completed 11,851m of drilling globally. Total expenditure for the quarter was \$5.8m.

In **Australia**, exploration continued at Butcher Well and Mt Minnie – Butcher Well and Lake Carey JV. The first stage of the Butcher Well and Lake Carey Earn-in was completed in late August, AngloGold Ashanti (AGA) now owns 51% of the Butcher Well and Lake Carey tenements.

A programme of 20 diamond drill holes for 9,600m was initiated at the end of the quarter to infill the Old Camp Zone to enhance the confidence of the underground Mineral Resource. A programme of 80 RC holes for 6,400m was started at the end of the third quarter in order to better define open-pit Mineral Resource south of the Camp Zone pit and north of the Enigmatic pit.

In the Laverton District – AGA (100%) and Butcher Well and Lake Carey JV, lake AirCore (AC) drilling was completed on the Ahab prospect in the northern part of the Laverton tenement package. A total of 109 holes for 5,657m were completed at the prospect during the second quarter. A number of holes intersected intervals silica-sericite alteration and quartz-carbonate veins with ferruginous pits and veinlets after sulphides. Results received in July confirm a significant zone of anomalous gold, extending along strike for about 2km. A programme of follow up diamond drilling is being planned for 2019.

A land AC drilling programme was completed on the Otway prospect in the second quarter. Encouraging alteration and pyrite-rich intervals were intersected. Several anomalous gold intersections were returned and will require follow-up AC drilling. In addition, a small Reverse Circulation (RC) programme has been planned for the fourth quarter to test the main anomalous gold zone in the centre of the prospect.

The Leone AC drilling defined potential for additional open pit gold mineralisation located close to Butcher Well. Significant gold anomalies, with good continuity were defined along 2.5km strike, within an extensive north-south trending mineralised corridor, located 2km west of Butcher Well.

A small lake AC programme was completed on the Bismark target, located between Red October and Sunrise Dam Gold Mine. This programme was mainly for the purpose of maintaining tenement E39/1279 in good standing, as per our farm-in agreement with Saracen. The lake cover of 40-60m on that tenement makes the economic viability of a discovery much more difficult. Nonetheless, being adjacent to the Sunrise Dam mining lease, there is strategic benefit in maintaining this tenement.

In North Queensland (100% AGA), a large soil sampling programme at Bullseye Creek defined a 7km x 1.5km gold anomaly, which includes the Langlo prospect. Gold anomalism is associated with Cu, Bi and Mo, which is typical of an Intrusion related gold geochemical signature. The southern part of this anomaly is still open and a small additional soil programme is designed to improve the soil coverage around this large anomaly, defining the southern margin and infilling some of the better gold anomalies.

An IP survey has been planned for the fourth quarter to cover the Mt Clarke breccia complex. The programme will cover a 4km<sup>2</sup> area centred on the breccia complex.

The Turtle Creek and Kangaroo Creek opportunities were reviewed during this third quarter and a large area of sheeted quartz veins (1km<sup>2</sup>), hosted in Permian rhyolite was defined in the northwest part of

Turtle Creek, close to the Camp Oven prospect. This newly defined quartz vein system has not been sampled before and will require a follow up assessment and sampling program. This new target is named Ironwood.

In the **USA**, at the Silicon Project (100% Earn-In Option Agreement with Renaissance Gold) a 17,000m follow-up programme of RC and diamond drilling will commence early in the fourth quarter of this year at the Silicon Project in Nevada.

In Minnesota (100% AGA) all results were received for roto-sonic drilling completed at the Aegir, Ran and Freyja projects. Low-level anomalous Au was returned from the Aegir project, while a significant gold grain anomaly was returned from the Ran project. A follow-up roto-sonic drill programme in the fourth quarter will aim to delineate these anomalies further. Geologic mapping was also completed at the Ran and Magni projects, to assist in delineating drill targets for the upcoming winter roto-sonic drill programme.

In Colombia, the divestment of AGA's Generative Exploration assets is ongoing.

In Brazil, since AGA's withdrawal from the Tromai Project farm-in with Equinox Gold, exploration has focussed on target generation activities.

