Westgold Resources Limited

ABN 60 009 260 306

# Castile Resources Pty Ltd

**(ABN 93 124 134 085)**

EL26034

Tennant Creek Project

Annual Report

Reporting Period

25 February 2009 to 24 February 2010

March 2010

| | |
|---|---|
| Report No: | R2010-010 |
| 1:250,000 Sheet: | Tennant Creek SE53-14 |
| 1:100,000 Sheet: | Short Range 5659 |
| Datum: | GDA94 |
| Projection: | MGA |
| Zone: | 53 |
| Author: | Richard Coles |
| Tenement Holders: | Castile Resources Pty Ltd |
| Distribution: | Department of Resources; and Castile Resources Pty Ltd / Westgold Resources Limited |

***Castile Resources Pty Ltd is a wholly owned subsidiary of Westgold Resources Limited***

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## SUMMARY

This report covers exploration completed on EL26034 during the reporting period from 25 February 2009 to 24 February 2010.

The tenement is within the Warramunga Province of the Tennant Region, and is 55 kms north-west of the town of Tennant Creek. It occupies an area of about 58 square kilometres, and forms part of Castile's Tennant Creek Project.

EL26034 lies on the north-eastern end of the highly productive Tennant Creek mineral field, and is 10 kilometres to the north of the Warrego Mine.

Exploration for the year ending 24 February 2010 included continuation of negotiations towards a heritage agreement with the CLC, additional research leading to the location of 3 previously unreported diamond drill holes on the tenement, and report writing. Because of the sensitive nature of negotiations in this and other parts of the region, and the discovery of the Rover1 Deposit, Westgold will not commit to ground exploration until the CLC and the Traditional Owners have ratified a heritage agreement for the tenement which allows exploration access on the ground. Consequently no field work was completed during the year. Previous exploration has been restricted to flying aeromagnetic surveys at various times, the testing of a number of areas by vacuum geochemical drilling to 5m depth, and three diamond drill holes. Ten of the 19 graticular blocks which comprise EL26034 have not been tested on the ground. A new aeromagnetic survey was flown in 2008 by Kevron for NTGS, and this data has not yet been fully interpreted for the delineation of Tennant Creek style copper-gold targets.

The proposed programme includes detailed ground based gravity and airborne helimagnetic surveys. These surveys will be initiated upon successful finalisation of exploration agreements with the CLC. Based on successful target definition from the above surveys and hopeful discovery of any existing core from previous explorer, then the Company would look to advance drilling of targets if warranted. Please note the past diamond holes were only recently discovered to exist. No record of these holes has been found in any open file reports.

Heritage and access negotiations are currently on-going and all field work is subject to suitable agreement being concluded.

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## 1. INTRODUCTION

EL26034 lies within the highly prospective Proterozoic Tennant Creek province, noted for its rich copper-gold deposits associated with the iron oxides magnetite and hematite. (IOCG deposits) The tenement was granted to Castile Resources Pty Ltd on 25 February 2008.

Westgold Resources Limited, through its wholly-owned subsidiary Castile Resources Pty Ltd (Castile), has a large tenement holding in the region, mostly over the Rover field which lies under Palaeozoic cover to the west and southwest of Tennant Creek. The exploration target is IOCG deposits in the shales and greywackes of the Warramunga Province.

Exploration effort by Castile in the Tennant Creek region for the 2009 year concentrated on the Rover field, where a continuation of the deep drilling program was successful in outlining a Jorc-compliant resource of 5.3Mt at 6.1g/t AuEq for 1,037,600 AuEq ounces for the Rover 1 deposit. Work on EL26034 for the year included continuation of negotiations towards a heritage agreement with the CLC to permit exploration access in the tenement, additional research leading to the location of 3 previously unreported diamond drill holes on the tenement, and report writing.

## 2. LOCATION

EL26034 is located 55 kms NNW of the town of Tennant Creek, NT. Access to the tenement is 47 kms from Tennant Creek via the Warrego Road, then about 18 kms north along small tracks.

