

# **FINAL REPORT**

**on**

## **EL 24167 Suplejack**

**To JULY 18 2008**

Report prepared for

**Suplejack Pty Ltd**

ACN 109 034 228

by

**ORD RIVER RESOURCES LTD**

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Date: April 2009

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## **1 Summary**

Suplejack Pty Ltd acquired EL 24167 on the 11 April 2005 from the previous applicants for the tenement. The tenement was granted on 19<sup>th</sup> October 2005

The tenement is located in the Tanami Desert, approximately 650 km northwest of Alice Springs. Access is by the Tanami Road and the Tanami-Lajumanu road to Suplejack Downs station. Access to the tenement is affected by the monsoonal climate with road access restricted during and after the wet season.

The tenement is wholly contained within Suplejack Downs station.

Previous explorers on the tenement area have been MJ Kidd and various partnerships and JV's between Kidd and P Messenger, Dominion Gold, Acacia Resources and AngloGold. In excess of \$5 million had been spent by previous explorers on the original tenement areas which included the area now held as EL 24167, which resulted in identification of a small resource at Tregony, delineation of a major zone of gold occurrences and identification of a series of untested targets with potential for structurally controlled gold deposits similar to the Groundrush deposit. A substantial regional database also exists for the tenements, which has been used to assist in reinterpretation of potential on the tenement.

Geology is partly equivalent in age with host sequences for the gold deposits at Tanami. Major D5 age structures are thought to control the majority of gold deposits in the Tanami region and major structures of the same age control gold mineralisation within and adjacent to the tenement.

Previous work carried out by Suplejack on EL 24167 has been ongoing review of previous data, identification of major mineralised structures not targeted by previous exploration, initial sampling of a number of soil grids, and aerial photography over the tenement.

Results of the work carried out have been identification of multi element gold anomalies along the Old 8 Mile Fault within the tenement and to the south where significant gold mineralisation was intersected in drilling on EL23454.

Current work has been the continuation of the process of obtaining heritage clearance over the tenement following withdrawal of verbal permission to carry out exploration over the area. A heritage survey was completed.

The expenditure by Suplejack Pty Ltd from April 11, 2005 up to July 18, 2008 has been a total of A\$ 166,381.86.

## **2 Introduction**

EL 24167 was applied for by Norman McCleary and granted on 19/10/04. The tenement transfers were completed on 11<sup>th</sup> April 2005 and are now held 100% by Suplejack Pty Ltd. The tenement has an area of 113.1 km<sup>2</sup> and forms part of a group of tenements totalling 587 km<sup>2</sup>. EL 24167 was automatically cancelled (section 31A.) on 18 July 2008 upon the grant of Substitute Exploration Licence 26484.

This report covers work done in the period 20 October 2004 to 18 July 2008.

## **3 Location, Access and Climate**

The Suplejack project region is located in the northern Tanami region approximately 650 km NW of Alice Springs, approximately 80 km north of the Tanami mine and 30 km north of the Groundrush mine. Location is shown on figure 1.

Access is via the Tanami Road from Alice Springs to the Tanami Mine then via the Lajumanu-Tanami Road to Suplejack Downs station. The tenement is wholly within the boundaries of Suplejack Downs station and access to the tenement is via station tracks and by new access put in place by the previous explorers.

Climate is monsoonal with an average of less than 400 mm annual rainfall, predominantly between December and March. Rainfall is usually experienced in October and always in November in the build up to the wet season. In heavy or late wet seasons road access to the tenements may be restricted for heavy vehicles until late May or June.

The region has generally low relief with a regional fall to the inland drainage areas of Lake Buck and associated salt pans. Local relief in the tenement is approximately 50 metres and consists of broad drainage areas with local channels with desert woodlands and scrublands between low ridges with scrublands and spinifex dominated areas.

## **4 Geology of the Suplejack Project Region**

The tenement lies in the northeastern part of the Tanami SE 52-15 1:250,000 map sheet area in the northern Tanami region. The area has been recently been remapped, however the stratigraphy is still being revised as additional data becomes available. Figure 2 shows the regional geology and the group of tenements held by Suplejack Pty Ltd.

The area is underlain by sequences belonging to the Tanami Group, which was deposited on extended Archaean basement. The Tanami Group is thought to be broadly correlatable to the Pine Creek Geosyncline sequences and to the Eastern Halls Creek Belt.