## **BROWNFIELDS**

During the third quarter of 2018, Brownfields exploration activities were undertaken across the globe. Brownfields exploration completed 170,774m of drilling for a total expenditure for the quarter of \$13.4m (capital) and \$13.8m (expensed).

**South Africa:** Surface drilling at Mponeng achieved 207m against a budget of 455m for the quarter. UD63A was previously stopped to save capital in 2018. UD61A advanced from 976m to 1150 m. There have been slow advances in the Eccles Formation where continued water loss has required multiple grouting operations. Four directional wedges have been installed, to forcibly rotate the hole toward the desired target area.

**Tanzania:** Nyankanga underground projects continued to provide positive drilling results and confirmed presence of high grade ore zone envelopes with potential continuities between project stopes.

Nyankanga Block3 drilling has confirmed the potential down-dip extension of the designed mining stope to the northeast and remains open-ended towards Block2. The drilling results also confirmed the mineralisation within the defined Block 3 Lower mining stope and beyond it, suggesting that the Block 3 Lower is connected to Block 3 Upper. Further drilling is required to test.

Nyankanga Block4 drilling results have confirmed the Mineral Resource model and intersected mineralisation beyond the expected area/mining stope. In the north most section, the results indicate a potential, open-ended, down-dip continuity towards Block3, suggesting that the two Blocks are connected.

At Nyankanga Block 5, drilling didn't intersect the target suggesting the presence of a fault around this area which displaces the mineralisation.

Star & Comet Cut2 drilling on levels 1,065 and 1,040mRL suggests that the host structure and mineralisation of S&C Cut2 continues down-plunge. Assays are awaited. At Star & Comet Cut3 drillholes confirmed the down-plunge continuity of gold mineralisation which remains open down-plunge, requiring further exploratory drilling.

Some of the drillholes from Selous continued to report encouraging intersections. An upside model was completed and an application was made for additional funding in 2018 to continue drilling at Selous. Reconnaissance drilling at Mabe is ongoing with a few drillholes reported significant and economic intersections.

**Guinea:** Bidini West infill drilling has been completed and is 100% assayed, however the Mineral Resource model update has not yet been finalised. Initial results indicate that the Bidini West drilling appears to be sufficient to increase the level of Mineral Resource confidence to Inferred.

The Foulata fresh-rock drilling programme (6 DD holes) was completed during this quarter and the assays results show thinner mineralisation than expected in the fresh rock in Foulata central. Meanwhile, the Saraya infill drilling programme was completed. The information was used to update the geological model, which was handed over to the Mineral Resource evaluation department.

The Tubani infill drill plan is 100% completed and assayed with multiple significant intercepts reported. The geological model was handed over to the evaluation team. Sintroko drilling has been completed and 64% assayed and the model will be handed over in the last quarter of the year.

The Seguelen sterilisation and test drilling assay results were returned over this quarter, and multiple significant intercepts were reported showing extension of the mineralisation in oxide material to the East and in fresh material to the West below the pit. Backfilling of the pit was not recommended.

The Silakoro sterilisation drill programme was drilled after it became apparent that a change in design of the Silakoro waste dump could cover a known mineralisation trend. Drilling is not yet completed but assay results returned indicate the existence of mineralisation along a NNW-SSE trending, steeply dipping fault. The Kossise fresh rock drill plan is 35% completed and 10% of samples have been assayed to date.

Geomet data collection during the quarter focused on measuring the Block 2 and Silakoro drill samples. pXRF, Terraspec and Equotip data was collected and interpreted. Probable correlations were established between Equotip hardness measurements and element concentration levels determined by pXRF.

**Ghana:** In Block 7&8 remaining samples drilled in the second quarter were processed and submitted for Au analysis. One borehole remains to be drilled. The Ajopa conversion drilling completed 3,028m. Sedimentological logs reveal well-packed and well-sorted C & B conglomerate reefs. Four of the holes were the planned to cover the proposed Cut 1 backfill area. Meanwhile, the Block 5 Extension drilling campaign completed 946m and 31 samples were submitted for Au analysis.

Mile 5W reconnaissance drilling produced 1,557m. Core processing is in progress. Interesting veining, pyrite and silicification was observed in the core. At the TSF Target, the spare capacity on the GC rig was utilised to drill ten 48m deep holes. Significant intersections were returned.