The sealed Stuart Highway passes through Tennant Creek, and is 38 kms to the east of the tenement. The Alice Springs to Darwin railway line passes through the eastern edge of the tenement.

## 3. TENURE

EL26034 consists of nineteen graticular blocks, and totals about 58 square kilometres. (Figure 1) It was granted on 25 February 2008.

The tenement title is held 100% by Castile Resources Pty Ltd, a wholly owned subsidiary of Westgold Resources Limited.

| Lease | Project | Granted Area | Approximate Area ha. | Application Date | Grant Date | Expiry Date |
|---|---|---|---|---|---|---|
| EL26034 | Tennant Creek | 19 Blocks | 5,798 | 10-Apr-07 | 25-Feb-08 | 24-Feb-14 |

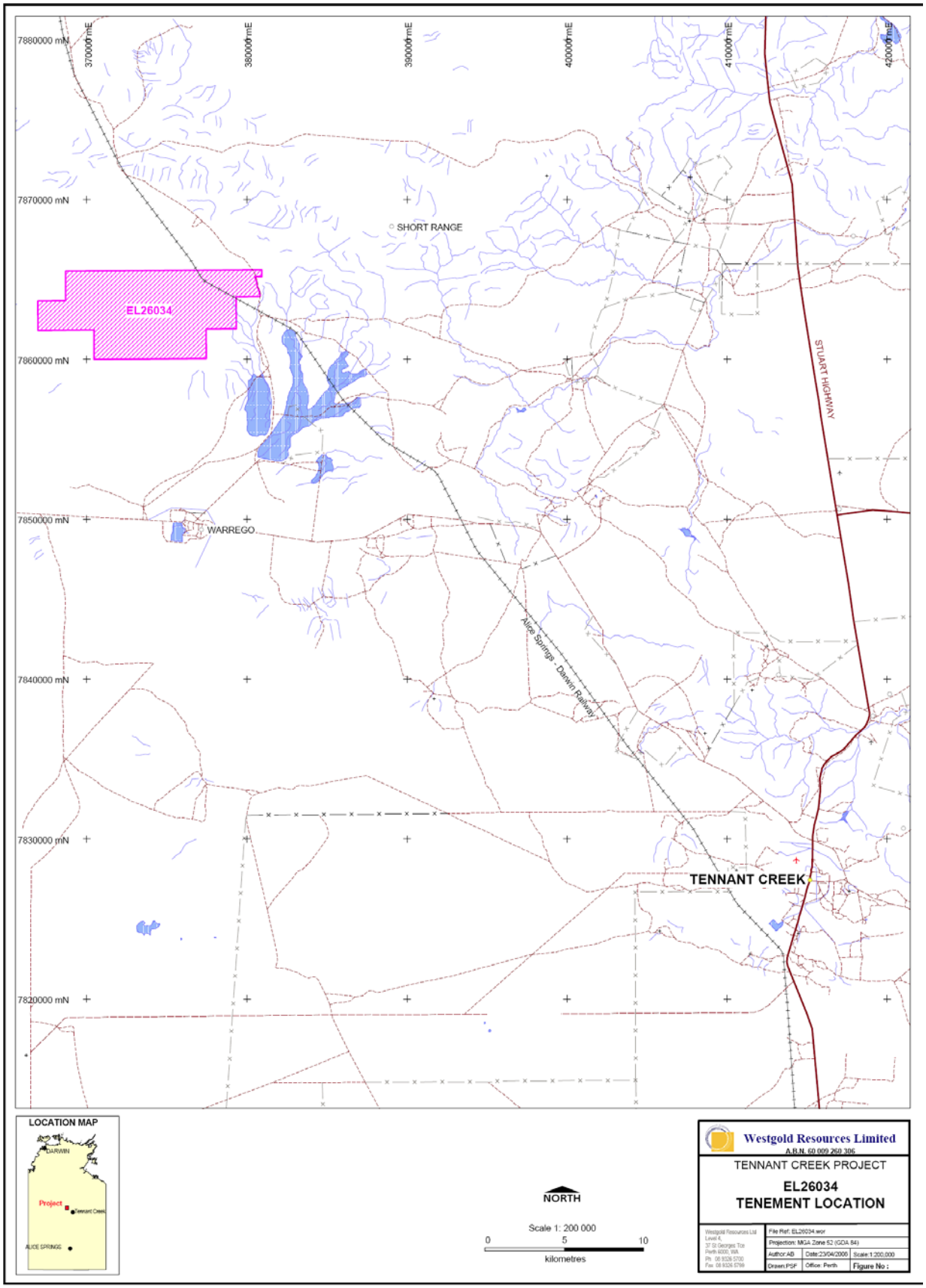


**Figure 1 – Tenement Location Plan**

# 4. GEOLOGY

## *4.1 Regional Geology*

The Tennant Creek Region contains three different geological provinces, the Warramunga Province, and the unconformably overlying Palaeo- to Mesoproterozoic Davenport Province to the south, and the Tomkinson Creek Province to the north. To the east and west the Palaeozoic Georgina and Wiso basins overlie Proterozoic rocks of the Tennant Creek Region. The Aileron Province of the Arunta Region occurs to the south of the area, the contact between it and the Tennant Creek Region being obscured by Palaeozoic basinal cover sequences.

The 1860-1850Ma Warramunga Province is approximately centred on the township of Tennant Creek, and contains the Palaeoproterozoic Warramunga Formation. This is a weakly metamorphosed turbiditic succession of partly tuffaceous sandstones and siltstones which includes argillaceous banded ironstones locally referred to as 'haematite shale'.

Rocks of the Warramunga Formation show open to closed folding about approximately east-west-orientated, open, upright axes, and there is a well developed axial-planar slaty cleavage. This 1850-1845Ma deformation, the Tennant Event (Barramundi Orogeny), is contemporaneous with predominantly felsic magmatism of the Tennant Creek Supersuite. Two overprinting cleavages and associated kink bands are also present, which are attributed to