Current understanding of the stratigraphy is that the oldest lithological unit present in the tenements area is the MacFarlane Peak Group which is now included in the Dead Bullock

Formation which is the basal unit in the Tanami Group, dated at about 1840 Ma. The MacFarlane Peak Group consists of mafic volcanics, turbiditic sandstone, siltstone and minor calcsilicate. Killi Killi Formation, which also belongs to the Tanami Group, is also mapped in the area in the eastern part of the tenements area. The Killi Killi Fm. dated at about 1835 Ma, consists of fine grained turbiditic sediments, mostly siltstones, some of which are carbonaceous and also rare cherts and calcareous units. Dolerite sills were intruded into the Killi Killi Fm during deposition.

The Tanami Group was deformed and variably regionally metamorphosed up to greenschist and amphibolite facies at about 1830 Ma by the Tanami Orogenic Event (TOE) and is unconformably overlain by the Ware Group.

The Ware Group consists of basal Mount Winneke Formation, which is not present in the Supplejack area, the Nannygoat Volcanics and the Wilson and Century Formations. The Century Formation consists of conglomeratic sandstone, siltstone and fine-grained sandstone and is overlain by the Wilson Formation, which consists of greywacke, quartz wacke and siltstone. The Ware Group was laid down between about 1825 and 1815 Ma in a post TOE environment associated with D4 extensional rifting. This is a similar environment to and is partly coeval with that proposed for the Mt Charles Formation, which is the host to the gold deposits at Tanami.

The Nannygoat Volcanics in the tenements area have been identified as feldspathic quartz sandstones, some of which are lithic and pebbly to cobbly, olivine basalts and fine grained felsic igneous rocks including dacites, some of which may be ignimbrites. The discrepancy between bedrock geology as mapped by Acacia Gold and by the Geological Survey suggests that there may be considerably more basalt intercalated in the Nannygoat Volcanics than appears on the Geological Survey 2001 1:250,000 scale geological map of the Tanami Sheet.

Post orogenic granites have intruded the sequences in the Tanami region and portions of two different granite suites, one strongly magnetic in the south-east of EL23454 and in EL 23492, and one weakly magnetic in the southwest and just to the south of EL 23454, are present in and adjacent to the tenements.

Peneplanation of the Tanami and Ware groups took place after emplacement of the late and post orogenic granite suites and postdates 1800 Ma. Deposition of the Supplejack Sandstone, which consists of fine grained quartzose sandstone units with thick interbedded siltstone units, took place after this time and by correlation with similar sequences in the NT, probably was deposited in the 1790-1760 Ma time span, but may be significantly younger.

Supplejack Downs Sandstone is currently correlated with the Birrindudu Group, which has similar lithologies. Earlier stratigraphic interpretations suggest that the Supplejack Downs Sandstone underlies the Birrindudu Group and structural interpretation shows that the Supplejack Downs Sandstone was folded with the regional scale Tanami Synform and is cut by the structures that control gold mineralisation at Tanami. The Supplejack Downs Sandstone contains significant siltstone units that are micaceous, red coloured and are recessive in the landscape. The structural history, molasses type lithologies, and probable

unconformable relationship to the overlying Birrindudu Group suggests it may be an equivalent of the Pargee Sandstone, though not necessarily of the same age and correlatable. Probable thrust faults that appear to be mineralised are present in the Supplejack Sandstone immediately west of the Boco prospect area.

Overlying this platformal cover is Cambrian age Antrim Plateau Basalt. Alluvium, partly related to palaeochannels, is present overlying other lithologies. Aeolian sand is widespread and may be up to several metres thick.

#### **4.1 Structure and Mineralisation**

The Black Peak Fault, trending NNE from the Tanami Goldfield, is a major D5 structure that merges northward with the NS trending Supplejack Shear Zone. These D5 structures and others are associated with significant mineralisation throughout the Tanami region, including The Granites, Tanami and Dead Bullock goldfields. They postdate the intrusion of the granite suites and are thought to predate deposition of the platformal sequences of the Birindudu Group.

D6 structures cut all prior structures and are of unknown age. Reactivation of structures belonging to D5 and D6 and possibly older structures has occurred since formation and affects younger lithologies and Cainozoic regolith distribution.

Mineralisation at Tregony, Thomas, Tregony North, Maly's Knobs, Boco and other prospects within the Nanny Goat Volcanics and Killi Killi Formation, within the group of tenements held by Suplejack Pty Ltd, is associated with the NS trending Supplejack Shear Zone or with closely spatially associated parallel structures and splay faults. Mineralisation at Crusade South, Normandy Hill PHD, PHD North, Joshs, Burnt Ridge and Arrow Hill are related to structures cutting through the Supplejack Sandstone, which are thought to be D5 structures where the same structures cut the Nannygoat Volcanics.

