

ABN 60 009 260 306



# Castile Resources Pty Ltd (ABN 93 124 134 085)

# **Combined Annual Report**

# EL8823, EL8994, EL24541, EL24989, EL25427, and EL25511

**Rover Project** 

Reporting Period 8 March 2008 to 7 March 2009

# April 2009

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1:100,000 Sheets:	Billiatt 5558; Kelly 5658; Hanson 5557; Chaluba 5657.
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	Westgold Resources Limited

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

#### SUMMARY

This report covers exploration completed on the Rover Combined Reporting tenement group for the period 8 March 2008 to 7 March 2009.

The Rover Project is located approximately 100km west-southwest of the Tennant Creek township, and includes a number of granted tenements and applications that fall within aboriginal freehold lands of the Karlantijpa South Land Trust and Karlantijpa North Land Trust. The project area is considered prospective for copper and gold and base metals mineralisation associated with Iron Oxide Copper Gold (IOCG) mineralising systems.

Combined reporting status was granted by the Northern Territory Department of Regional Development, Primary Industries, Fisheries and Resources over six granted tenements forming a contiguous group within the Rover Project. These are ELs 8823, 8994, 24541, 24989, 25427 and 25511. EL8994 hosts two advanced IOCG mineralised systems including the recent Explorer 108 Pb-Zn-Ag resource, and EL24989/EL24541 hosts copper-gold mineralisation at Rover 1. These occurrences demonstrate the high prospectivity of the Rover Project region.

Exploration activities completed during the reporting period include: a detailed helimag survey over 6 magnetically anomalous zones identified by previous aeromagnetic surveys; completion of the detailed ground gravity surveys over the entire tenements area; diamond drilling of the Rover 1 prospect to better define the Cu-Au mineralisation; metallurgical testing of ore samples from the mineralisation at Explorer 108 (Pb-Zn) and Rover 1 (Cu-Au); and mineralogical thin/polished section investigations of ores from the Explorer 108 and Rover 1 mineralisations.

The proposed 2009 programme is planned to include:

- Detailed diamond drilling for extensions to mineralisation at Rover 1. (EL24541 and EL24989)
- Trial downhole geophysics at Rover 1
- Reconnaissance diamond drill testing of topmost ranked magnetic and gravity targets in EL24541 and EL25511.
- Diamond drilling at Explorer 142 (subject to grant of SEL27039)

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# LIST OF DIGITAL DATA FILES (on CD)

ROV_WASL3_COLL_2009A.txt
ROV_WADS3_DHSURV_2009A.txt
ROV_WADG3_DHASS_2009A.txt
ROV_WADL3_GEOL_2009A.txt
ROV_WADL3_ALT_2009A.txt
ROV_WADL3_VEIN_2009A.txt
ROV_WADL3_STRUC_2009A.txt



Collar Files: Survey Files: Assay Files: Lithology Files: Alteration Files: Vein Data Files: Structure Files:

# 1. INTRODUCTION

Castile Resources' Rover Project is located approximately 100km west-southwest of the town of Tennant Creek, and includes a number of granted tenements and applications within aboriginal freehold lands of the Karlantijpa South Land Trust and Karlantijpa North Land Trust. The project area is considered prospective for copper, gold and base metals mineralisation associated with Iron Oxide Copper Gold (IOCG) mineralising systems. EL24989/EL24541 contains high-grade iron oxide-copper-gold mineralisation at the Rover1 prospect, and EL8994 hosts two advanced IOCG mineralised systems including the recently announced Explorer 108 Pb-Zn-Ag resource. The presence of these mineralised systems demonstrates the excellent prospectivity of the Rover field.

Historical exploration has been carried out over the region sporadically over the past 40 years. Much of the work has been restricted to airborne and ground geophysical techniques, with detailed ground geophysics and diamond drilling on several discrete aeromagnetic targets.

## 2. LOCATION

The Rover Project is located approximately 100km west-southwest of the Tennant Creek township and consists of a number of granted tenements and applications within aboriginal freehold lands of the Karlantijpa South Land Trust and the Karlantijpa North Land Trust.

Access to the project is via the Stuart Highway 6 km south of Tennant Creek, then west along the Ngapamilarnu Outstation gravel road for approximately 100 kilometres. Access within the project area is via local exploration tracks which have been upgraded from previous exploration tracks. No access tracks occur within the most westerly tenement, EL8823.

Exploration by Castile for the Rover project is based from the temporary exploration camp at Rover 1.