Soil Geochemistry results received shows a strong anomalous trend from the southern portion of Mile 5W. There are also correlations between mag units and Au with some WE cross-cutting structures.

**Democratic Republic of the Congo:** None of the current KCD drill holes intersected the KCD 12000 lode up plunge. The information suggests only deep potential, and this will be tested with further drilling. Drilling has confirmed the 5,101 and 9,101 high grade mineralisation corresponding to the upper and lower limbs respectively of the fold.

At Ngyoba (Sessenge – Kibali river gap), drilling was completed and assay results returned. The model was confirmed and the mineralisation down dip and down plunge is still open and thinning towards the southeast with lower grade. Bottle roll test across the main orebody was done because of a gold-arsenic association. The results indicated poor recoveries on leaching (41%) due to the arsenic. A gold deportment study is currently underway to obtain a better understanding of the orebody and how it will impact the plant recoveries. The southwest projection of the Sessenge-KCD complex folding corridor supports a structurally complex model for this area. No significant intercepts reported. Further mapping is ongoing in the Ngyoba area.

For the Kalimva-Ikamva project, results were returned for the northern, central and southern domains. For the northern domain, the block model reveals 32% gain in metal content due to grade improvements. At Ikamva, results received support the consistency of the mineralisation envelope and the down plunge continuity of the high grade. At Ikamva Northwest, reviewed data is suggesting continuation of mineralisation lenses with high grade shoots in the hinges of “Z” folds.

At Birindi, results were received for 11 litho-samples collected in the target area and returned encouraging results supporting the 200m strike length target. Three trenches were excavated and the

results showed weakly mineralised and thinner ore than Zakitoko. Results confirmed the boudinage system. At Zakitoko, two of the three trenches returned results, one with no significant intercepts and the other an anomalous 10m intercept. This supports the pinching and swelling of the mineralisation and variability along trend

The preliminary interpretation of the Kibali BLEG sampling results highlighted 4 higher-order and 2 lower-order gold anomalies which show excellent correlation with the arsenic. A follow up programme (soil sampling) will be designed to test and circumscribe the areas of interest from the BLEG.

**Republic of Mali:** No exploration took place this quarter.

**Argentina:** The 2018 drilling programme was completed during this quarter, with a total of 8,617m drilled in the year.

Drilling tested the lateral and down-dip extensions at Atila, Concepción (for the future COCB1 pit), Joana, Osvaldo Diez, Sandra, Melisa, Norma, Oveja, Potrero, Teresa and Vanguardia targets.

At Atila, the two northern holes intersected economic mineralisation, but only one of the three holes in the south returned economic intersections of both Ag and Au.

104 channels were cut during this quarter for a total of 3,459m.

An HLEM survey on the recently received Condor mining lease was undertaken in August and September. The aim is to test the geophysical response of the geological units outcropping in the area and crosscutting the main regional structures. A total of 74 line-kilometres were flown during this quarter while a new ground-magnetics survey was initiated, with a total of 240 line-kilometres completed.

**Brazil:** At Cuiabá, drilling of the underground infill targets continued at Serrotinho Level 9, Dom Domingos Level 16, Fonte Grande Level 18, Galinheiro Level 15 & 16, as well as Galinheiro extension Level 19. A drill pad in Balancao target was used to drill the target as well as aim for the Canta Galo target, which is also being targeted from VQZ drill pad on Level 17.

Drilling at Fonte Grande Sul (FGS) showed continuity of high grades down plunge. Positive results were returned from Surucucu (SUR) between Levels 08 and 11 which has prompted an economic study into mining this orebody.

The LIB drilling platform is ready and contractor workers are being trained. Drilling is programmed to start during the fourth quarter. The remnant ounces project identified 140koz of "mineable areas" which converted to 23koz of Ore Reserve through mine planning. The work will continue.

On the regional targets, Descoberto underground drill planning was completed in July with the environmental permission received in August. Drilling contractors are attending training and drilling will commence in the fourth quarter. At Olhos D'agua an IP survey, surface sampling and drill planning was completed.

At the Biquinha project, data integration and analysis was completed and a geological model generated. The soil sample interpretation was also completed.