Mineralisation at Crusade, immediately northeast of the tenement area, is related to D5 reverse thrusting within the Nannygoat Volcanics.

Figure 3 shows the relationship between mineralisation in the vicinity of the Suplejack tenements and regional scale structures.

It should be noted that the age of mineralisation interpreted for Callie Deposit at Dead Bullock Soak overlaps with the age of the base of the Birrindudu Group, ie possibly younger than or of an equivalent age to the Supplejack Sandstone.

#### **5 Previous Work on the Tenement Areas**

The current tenement area was originally applied for by MJ Kidd in 1987 and has been worked by Kidd in JV with Messenger, Dominion Gold, and Acacia Resources. Work carried out has been regional RAB sampling, drainage sampling and lag sampling by Normandy Gold while assessing the area for JV purposes.

Exploration for gold commenced with Kidd and Messenger in 1988 on EL 6008. Drainage sampling carried out by and for Kidd resulted in anomalous results being obtained from the southern part of the current tenement where Birthday Creek drains off the Old 8 Mile Fault at PHD North and Josh's prospects. Sampling by Acacia Resources under EL 7873 was reported in the partial relinquishment of SEL 8788. Acacia carried out several lines of lag samples and one line of RAB samples as well as a series of randomly distributed lag samples. Anomalous values were found in the vicinity of quartz reefs associated with the Old 8 Mile Fault and also at Burnt Ridge prospect.

No follow up of any of the anomalous results was carried out.

Some surface geochemical sampling orientation programs were carried out by Supplejack Pty Ltd and demonstrated the effectiveness of this method of sampling with generally good correlation with previous bedrock sampling.

A 2900 line km magnetic and radiometric survey was flown over the tenement by Acacia and used to assist with drill hole targeting and for diamond exploration carried out in conjunction with Stockdale Prospecting.

AngloGold carried out a review of the previous work on the tenements prior to withdrawing from the JV with Kidd and Messenger and identified a number of areas with untested structural targets similar to Groundrush and a series of other geochemically undertested areas. Areas overlain by Supplejack Sandstone were not tested to any significant extent previously, due to perceived lack of potential for gold mineralisation.

## **5.1 Regional Potential on the Old 8 Mile Fault**

The Pink Ridge North Prospect, Five Mile Prospect, PHD Prospect, PHD North, Jade and Josh's prospects are located along the Old 8 Mile Fault system, in EL 23454, EL 25208 and EL 24167, which is thought to be a splay fault off the Supplejack Fault, a major structure in the Tanami region.

The host rocks to the anomalies are Supplejack Sandstone, as at PHD prospect, however the underlying Dead Bullock Formation, the host to Callie and mineralisation at The Granites, is also exposed near the northern and southern ends of the fault.

Compilation of previous RAB, lag and stream sediment sampling results, together with work carried out by Ord shows that mineralisation extends over 25 kilometres along the Old 8 Mile Fault before it joins other splays off the Supplejack Shear Zone.

As the Dead Bullock Formation is exposed to both the north and south of the areas with the principal gold anomalies on the Old 8 Mile Fault known at present, it is thought that the depth to the unconformity with the Dead Bullock Fm is not likely to be deep over much of the strike length of the fault. This suggests that the model proposed for Five Mile, which has now been drill tested, may have application at all the identified prospects shown on the attached map and that a series of resources may be discovered.

Potential for a Tanami mine complex style of operations is envisaged to be the target that may be found along this fault zone.

## **6 Exploration Efforts by Suplejack Pty Ltd**

The details of exploration efforts between end of 2004 and 2008 below have been abstracted from past annual reports lodged with the Northern Territory Department of Primary Industry, Fisheries and Resources.

### **6.1 Exploration Efforts in 2005**

Work carried out in the first year of tenure has included aerial photography, drainage sampling, soil sampling and petrography. Reader is referred to 2005 annual report by Peter Temby for full details and results of the work.

#### **6.1.1 Aerial Photography**

Aerial photography at a scale of 1:25,000 was carried out over the entire group of contiguous tenements held by Suplejack Pty Ltd. Ground control was put in place and surveyed to provide the facility to produce an accurate contoured plan of the tenement if required in the future.