The company has re-established the water bore, plumbing, and tracks associated with the old AOM camp at Rover 1. Additional caravans, temporary accommodation, cooking facilities, fuel storage, communications and core handling requirements have been mobilised to the site from the previous camp at Ngapamilarnu Outstation.

## 3. TENURE

In November 2008 combined reporting status was granted by the Northern Territory Department of Regional Development, Primary Industries, Fisheries and Resources over six granted tenements forming a contiguous group within the Rover Project. These are ELs 8823, 8994, 24541, 24989, 25427 and 25511, which comprise the Rover Combined Reporting Area. (RCR) During the year, application for Substitute Exploration Licence 27039 was made to cover the area of ELs 8823 and 8994, which expired on 7 March 2009.

Lease	Project	Granted Blocks	Application Date	Grant Date	Expiry Date
EL8823	Rover	82	6/07/1994	8/03/1999	7/03/2009
EL8994	Rover	60	7/11/1994	8/03/1999	7/03/2009
EL24541	Rover	130	30/12/2004	18/12/2007	17/12/2013
EL24989	Rover	1	13/10/2005	7/03/2007	6/03/2013
EL25427	Rover	5	15/06/2006	10/01/2008	9/01/2014
EL25511	Rover	72	27/07/2006	18/12/2007	17/12/2013



Figure 1 – Location Plan

All of these tenements are owned 100% by Castile Resources Pty Ltd (Castile), a wholly owned subsidiary of Westgold Resources Limited. ELs 8823, 8994, 24541 and 245511 were purchased from AngloGold Ashanti Australia Limited (AngloGold) in late 2005 by Navarre Resources Pty Ltd and subsequently transferred to Castile. AngloGold retains an option to joint venture, whereby it may elect to earn-back up to 75% equity in a significant discovery on these four tenements.

Castile has been granted permission to explore and potentially mine any economic minerals discovered upon ELs 8823 and 8994 under the provisions of the Babylon Agreement, an agreement between Castile and the Central Land Council as the representative body for the traditional aboriginal communities who own the lands. This agreement is in the process of being transferred to SEL27039. Castile has recently negotiated two Exploration Deeds with the local traditional owners through the CLC, for ELs 24989 & 24541, and for ELs 25427 & 25511.

## 4. GEOLOGY

#### 4.1 Regional Geology

The Rover Project is underlain by the Rover Field, which covers part of the poorly exposed southern margin of the Proterozoic Tennant Creek Block of the central Tennant Creek Inlier in the Northern Territory. The regional geological setting of the tenements is interpreted from rare outcrop, limited drill testing, geophysical surveys and extrapolation from the relatively well-exposed portions of the block to the north.

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 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 Proterozoic 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.

Known outcrop of the 1860-1850Ma <u>Warramunga Province</u> 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 eastwest-oriented, 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 <u>Tomkinson Creek Province</u> (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 <u>Davenport Province</u> (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 Creek Supersuite 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.

#### 4.2 Local Geology

The RCR area is entirely covered by Recent sediments. These blanket extensive flat-lying Cambrian siltstones, dolomitic siltstones and dolomites of the Wiso Basin, which unconformably overlie the Proterozoic basement. Cover to the Proterozoic basement has a westward thickening trend from less than 70m in the east to in excess of 200 metres in the west. Outcrops of the Woodenjerrie Beds, the Junalki Formation, the Ooradidgee Group and the Hatches Creek Group, with minor granite and porphyry have been mapped about 20 kms east of EL25511. Warramunga Formation rocks do not outcrop in the region, and the NTGS regional geological interpretation does not recognise the presence of Warramunga Formation within the Rover Field. However, exploration geologists correlate meta-sedimentary rocks from drill core at Explorer 142 and the nearby Rover 1 prospect to characteristic Warramunga Formation sequences that host the numerous copper gold deposits in the The magnetic signature of the area is also more similar to the Tennant Creek area. response seen from the Warramunga Formation around Tennant Creek. Detailed aeromagnetic data strongly suggests that the Warramunga Formation sedimentary sequence extends beyond the known drilled prospects to cover an area of well in excess of 1000km<sup>2</sup> and most likely represents a fold or thrust belt repeat of the Warramunga Formation of the Tennant Creek region.

In addition, the metallogenic model that applies to the Tennant Creek Field appears to apply well to the Rover Field. The presence of abundant ironstone and extensive alteration and associated Cu-Au mineralisation provides added indirect evidence that the host rocks of the Rover Field correlate with the Warramunga Formation of the Tennant Creek region.