the superimposition of the ~1700Ma Davenport Event deformation. Volcano-sedimentary rocks of the Warramunga Province are intruded by granite and porphyry of the Tennant Creek Supersuite, (~1850Ma) the Treasure Suite (~1810Ma) and the Devils Suite. (~1710Ma) The Tennant Creek Supersuite includes the Tennant Creek, Cabbage Gum, Channingum, and Hill of Leeders granites, and the Mumbilla Granodiorite. In the Warramunga Province, the Treasure Suite includes felsic and mafic volcanic rocks, porphyry, granophyre, monzodiorite, diorite and dolerite, but granite is not represented in outcrop. The Devils Suite is represented by the Warrego Granite and Gosse River East Syenite. Lamprophyre is penecontemporaneous with the Devils Suite.

The Woodenjerrie beds outcrop in the south of the province and are correlated with the Warramunga Formation. However, the Woodenjerrie beds apparently lack the massive ironstone bodies that are associated with the Warramunga Formation.

The Junalki Formation is also approximately correlated with both the Warramunga Formation and Woodenjerrie beds, but includes a greater proportion of intercalated volcanic rocks than the latter unit. Volcanic rocks have not been recognised in the Warramunga Formation.

Volcano-sedimentary rocks of the Ooradidgee Group (~1850-1820Ma) unconformably overlie the Warramunga Formation and its correlatives, extending to the south into the adjacent Davenport Province.

The Tomkinson Creek Province (1800-1400Ma) unconformably overlies the Palaeoproterozoic Warramunga Province to the north. Three successions outcrop in the province, the Tomkinson Creek, Namerinni and Renner groups. These are all predominantly sedimentary successions and contain sandstone, siltstone and shale. The Tomkinson Creek Group also includes a mafic volcanic unit. The oldest succession in the province, the Tomkinson Creek Group, is mildly deformed but unmetamorphosed and is correlated with the Hatches Creek Group of the Davenport Province. The successively unconformable Namerinni and Renner groups are correlated with the McArthur and Roper groups respectively.