For IQ-104 Penha, data compilation and final exploration report writing was completed. While for IQ-55 Matarelli, data compilation was also completed and 14 channel samples were collected. The DNPM renewal report was completed.

At Lamego, due to the delay with the Cabeça de Pedra drill pad it was decided to commence with the drilling at the Carruagem SW target first. The drilling for the Carruagem target is being done from two drill pads (level 4 and 5 respectively). The exploration is building a more aggressive exploration programme for Lamego and will focus on kicking off drill pad access development in the zones with the highest potential to deliver ounces to support the production plan.

At Córrego Do Sítio, underground conversion drilling took place at CDS I in the Cachorro Bravo, Laranjeiras and Carvoaria ore bodies. The drilling was completed by two AGA rigs (7,440m). Borehole

LARBUD0158 confirmed the deep projections of Laranjeiras, while borehole CRVBUD0196 at Carvoaria shows that the northern-most lens has the potential for ore shoots with high grades. The development of exploration galleries is ongoing.

1,568m of Diamond Drilling (DD) was completed to convert Inferred Mineral Resource to Indicated in the sulphide material at Rosalino. The first assay results are expected in October and the drilling will continue until December. The drilling campaign in CDSIII was concluded, with 1,978m completed. The drillholes in Anomalia I and Anomalia II continue to confirm the grades and thickness of the main lens. A drillhole in the Jambeiro Target showed excellent prospects of continuity of the ore to the south and the target will be tested in future campaigns.

At Serra Grande, conversion drilling was undertaken at Inga (Orebody I1 and I4), Pequizão (Orebody G and G12) and VQZ North Down Plunge

A LIB drilling test was successfully executed, the final depth was 560m and the dip was changed from -19° at the beginning to -56° at the end.

The DNPM confirmed the granting of the exploration lease for Palmeiras South. Work was initiated where MSG have ground access agreements with farmers. The geological and structural mapping (1:25000) were done on 21% of total ground (252 ha). Chip samples (51 samples) and channel samples (44 samples) were collected. 88 soil samples of a 1034 sample programme were collected with results awaited. 3 of 33 ground mag lines were completed. The first exploratory drill holes were executed down plunge of the principal excavation (identification of Palmeiras and IV structures) with poor results.

In **Colombia**, at Gramalote grade control spaced drilling continued on a Northern and Southern platform. The La Palma drilling programme was delayed due to delays in the completion of the geophysics IP survey. While rock sampling was carried out underground in 4 areas along the main structure.

Care and maintenance continued at La Colosa while at Quebradona the valley infrastructure drilling was completed a month ahead of schedule. The on-mountain drilling campaign is ongoing and expected to finish in November. Two metallurgy and geotechnical drill holes were added to the schedule. A geophysical seismic survey was also completed.

In **Australia**, at Sunrise Dam a 7th rig commenced drilling in June to help make up the drilling deficit.

A total of 69 significant intercepts were reported in this third quarter and results highlight the following:

- Continuation of wide, high grade zones that infill the Vogue ore domains over 500m strike length, 500m width and 400m vertical
- Up dip extensions to Midway Shear Steep ore domains
- Increase in confidence in the Elle steep ore zone immediately above MWS Steep, as wide and high-grade infill results have been returned
- Mineralisation in MLE4 to the east of the VOG1792 FWS is sparse to date, however the most significant grades are between Carey Main and Carey 2 shear zone with small amounts of visible gold logged
- High grade and relatively wide intercepts from the northern Astro area, which needs to be geologically assessed and ore domained to look for continuity.

At Tropicana, drilling operations were conducted at New Zebra (RC/DD), Madras (RC/DD), Seahorse (RC/DD), Stratigraphic fences (RC), Angel Eyes West (AC), Iceberg North (AC), Charmander (AC), Watchtower (RC), Voodoo Child (RC/DD) and Wild Thing (RC/DD) for a total of 14,184m.

Highly anomalous and significant aircore intercepts were returned from Angel Eyes West on the edge of the lake system. Together with 2017 AC results around the same area a NNW trending zone of anomalism is present over 1km strike and is open. These intercepts are to be followed up with lake based AC and DD in 2019.