To the south of the tenement group, magnetic response indicates that rocks of the Hatches Creek Group underlie Phanerozoic cover.

Figure 2: Regional Geological Setting, Combined Reporting Group, Rover Field, NT 1:2,000,000 (After Ahmad et al 2004) (see Ahmad et al for legend)

#### 4.3 Exploration History

The four 250,000 sheets on which the project lies were mapped by NTGS between 1978 and 1999. None of the four 100,000 map sheets has been geologically mapped.

The BMR flew aeromagnetics over the region in 1956 and 1960, which was used for early exploration. More recent surveys include the 2000 Wiso Survey, (covers the Green Swamp Well 1:250,000 map sheet area) the 1998 Tennant Survey, (covers the Tennant Creek 1:250,000 map sheet) and the 1999 Bonney Well Survey. (covers the Bonney Well, and part of the Lander River 1:250,000 map sheets)

The Tennant Creek Region gravity survey, at station spacings of between 200 and 12,000m, was completed in 2001, covering parts of the Tennant Creek and Bonney Well 1:250,000 map sheets.

Exploration in the Rover Field was carried out between 1971 and 1982, but was halted in 1982 when land ownership reverted back to the local traditional aboriginal owners. It was not until December 2007 that Westgold successfully negotiated access to continue exploration at Rover 1 and surrounding tenement areas, paving the way for exploration to begin at Rover 1 for the first time in over 25 years.

A total of only 12 prior tenements had been held over the area of Castile's present combined reporting tenements. These were:

- <u>AP2451</u> Covered: EL24989; a thin strip on N boundary of EL25427; SW cnr EL25511.
- AP2653 Covered N and E sections of EL25511
- EL228 Pegged to replace AP2451
- EL436 Covered E half of EL24541
- EL543 Covered E section of EL25511
- EL703 Covered central block of EL24541
- EL813 Covered E half of EL8994 and NW block of EL24541
- EL954 Same area as EL436
- EL981 Covered E part of EL8823 and W half of EL8994
- EL983 Covered all of EL8823
- EL1286 Covered E part of EL8823 and all of EL8994
- EL1849 Same area as EL228
- <u>AP2653</u> Bridge Oil held this tenement in 1971, and flew aeromagnetics at 1/5 mile spacing, locating 4 anomalies. (3 in EL25511 in the RCR) Modelling suggested that the anomaly sources were deep-seated, and the ground was relinquished.
- <u>EL543</u> This covered areas explored under previous tenure in 1965-1970. The BMR aeromagnetic surveys of 1956 and 1960 had located the Explorer 15 anomaly (not in the RCR), and auger, percussion and diamond drilling has intersected a pipe-like gabbroic intrusion beneath 15m of Cambrian sediments. In 1972/3 Geopeko carried out low-level aeromagnetics over previous AtoP's 2654 and 3387, and located an additional 3 prospects, Explorers 81, 94 and 95. Explorers 94 and 95 are in the RCR, and probably coincide with anomalies 2 and 1 located by Bridge Oil. They carried out ground magnetics and completed 1 gravity profile over Explorer 94, but did not consider the targets worthy of follow-up.



Figure 3: Historical Tenement Locations. 1:500,000

## <u>AP2451;</u> <u>EL228;</u> <u>EL1849</u>

In 1971 this area was held by AOM who completed airborne magnetics, locating the Rover 1 – Rover 7 anomalies. Rover1 is within EL24989, and Rovers 5 and 7 are within EL25427. AP2451 was converted to EL228 in 1972, and then to EL1849 from 1979 - 1983. A large amount of the work completed was in areas outside Castile's RCR.

In 1973 Rovers 1, 2 and 4 were gridded and covered with detailed ground magnetics, and 1 diamond drill hole was completed on Rover 1. This intersected 124m of Cambrian sediments overlying cleaved sandstone, hematitic shale and pink-red cherts. Abundant chlorite and quartz-chlorite veining with disseminated pyrite-chalcopyrite. Between 1974 and 1977 further diamond drilling intersected high grade copper and gold mineralisation associated with strongly altered (qtz-jasper-hem-mag) lode material. The high-grade copper zone was seen to be distinct from the high-grade gold zone. A total of 14 diamond holes were completed at Rover1, which located 3 separate ironstone bodies. Mining leases were pegged over the prospect areas to retain them. Rovers 5 and 7 were defined by ground magnetics and gravity. One diamond drill hole was completed at Rover 5, but the hole deviated, and did not intersect the planned target.