The Davenport Province (1800-1700Ma) unconformably overlies the Warramunga Province to the south. It contains the Hatches Creek Group, which is composed predominantly of sandstone, siltstone and shale, with felsic volcanic beds in the lower part of the sequence, and a mafic volcanic unit in the middle parts. The ~1710Ma felsic Devil's Suite intrudes the sequence. The ~1700Ma Davenport Event has produced widespread concentric and disharmonic folding in the Davenport Province succession.

Palaeozoic rocks of the Georgina and Wiso basins unconformably overlie the Proterozoic sequence of the Tennant Creek Region to the east and west respectively. These are largely covered by a thin veneer of unconsolidated Cainozoic cover.

The Warramunga Formation hosts major IOCG deposits of Au-Cu-Bi, temporally associated with the Tennant Suite granites, intruded into the Warramunga Province. Deposits of this type represent the most important mineral production, and remain the most important exploration target, for the region. Occurrences of W-Sn, U, Ni, Cu, Pb, Zn are known from the Davenport Province. The Tomkinson Creek Province hosts manganese deposits at Bootu Creek.

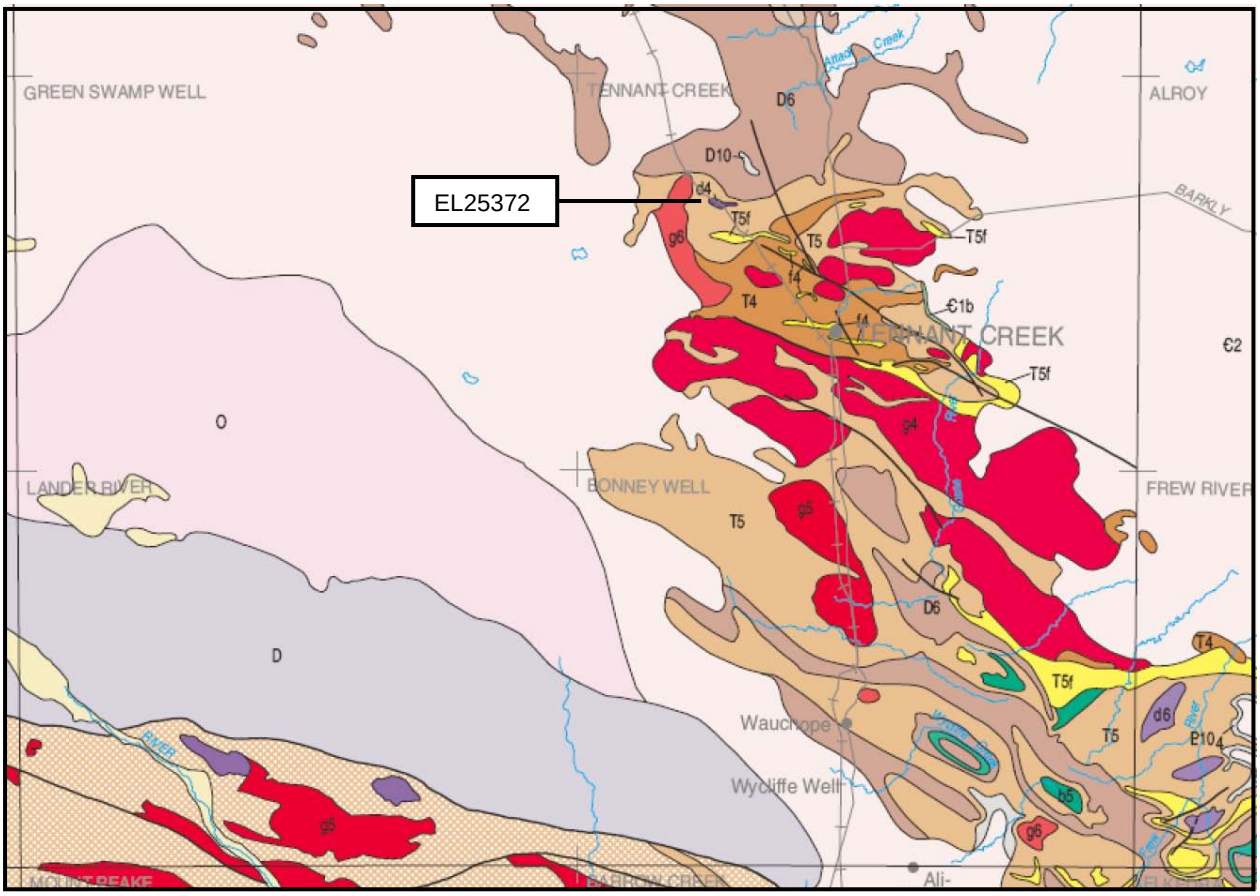


**Figure 2: Regional Geological Setting, EL 26033, Tennant Creek, NT. (After Ahmad *et al* 2004)**
(*see Ahmad et al for legend)*

## *4.2 Local Geology*

EL26034 lies about 55 kms to the NNW of the town area of Tennant creek. It lies immediately to the south of the elevated ridges of arenites and dolerites of the Tomkinson Creek Group which form the Short Range. The tenement is almost entirely blanketed by recent alluvial cover.

In the eastern part of the tenement the alluvium is underlain by arenites, siltstones and shales of the Ooradidgee Group. In the south western quarter the alluvium is underlain by the Warrego Granite, which is thought to be part of the Devils Suite. The contact between the two is obscured by recent sediments, but from inspection of the aeromagnetic data appears to be faulted, and strikes NW. Warramunga Group rocks may underlie the Ooradidgee Group at an unknown depth within the tenement.

The Warrego mine occurs in Warramunga Group sediments 10 kms to the south of EL26034.