#### **6.1.2 Drainage sampling**

Drainage sampling was carried out to target the Old 8 Mile Fault, a probable splay off the Suplejack Shear Zone. The fault was mapped as far as Old 8 Mile bore in the north of the tenement, hence the name. Drainage samples were also taken to target two areas interpreted from the aerial photos to be of interest. These are the Arrow Hill area, where outcropping quartz reefs are present and Kaolin Hill where anomalous outcrop patterns that looked like a fold structure were present. The drainage samples along the Old 8 Mile Fault resulted a series of low order drainage anomalies were interpreted. These results were used to locate soil grids discussed below.

#### **6.1.3 Soil Grids**

PHD North grid extends from the southern boundary of the EL northwards to a northeast flowing tributary of Birthday Creek. Ten soil sample lines have been sampled. Soils samples were analysed by a BLEG method for gold, copper, zinc and lead. Soil gold anomalies with continuity over approximately 500 metres were located.

Josh's grid extends south from Josh's Bank Bore for approximately five kilometers and was sampled with ten reconnaissance soil lines. Results were discussed in detail in the following year's (2006) annual report.



## **6.2 Exploration Efforts in 2006**

Work carried out in the Second year of tenure has included structural interpretation, and soil sampling. Below is the abstract from 2006 Annual Report.

### **6.2.1 Structural Interpretation**

A series of splay faults from the Old Eight Mile fault were interpreted within EL 24167 using the aerial photography taken during the previous year.

### **6.2.2 Soil Grids**

PHD North grid extends from the southern boundary of the EL northwards to a northeast flowing tributary of Birthday Creek. Ten soil sample lines have been sampled. Soils samples were analysed by a BLEG method for gold, copper, zinc and lead. Soil gold anomalies with continuity over approximately 500 metres were located.

Josh's grid extends south from Josh's Bank Bore for approximately five kilometers and was sampled with ten reconnaissance soil lines. A total of 313 soil samples have been taken on the tenement. Soil sample ledgers were included as appendix 2 of 2006 Annual Report.

No soil sampling has been undertaken so far at Burnt Ridge prospect but is planned in the future. Interpretation of satellite radar imagery suggests that a north-south structure may be present at this location, parallel to the regional scale fault approximately one kilometre to the east.

### **6.2.3 Petrography**

A series of samples collected along and adjacent to the Old 8 Mile Fault and associated quartz reefs were sent to Dr BJ Barron for petrography. Conclusions were that hydrothermal fluids from a granitic source had affected some of the specimens described and that a telescoped mesothermal/epithermal igneous-related hydrothermal system is present. Possible anhydrite inclusions in quartz of two samples suggest that early high sulphidation fluids were present.

Descriptions of the samples and the petrographic report are included in appendix 3 of 2006 Report.

## **6.3 Exploration Efforts in 2007 & 2008**

Work has consisted of attempts to obtain clearance from the CLC over various areas of the tenement.

A letter sent to the CLC in June 2007 was not answered and indicates the history of delays on the tenement clearance.

Following advice from consultants and due to failure of the CLC to respond to correspondence, Ord finally approached the Aboriginal Areas Protection Authority and they agreed to carry out a heritage survey over the tenement in November.

## **7 Expenditure on EL 24167**

The expenditure by Supplejack Pty Ltd from April 11, 2005 up to July 18, 2008 has been a total of A\$ 166,381.86.

Break down of the expenditure is given in appendix 2.

## **8 Conclusions and Recommendations**

It is concluded that despite previous exploration on the current tenement area there remain a significant number of untested or undertested targets. These are predominantly associated with the Old 8 Mile Fault or subparallel structures thought to be splay faults off the Supplejack Shear Zone.

Drilling on the tenement area to the south in the Old 8 Mile Fault zone has shown that a major shear zone is present with significant gold mineralisation warranting further follow up.

The Supplejack Sandstone is a mineralised unit within the tenement area and may not be directly correlatable with the Birrindudu Group.

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## **Appendix 1**

**CLC Letter June 2007**

**EL 24167**

Central Lands Council  
33 Stuart Highway  
Alice Springs NT  
June 26, 2007

Attention: Mr B Anderson Steele

Dear Sir

**Re: Work Program Approvals for EL 24167 and 25208 for 2007**

Ord had requested clearance over EL 24167 in 2005 and we understood from a meeting between Mr B Anderson Steele and Ord personnel at the time that we would be allowed to work the area as it would be considered a continuance. This was never put in writing and subsequently not acknowledged. In the mean time we had carried out some reconnaissance spaced soil sampling but stopped when we were advised that there was no agreement.