#### EL436; EL954

Sabra Pty Ltd held EL436 in 1972, and carried out mapping and airborne magnetic interpretation. From 1974 to 1976 the area was held under EL954 by Geopeko, who completed low level aeromagnetics. This defined 12 anomalies, 1 of which was in EL24541. (Explorer 126) Definition of Explorer 126 by ground magnetics was followed by the drilling of 1 diamond hole into

the prospect. This located Warramunga Group sediments beneath 190m of Cambrian cover, but intersected no mineralisation. However, the hole deviated excessively, and it is doubtful that it tested the magnetic anomaly.

<u>EL703</u> AOM held EL703 from 1973 to 1977, being under joint venture with Geopeko from 1975. They completed aeromagnetics, which defined 9 anomalies. Two of the anomalies, Navigator 12 and 14 were defined by ground magnetics and each was followed up with a single diamond drill hole. In both cases the magnetic anomalies were explained by disseminated magnetite in porphyry.

# EL813; EL981; EL983; EL1286

The western half of Castile's RCR was explored by Geopeko under 4 tenements. These covered all of EL8823 and EL8994, and the western 2 blocks of EL24541. Initial work was on EL813 in 1973, consisting of an aeromagnetic survey. This located Explorer 111, which was judged to be too deep to be of economic interest, and the ground was dropped. From 1974 to 1976 the ground to the west of EL813 was covered by EL981 and 983, where aeromagnetic surveys in 1974 located the Explorer 143, 144, 145 and 146 anomalies. Of these, only Explorer 143 is within the RCR, in the area now covered by EL24541. Ground magnetics were completed over Explorer 143, and a detailed aeromagnetic survey was flown over the area surrounding it. This located the prominent magnetic ridge trending NW through the SW boundary of EL24541. Modelling did not define any discrete anomalies worthy of follow-up work.

EL1286 was held by Geopeko from 1979 to 1982. It covered all of the area now covered by EL8994, and the eastern portion of EL8823. Geopeko completed ground magnetic and gravity surveys over Explorers 108, 111, 120 and 142, and drilled diamond holes into each. Explorer 111 was found to be caused by disseminated magnetite in Warramunga Formation volcanics and siltstones. Explorer 120 was tested with 2 holes, and found to be caused by minor mineralisation in magnetite-bearing sediments.

Six diamond holes were completed into Explorer 108, locating lead-zinc mineralisation in dolomitised sediments.

The first diamond hole completed on the 1 km-long Explorer 142 anomaly intersected magnetite-hematite alteration within siltstones, argillites and porphyroid of the Warramunga Formation. Copper-cobalt-(gold) mineralisation was intersected over the interval 427-454m which assayed 27m @ 1.22% Cu, including 11m @ 2.37% Cu. Copper values ranged up to 8.8% over a single metre, with cobalt up to 1.9%. Gold values were elevated, with a maximum of 1.3 g/t Au. This was followed up by detailed ground magnetic and gravity surveys. Magnetic interpretation suggested that the anomaly was caused by a steeply-dipping dyke-like body whose top lies about 300m below surface. Interpretation of the gravity suggested that the top of the body was at 200m depth. An additional 5 diamond drill holes were completed into the anomaly, with 1 hole per section on c.100m-spaced sections. All holes were routinely measured for magnetic susceptibility and SG, and logged for resistivity and SP. Two holes, 100m apart along-strike, intersected reasonably strong copper-cobalt-gold mineralisation. None of the other 4 holes was drilled between these two. Three intersected minor mineralisation, and 1 intersected no mineralisation. Four holes, including the 2 mineralised holes, were surveyed for 3-component down-hole magnetics, which indicated that the 2 holes containing minor or no mineralisation did not intersect the anomaly source.

#### EL8823; EL8994

These two tenements were granted to Normandy Exploration Pty Ltd in March 1999, following the signing of the Babylon Agreement which allowed access onto the Aboriginal Lands. In 1998 they had conducted a review of historical assay from drilling in the areas of EL8994. A total of 700 preserved coarse rejects and pulps from drilling at Explorer 108 and 142 were re-assayed for gold, silver, arsenic, bismuth, cobalt, copper, iron, lead and zinc. Results showed that the previous assayed results were of a variable quality and should only be used for semi-quantitative interpretation. There was a high level of confidence found in the accuracy of high grade base metals intersections but low confidence in the accuracy of gold intersections (Clifford, 1998).