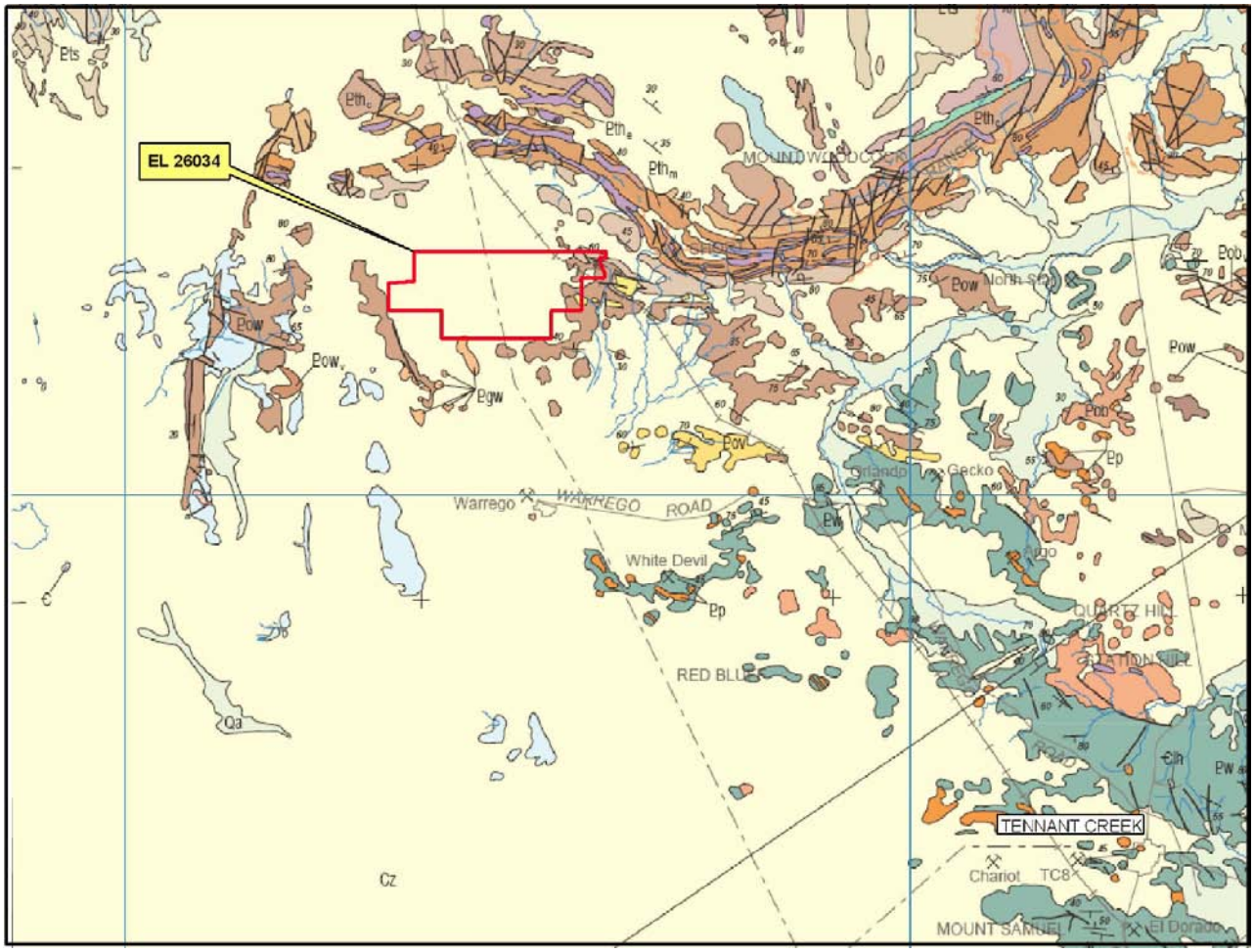


**Figure3: Local Geological Setting, EL 26034. (After Donnellan, 2004) 1: 50,000**

### *4.3 Exploration History*

Small traces of gold were discovered in the creeks and gullies south of the telegraph station at Tennant Creek in 1879. In 1926 a miner named Charlie Windley worked a claim in weathered rock on what was to be the site of the Great Northern Mine, and made enough to justify his efforts. One of the telegraph operators, 'Woody' Woodforde, had enlisted local Aborigines in the search for gold and, in 1932, an Aboriginal man brought Woodforde a lump of ironstone containing visible specks of gold. This discovery led to the discovery of gold in ironstone deposits returning as much as 1.2 kg Au per tonne, and led to Australia's last great goldrush. By 1934 population numbers prompted the government to gazette a new township, to be called Tennant Creek.

The Eldorado Mine, which opened in 1932 and closed in 1958, produced nearly 175,000 grams of gold. It was also a significant producer of copper, and was the only mine in the field to continue production throughout World War II. The discovery of the copper deposits in the field proved very profitable, and dominantly copper-producing mines were established.

The Nobles Nob Mine was founded by Jack Noble, and became an open-cut operation in 1967 after the main shaft collapsed. Nobles Nob produced assays which regularly exceeded 100 oz (3.2 kg) of gold per metric ton. One particularly rich area within the ore body produced over 300 oz per ton. Nobles Nob produced over a million ounces (32 tons) of gold.

