

# Exploration Update

for the quarter ended 30 September 2016

## GREENFIELDS

During the third quarter of 2016, Greenfields exploration activities were undertaken in Australia, Colombia, Brazil, Argentina, USA, Guinea, and Tanzania. Greenfields Exploration completed 23,499m of aircore drilling in Australia.

In **Australia**, within the Laverton District, lake- and land-based aircore drilling was completed over priority and follow-up targets with 296 holes drilled for a total of 18,930m. Drilling encountered strong alteration assemblages which are characteristic of the mineralised trends within the project area. On the Pioneer prospect aircore drilling continues to be promising as it has extended the length of the mineralised zone to 4kms and infill aircore drilling has defined a higher grade zone. Further regional targets are to be tested with lake aircore drilling in the last quarter of the year, while follow-up drilling anomalous results with RC/DDH is anticipated. At the Strawbridge Project (AGA 100%), the planned aircore drilling programme was completed with 61 aircore holes drilled for a total of 4,738m in the third quarter. Results from the aircore drilling and geochemical sampling completed in 2016 were disappointing, with no significant results returned. The Strawbridge project is currently under review.

In **Brazil**, on the Tromai Project (Luna Gold JV) the Condition Precedent was met on 1 August. Focus was in putting together strategies to manage communications, obtain environmental licensing for the proposed drilling programs and obtain social license and authorizations to initiate field activities. Field activities focused on in-fill soil sampling on the Delta Grid and orientation spectral measurements on key drill holes and soil samples. Contracts for the regional aeromagnetic and diamond and reverse circulation drilling programs are being finalised.

In **Colombia**, focus continued on the Anza district south of Buritica. Focus moved away from the Guintar target to the E-W trending high grade epithermal veins in the Chuscalita trend which are truncated to the east by an N-S graben with extensive colluvial cover (Niverengo target). Within the cover a number of windows with veined andesite subcrop and float blocks of vein material have been found. One of the quartz vein outcrops on the rift margin to the north gave a bonanza result with elevated Hg & Mo. Thirty percent (9) of the rock samples collected in initial reconnaissance in the Niverengo zone were anomalous in Au (+0.5g/t). This target is currently being followed up.

Generative exploration occurred in Brazil, Argentina, USA, Guinea and Tanzania. The Meia Meia licence applications (850 km<sup>2</sup>) in the Lake Victoria Greenstone Belt of Tanzania was granted in third quarter of 2016. Results were received from the orientation geochemical sampling at the Niandan licence in Guinea (100km<sup>2</sup>, 90km from Sigui) and lease-wide geochemical sampling will be completed in the last quarter. The evaluation of NW Argentina for high-sulphidation epithermal deposits continued. In Minnesota, the first phase of field exploration continued and a 50,000 line km airborne geophysical survey commenced.

## BROWNFIELDS

**South Africa:** Surface borehole UD59 has been successfully completed and delivered four Ventersdorp Contact Reef intersections. Site disestablishment has been completed and the rig has been demobilised. Site rehabilitation is underway and is presently ~70% complete. Final site sign-off is scheduled to take place before end of the year.

Borehole UD60 intersected the Ventersdorp Contact reef at depth 3,650m. The drill hole continued drilling into the footwall below the reef and was stopped at a depth 3,756m. Deflection drilling of minimum three short deflections is currently underway.

Borehole 58A reached a depth of 3,717m. The hole is currently drilling in the Alberton 2 lava's, which implies the hole is less than 1,00m away from intersecting the VCR which would be four months ahead of schedule

**Tanzania:** Drilling activities included Mineral Resource delineation at Star & Comet Cut 2 NW and Cut 3, Star & Comet Underground drilling, reconnaissance drilling at Prospect 30 and completion of a drillhole at Geita Hill East as part of the 3D seismic survey program. 35 holes (6,036m) were completed for both surface and underground exploration drilling programmes.

Underground Development exploration activities at Star & Comet were focused on Ore drives on levels 1375, 1350, 1275, 1250 and 1225mRL. All drives were systematically mapped, sampled and geology maps compiled for each level. At Star & Comet Underground, 23 DD holes (3,164m) were completed. Mapping and underground drilling results indicate a flattening of the mineralisation and a plunge towards the NNW. Two surface holes at S&C NW were planned to test this potential down-plunge extension; drilling is in progress and assays are pending.

Mineral Resource delineation drilling at Star & Comet Cut 3 was completed. The drilling aimed to confirm the down dip continuity of the projected S&C Cut 3 ore zones below the Mineral Resource pit shell. 4 RCDD holes (150m RC and 729m DD) were completed. Assays have been received for the first 3 holes, with logging ongoing. The best intersection from SCRD0057 confirms down-plunge continuity of the ore zone, which is open at depth.

Assay results received during the quarter from Geita Hill East drilling confirmed down dip continuity of the targeted underground ore zone with a significant intercept reported from approximately 120m below the deepest previous intersection. The mineralisation is controlled by a narrow, deposit-scale brittle to ductile shear zone.