We subsequently requested clearance at the beginning of 2006 but have not yet had any reply and all work on the tenement has ceased.

We also applied for clearance for soil sampling on EL 25208 in 2006 but have not had any replies in relation to that tenement.

We have attached maps of the areas requested for soil sampling, which we anticipate will lead to RC drilling in selected areas at a later date. We will request clearance for that activity when we know where we wish to drill.

In addition we received a letter dated 6 December 2004 in which you advised of an exclusion zone around a point at 610500E and 7871000N with a radius of 1500 metres. This area lies within areas shown by the previous explorers, Acacia Resources and AngloGold Australia, to be within an area approved for geochemical soil sampling, posthole RAB and angled RAB drilling and significantly overlaps an area cleared for RC drilling.

We are not aware of an exclusion zone in this area and would like your advice on whether there is an error in the Acacia and AngloGold maps or an error in the grid reference shown above.

Yours truly,



Peter Temby, General Manager Mining Operations

**Appendix 2**

**Expenditure Statement**

**EL 24167**

**For the period ended 19 October 2007**

|        |   |                     |
|--------|---|---------------------|
| 1-2400 | <b>Exploration Licence EL 24167</b>       |                     |
| 1-2402 | Legal fees                                | \$1,015.00          |
| 1-2404 | Misc supplies                             | \$1,408.45          |
| 1-2405 | Consulting fees                           | \$3,125.73          |
| 1-2406 | Contract Geologists                       | \$3,661.88          |
| 1-2408 | Tenement Services                         | \$5,927.11          |
| 1-2409 | Purchase costs/Application Fee            | \$12.50             |
| 1-2412 | Telephone & Internet                      | \$308.60            |
| 1-2416 | Analysis and Milling                      | \$2,492.81          |
| 1-2417 | Vehicle expenses                          | \$5,328.72          |
| 1-2418 | Rent                                      | \$2,500.00          |
| 1-2419 | Misc technical works                      | \$1,972.47          |
| 1-2420 | Aerial Photo - Quote                      | \$3,092.25          |
| 1-2423 | Aerial Photo - Pilot                      | \$749.99            |
| 1-2426 | Aerial Photo - Field supplies             | \$113.80            |
| 1-2430 | Aerial Photo - Travel                     | \$673.90            |
| 1-2433 | Survey Photo - Heli support               | \$7,962.23          |
| 1-2434 | Survey Photo - Pilot                      | \$822.20            |
| 1-2435 | Survey Photo - Surveyor                   | \$1,610.00          |
| 1-2437 | Survey Photo - Assistant                  | \$2,484.65          |
| 1-2438 | Survey Photo - Field supplies             | \$563.47            |
| 1-2440 | Survey Photo - Fuel Heli                  | \$203.52            |
| 1-2442 | Survey Photo - Travel                     | \$255.02            |
| 1-2443 | Fuel & delivery                           | \$1,051.36          |
| 1-2445 | Soil Program - PHD extended               | \$15,629.27         |
| 1-2446 | Soil Program - Geologist                  | \$18,620.98         |
| 1-2447 | Soil Program - Assistants                 | \$27,651.97         |
| 1-2449 | Soil Program - Vehicles/Fuel              | \$1,922.72          |
| 1-2451 | Soil Program - Pilot                      | \$176.24            |
| 1-2453 | Soil Program - Food supplies              | \$46.47             |
| 1-2454 | Soil Program - Field supplies             | \$6,422.16          |
| 1-2458 | Soil Program - Jr Geologist               | \$15,974.02         |
| 1-2460 | Travel Costs - Geologist Sr               | \$138.53            |
| 1-2461 | Travel Costs - Geologist Jr               | \$540.41            |
| 1-2462 | Travel Costs - Assistants                 | \$1,361.00          |
| 1-2469 | Freight - soil samples                    | \$807.21            |
| 1-2472 | Drafting - Consultant                     | \$5,677.93          |
| 1-2483 | Drilling Prog - Prospects                 | \$93.94             |
| 1-2484 | Drilling -Geologist senior                | \$201.64            |
| 1-2485 | Drilling Prog - Jr Geologists             | \$626.30            |
| 1-2496 | Geologists offsite work remune            | \$2,535.23          |
| 1-2497 | Depreciation charges                      | \$15,815.74         |
| 1-2498 | Training                                  | \$4,804.44          |
|        | <b>Total Exploration Licence EL 24167</b> | <b>\$166,381.86</b> |