The Warrego Mine began mining in 1971, and produced 7 million tonnes of ore at 2.5% Cu and 6.6 g/t Au.

Historical production from the Tennant Creek field has been in excess of 5 million ounces of gold and 500,000 tonnes of copper.

The Tennant Creek 1:250,000 map sheet was geologically mapped in 1970-71 by the then BMR (Dodson, 1978), and later by the NTGS in 1999. The Short Range 1:100,000 map sheet was mapped by NTGS in 2001.

In 2008 Kevron completed an airborne magnetic and spectrometer survey of the Tennant Creek 1:250,000 map sheet. Lines were flown at $180^{O}$ at a spacing of 200m.

The Tennant Inlier gravity survey, which covered the area approximately bounded by 324,000 -500,000E and 7,733,000 - 7,897,000N was completed in 2001. Station spacing was approximately 4 kms. The region is also included in the wide-spaced Australia-wide gravity dataset.

The area of EL26034 has been subjected to numerous programs of exploration since 1970.

*1968/69* Geopeko Ltd held AtoP 1846 which covers the northern half of EL26034. They completed mapping, surface magnetics and auger soil surveys over the Explorer 36 anomaly, which located no geochemical anomalies.

*1970-71* Geotechnics Australia explored AtoP 2892 on behalf of Inter-Copper Ltd. The work was mostly carried out outside the area of EL26034, and included mapping, ground magnetics, an airborne VLF EM and Scintillometer survey. A few anomalies were noted. In 1972 Inter-Copper re-pegged the area as EL59, and re-interpreted the magnetics. No follow-up was reported.