Two RCDD holes (827m) were completed at Prospect 30. Logging has been completed for the first hole and confirms the geological model. The anomalous gold intersections are along the tuff-BIF contact, and fit well with the potential dip extension of the interpreted mineralised envelope.

The 3D seismic survey data acquisition within the central Geita area was completed over an area of approximately 20km<sup>2</sup>, utilising 6,000 wireless receivers and UNIVIB vehicles as the seismic source. The acquisition phase of this project was completed without significant incident and within budget. Borehole GHRD0065 at Geita Hill East was re-opened and extended to 1,322m to allow for Vertical Seismic Profiling (VSP) and Full Waveform Sonic (FWS) data collection. VSP and FWS was also collected from an historic hole at Nyankanga. The 3D Seismic processing and initial interpretation phase is scheduled to be completed by December.

**Guinea:** At Siguri Gold Mine a total of 13,253m were drilled. Exploration drilling included infill drilling at Seguelen PB2, Seguelen PB2 East and Silakoro.

Drilling at Seguelen PB2A consisted of 2 drill programmes, one infill to a 25m x 25m grid spacing at depth within the planned pit shell (56 RC holes and 2 RC pre-collar holes (10,643m) and 12 RCDD tail drill holes (1,066m)), and the other aimed to test the potential extension of the shallow mineralisation along the bedding direction to the east of PB2 (12 RC holes (1,333m)). Overall, both programmes returned very positive results and show mineralisation to be open at depth and at shallow levels to the east.

Infill drilling to increase confidence in the Silakoro geological and Mineral Resource model continued. In total 2 DD holes (190m) and 4 RC holes (404m) were drilled, with further drilling postponed due to the area being waterlogged. The area is underlain by conglomerate, greywacke and siltstone lithologies, dipping towards the SE. Gold mineralisation occurs in the central and eastern side of the drill target, trending approximately SW-NE.

The geochemical soil sampling program on the Saraya West EPL continued. However, the programme was put on hold due to the rains and is set to recommence next quarter. Field mapping work was completed to generate regolith maps for the Saraya, Corridor and TSF blocks.

A grade engineering project report was completed to summarise the results from three recent studies that suggest the oxide material is amenable to this form of upgrading. Follow-up work to investigate these results is under consideration. Geometallurgical data is being collected from RC and DD drilling products by means of XRF, Equotip and Terraspec instruments. Current focus areas include Seguelen PB2a, Bidini and Kami. Data collection is scheduled to conclude in the last quarter of the year.

Statistical analysis and modelling will then be applied to interpret the data and to aid the development or enhancement of geometallurgical models.

**Ghana:** At Iduapriem Gold Mine, a total of 1,457m drilling (340m RC and 1,117m DD) was completed to the west of the historic Block 1 pit. The programme aimed to verify historic drillhole results and establish the extension of conglomerate reefs west towards the Nueng target area. Significant intersections were reported showing conglomerate reef packages extending from the main Block 1 pit to Nueng for about 300m along strike.

Mineral Resource conversion drilling at Blocks 7&8 totaled 1,490m (329m RC and 1,161m DD). The drilling was focused in the Block 7 area to upgrade Inferred Mineral Resource to Indicated within the current pit design and improve confidence in the modelled structural interpretation. Reef duplications in the area have been confirmed, especially associated with the main thrust fault, and the Mineral Resource model is being updated accordingly.

Two additional holes were drilled to investigate spatial deviations between grade control and Mineral Resource models for the Ajopa pit. 357m drilling was completed (75m RC and 282m DD) and three main reefs were encountered (A, B and C), the B reef being the main economic reef. Evaluation of the results is ongoing.

At the Nueng target, between Block 1 and Block 2, a geochemical soil survey was completed. Analytical results are pending and the sampling & line cutting teams have moved to the Mile 5W/Badukrom area. The results will be used to inform the planned drill programme over the target area.

**Democratic Republic of Congo:** At Kibali, exploration focused on the Rhino-Agabarabo, Rhino-Kombokolo gap, and Sessenge southwest areas, and the regional Aindi Watsa- Dilolo-Zambula and Kalimva Ikamva areas.

Work at the Rhino-Agabarabo area focused on trenching for oxide potential, a close spaced RC optimisation drilling programme, and a down plunge continuity drill test. Augering over the area is also ongoing as a sterilisation exercise. At Rhino, eight trenches were completed with seven returning encouraging intersections. Based on the trenching results, a close spaced RC programme targeted the down plunge continuation of the high grade shoots with only partial results returned to date. The consistency and down plunge continuity for underground potential of the known Rhino high grade shoot was confirmed by a diamond hole, drilled 130m down plunge from surface.

At Agabarabo East, 1 of the 3 trenches completed to test the interpreted mineralisation model highlighted potential for a high grade shoot in oxide. This will be tested down plunge by drilling.

Four trenches were completed in the Rhino – Kombokolo gap area. One of the trenches returned encouraging results and suggests potential mineralisation underneath Kombokolo hill.