*1970-71* The Westmorland JV explored EL2090 with an airborne magnetic survey. A low-order anomaly immediately south of EL26034 was followed up with ground magnetics and auger drilling, with disappointing results.

*1972-75* ADL/ Nobelex flew aeromagnetics over EL375 and EL376, which together covered a large part of the EL26034 area. One anomaly was located within EL26034, which was then more closely defined with ground magnetics. This does not appear to have been followed up any further.

*1977-83* In this period several companies, including Uranerz, Marathon, and CRA, explored the region for uranium. The majority of this work consisted of surface mapping, radiometrics and rock-chip sampling, with water sampling from some existing bores. Two large ground-water uranium anomalies were located, well outside the area of EL26034, which were considered to be caused by the leaching of nearby granites.

*1983-85* Peko explored EL3573 and 4179 for copper-gold deposits. They flew aeromagnetics/ radiometrics, locating 3 anomalies which were all outside EL26034. The ground over 26034 was relinquished.

*1986-91* CEGB explored EL4895, which covered all of EL26034, between 1986 and 1988. They re-assessed the 2 large uranium-in-groundwater anomalies located by CRA, and completed ROAC and U-in leaf-ash surveys, ground magnetics, radiometrics and EM. From 1989 to 1991 Poseidon took over exploration, and completed aeromagnetics and multi-element region stream sediment sampling. Several anomalous areas were delineated, over which they carried out gravity surveys, soil sampling and RC drilling. None of these anomalies was on EL26034. RC drilling on the Chook anomaly, to the south west of EL26034, returned a best intersection of 4m @ 2.37% Cu.

*1991-94* Western Mining Corporation completed magnetic interpretation, ground magnetics and gravity in EL7153. Most of the follow up work was on the Alaska anomaly, which is south of EL26034. No additional follow up was completed.

*1993-2002* Between 1993 and 1995 Poseidon explored a number of EL's in the general region of EL26034. They compiled and reinterpreted the 1984 Aerodata and 1989 Austirex airborne magnetic surveys, identifying anomalous areas based on magnetic response and the intersection of magnetic features with structural

zones. Selected anomalies were explored with ground magnetics, gravity surveys, soil sampling, vacuum drill multi-element geochemistry. Work done within the area of EL26034 included vacuum drilling 95 holes in EL8080, and a further 95 holes in EL8081. About 40 vacuum holes were also drilled in EL7896, on the most western edge of EL26034. This work located a number of low-order geochemical anomalies in heavy mineral concentrated from samples of drilled overburden.

In 1995 Poseidon amalgamated 7 EL's into a single substitute exploration licence, SEL8814. This covered parts of EL26034. They carried out a global interpretation of the region, and drilled an additional 255 vacuum holes within the EL26034 area. This was followed up with 3 RAB holes with disappointing results. All further work was done south of the EL26034 area. Giants Reef acquired all of Normandy Poseidon's assets in the Tennant Creek region in 2001, and the SEL was relinquished in 2002.

*1995-98* Yardarino Mining NL held EL9095, 2 blocks of which coincided with EL26034. They carried out vacuum drilling with limited RAB follow-up, but all south of EL26034.

*2001-06* Giants Reef held EL9995, and Meteoric Resources held EL24364. Each carried out literature searches, and relinquished the ground.

## 5. WORK COMPLETED DURING THE REPORTING PERIOD

No field work was carried out in EL26034 during the reporting period. Exploration activities were restricted to data compilation and interpretation and included:

- It was discovered the three diamond holes have previously been drilled on the EL and Westgold is attempting to locate the original core and data for EL26034. Emmerson Resources is assisting to see whether the core still exists in their core library. Currently all that can be determined is the location of the hole collars, and no real data has been found. As far as can be determined there is no record of the holes in open file data reports.
- A draft heritage agreement was provided by the CLC covering four tenements in the Tennant Creek region, including EL26034. It is currently under review by the company.
- Report writing.