Activities at Sessenge Southwest included trenching and drilling of six RC holes to better understand and test the model. The RC holes were targeting the potential mineralisation around a previous trench. Assays results from the RC drilling support the model. The trenching supports the mineralisation models and support drill testing for potential down plunge continuation.

Seventeen bottle roll tests were completed at Sessenge southwest for material collected from within zones of low, medium and high grade mineralisation. Analysis of results indicates an average recovery of 83% for oxide composites from BIF and meta-conglomerate. In fresh material, results show low recovery.

Work in Aindi Watsa area was carried out to follow up high grade mineralisation recorded in two diamond holes drilled early this year. Five trenches tested the surface projection of these mineralised zones and the results support the continuity of the mineralisation towards the west. Investigation of the Aindi Watsa area will continue next quarter with mapping also being completed towards the west of the Aindi Watsa main zone, including Dilolo up to Zambula.

**Republic of Mali** – At Sadiola and Yatela, RC drilling (5,275m) was completed and focused on SSP North (1,308m), FN (2,397m) and Tambali (1,746m).

At SSP North eleven holes were drilled. Results confirmed the continuity of the NNE trending oxide and sulphide mineralisation below the current pit. Significant oxide intersections were recorded on the west of the Sadiola pit, but returned poor to mixed results below the pit. The continuity of the NNE-trending, SE dipping mineralisation at depth was confirmed, despite variable grades. Samples for metallurgical test work were collected from the RC holes and as grab samples within the pit.

Twenty holes were drilled in the FN area to test for NNE trending mineralisation in the area around the FNa-FN3-FNbc pits. Significant shallow sulphide mineralisation was intersected below the FNa Pit, while the area around the FN3 pit returned disappointing results.

At Tambali, 10 holes were drilled to the northeast of the existing (and SSP satellite) pit. Most holes confirmed the dispersed low grade mineralisation with two holes intersecting significant shallow transition/sulphide and deep sulphide mineralisation. The mineralisation appears to be located close to the metagreywacke-quartz feldspar porphyry contacts and trending towards the Sadiola pit.

A total of 2,159 samples were analysed by XRF during the quarter, including drilling samples from FE2S, termite samples from Voyager East and rock samples from field mapping. Results for the FE2S RC samples demonstrates that the arsenic anomaly has a broad dispersion zone in the weathered horizon and tapers towards the mineralised zone at depth.

In **Argentina**, drilling continued at Cerro Vanguardia during the quarter with most of the drilling meters continuing to be completed at the nearby Claudia JV. During the quarter 9,625m were drilled in total, including 3,889m at the Claudia JV.

In **Brazil**, exploration continued at the Cuiaba, Lamego and CdS production centers for AGABM with 42,457m drilled during the quarter from the combined surface and underground drilling programmes.

At Serra Grande, 17,678m were drilled as part of the exploration and Mineral Resource conversion programs. Surface exploration continued to prepare additional drilling targets.

In **Colombia**, the Gramalote JV completed 2,721m of drilling to support site and infrastructure investigations as well as infill drilling to better define mineralisation in the weathered horizon.

At La Colosa, 933m were drilled during the quarter as the site investigation geotechnical and hydrology drilling continued.

The Quebradona JV program did not complete any drilling during the quarter and was focused on study work.

In **Australia**, at Sunrise Dam drilling of Vogue South continues to infill the panel south of 99,200mN and above the 1600mRL, with the aim of providing an Indicated Mineral Resource. Assay results continue to be encouraging.

Drilling of Vogue Deeps continues on an 80m x 80m spaced drill pattern. The aim of the drilling is to extend the Vogue ore body below the 1600m RL. Significant intercepts have been reported from multiple drill fans with intercepts extending further to the south.

Infill drilling of northern extensions to Cosmo and Cosmo East has been completed with the final intercepts reported. Modelling is now complete as part of the global Mineral Resource model update.

Cosmo East up-dip drilling was completed with some assays still outstanding. The results showed some mineralised intercepts, however none of them were greater than 20g.m.

Drilling of Elle, Sunrise Shear Zone and Midway Shear began towards the end of the quarter. All assay results are awaited.

Thirty one significant intercepts were returned during the quarter; 16 from Vogue South and Midway

Shear, 10 from Vogue Deeps, one from Cosmo East North, two from Cosmo North, one from Carey Shear and one from mineralisation in the northern Dolly hangingwall.

At Tropicana, the Long Island 100m x 100m drilling programme was completed, which tested the strike extent and down dip extensions of the known mineralised system at Tropicana. Additional closer spaced drilling was undertaken at Havana South following up on several high grade intercepts. A total of 11,029m of RC and 14,582m of DD drilling were completed. A third Mineral Resource model update was completed incorporating all of the 2016 drilling to the end of July. A further Mineral Resource model update is planned for the end of the year.

A total of 8,259m of AC, 4,278m of RC and 822m of DDH drilling were completed as well as SAM-EM survey over the Beetlejuice prospect targeting Ni-Cu-PGE mineralisation.