## 6. RESULTS

Mineral exploration has been carried out in the general area of by EL26034 by numerous companies over a 35-year period. Aeromagnetic data acquisition and interpretation, vacuum drill geochemistry, and minor RAB drilling has been completed within the boundaries of EL26034. Vacuum and RAB drilling has been carried out within nine of the 19 blocks which comprise the tenement. Apart from the 3 recently discovered diamond drill holes, which are of unknown depth, no testing has been completed to depths greater than about 50m, and that only in 3 RAB holes.

Progress is steadily being made towards a heritage agreement with the CLC for the tenement. Due to the sensitive nature of exploration in the region, and the discovery by Westgold of the Rover1 Deposit to the south, Westgold will not mount an exploration program on the ground until an access agreement has been signed.

The tenement is underlain by Ooradidgee Group sediments, and not the more commonly mineralised Warramunga Formation. However, it is evident that the copper mineralisation at the Chook Prospect, about 10 kms south west of EL26034, also occurs within Ooradidgee Group sediments, and this may represent a valid target stratigraphy. It is also possible that the Warramunga Group underlies the Ooradidgee Group at an unknown depth within the tenement area.

## 7. ENVIRONMENTAL / REHABILITATION REPORT

No environmental rehabilitation has occurred during the reporting period as no exploration work of a ground-disturbing nature was carried out.

## 8. CONCLUSION AND RECOMMENDATIONS

EL26034 lies on the western end of the belt of the Tennant Creek field, 10 kilometres north of the 1.6 million-ounce Warrego Mine. Work by previous companies has demonstrated that low-order magnetic and geochemical anomalism occurs within the tenement. This has been tested in several areas by surface magnetic surveys, geochemical sampling of the overburden material to depths of up to 5m, and 3 RAB drill holes. Three diamond drill holes have been recently found to have been drilled on the tenement, but no details are available.

Future work over the tenement will include the signing of a heritage agreement over EL26034 to allow exploration access on the ground, additional research into the recently discovered diamond drilling on the tenement and detailed ground based gravity and airborne helimagnetic surveys.

The estimated cost of the programme is shown below.

| | | |
|---|---|---|
| ▪ Personnel – Salaries & Wages | | 7,000 |
| ▪ Geophysical (magnetic data) processing & interpretation for deep target assessment | | 4,000 |
| ▪ Gravity Survey | | 8,000 |
| ▪ Airborne Helimag Survey | | 7,000 |
| ▪ | Sub-Total | 26,000 |
| ▪ Administration/Overheads | | 2,000 |
| ▪ **Total proposed programme (minimum)** | | **$28,000** |

## 9. REFERENCES

Ahmad, M & Scrimgeour, IR. (2004) Geological Map of the Northern Territory, 1:2,500,000 Scale. Northern Territory Geological Survey

Dodson, RD. & Gardener JEF. (1978) Tennant Creek, Northern Territory – 1:250,000 Geological Series. *Bur. Min. Resour. Aust. Explan. Notes SE53-14*

Donnellan, N. (2004) Geology of the Tennant Region. 1:500,000 Geological Special Northern Territory Geological Survey

# Appendix 1

## BIBLIOGRAPHIC DATA SHEET

| | |
|---|---|
| Report Number: | R2010-010 |
| Report Name: | Annual Report EL26034, Tennant Creek Project for the period 25 February 2009 to 24 February 2010 |
| Prospect Name(S): | Tennant Creek |
| Tenement Number: | EL26034 |
| Owner/JV Partners: | Castile Resources Pty Ltd |
| Agreements: | N/A |
| Commodities: | Base Metals |
| Tectonic Units: | Warramunga Province; Tomkinson Creek Province. |
| Stratigraphic Units: | Warramunga Formation; Tennant Creek Supersuite; Treasure Suite; Ooradidgee Group |
| 1:250,000 Map Sheet: | Tennant Creek SE53-14 |
| 1:100,000 Map Sheet: | Short Range 5659 |
| Keywords: | Exploration, Geology, Magnetics, IOCG, gold, copper |