During 1999 Newmont flew aeromagnetics at variable 100m to 200m line spacing and a mean terrain clearance of 40m, and low-level colour aerial photography at 1:25,000 over the tenements. In the ensuing 5 years, access difficulties due to sensitive Aboriginal sites, coupled with the internal restructuring of Normandy and the take-over by Newmont precluded any work on the ground.

Until 2005, the tenement was held within the Desertex Joint Venture, a joint venture between AngloGold Ashanti Australia Limited and Newmont Mining. In early 2005, Newmont withdrew from the Desertex JV leaving AngloGold with 100% equity. AngloGold subsequently decided to divest the project and Navarre Resources acquired the projects in late 2005.

During early 2006, Navarre successfully completed a helicopter supported heritage clearance of proposed work programmes through the Central Land Council in accordance with the requirements of the exploration agreement.

Between early 2006 and the end of 2007 Navarre/Castile/Westgold completed a regional gravity survey (500x1000m spacing) over EL8994 and the eastern portions of EL8823. This was in-filled to 50x400m and 50x200m spacings over the Explorer 108, 120 and 142 anomalies, and to 25x200 spacing in selected areas. This survey suffered very slow production rates caused by poor vehicle access and related issues.

In 2006, Navarre commenced diamond drilling at Explorer 108 and completed 8 holes for 3378.8m, which intersected a number of significant lead, zinc, silver, copper and gold zones in the basement rocks. A further 3 diamond drill holes for 1900.3m were completed at the Explorer 142 copper gold prospect, intersecting up to 10m @ 2.98% Cu with elevated gold, bismuth and cobalt. An orientation surface IP survey was conducted over Explorer 108 without success.

In 2007 trial downhole EM and 3-component magnetic surveys were run in selected holes from Explorer 108 and 142. These both had problems with access into holes, and the EM surveys were abandoned early into the program.

At Explorer 108 a total of 41 RC/DDH holes were drilled for 16,304m in 2007, and a preliminary inferred resource of 8.7 Mt at 5.6% combined Pb & Zn, 20g/t Ag, 0.3g/t Au was estimated, using a lower cut-off grade of 2.5% combined Pb+Zn. The resource remains open in several directions and contains a higher grade component of 4.0 Mt at 8.2% combined Pb & Zn, 25g/t Ag, 0.3g/t Au using a 5% combined Pb+Zn cut-off.

<u>EL24989</u> This tenement covers a very small window of vacant crown land over the Rover 1 prospect. It was granted to Castile Resources on 7 March 2007. During 2007 an ultra-detailed gravity survey with station spacing of 25x50m was completed over the tenement. The survey was integrated with a 50x200m spaced gravity survey over the NE part of EL24541. An ultra detailed ground based magnetic survey was also completed over the tenement during the period, and extended into EL24541.

#### 5. WORK COMPLETED DURING THE REPORTING PERIOD

Exploration activities completed during the reporting period include diamond drilling at Rover 1, helicopter magnetic surveys over 6 anomalous zones defined by previous broad-scale aeromagnetic surveys, gravity data acquisition, metallurgical testing of ores from Explorer 108 and Rover 1, and petrological/petrographic examination of ore samples from Rover 1.

#### 5.1 <u>Heritage Clearance Surveys</u>

Under the three Deeds of Exploration cover the RCR, a number of clearance surveys were undertaken in advance of drilling activities over various prospect areas to protect any sensitive aboriginal heritage aspects.

#### 5.2 Helimag Surveys

The previously located aeromagnetic anomalies at Rover 5 and 7, the Navigator 12 - 17 area, Explorer 94, Explorer 95, Explorer 142, and Explorer 143 were re-flown with detailed helicopter-borne magnetic surveys between 28 October and 13 November 2008.

The survey was flown by Tensor Geophysical Services Pty Ltd at 30m mean terrain clearance, for a total of 3,136.1 line kilometres in 427 lines. Flight lines were oriented north-south for areas A, C, and D, and east-west for areas B, E and F.

The survey utilised a Geometrics G822A split-beam cesium vapour magnetometer. Navigation was effected by differential GPS (Geosolutions Pilot Guidance) using a Novatel single frequency GPS receiver with heights from a Bushnell Laser Ranger. Sample interval along lines was approximately 1.5m.

The magnetic data will allow more detailed modelling of the anomalies, and lead to the accurate definition of drill targets. Data manipulation and anomaly modelling is presently in progress.

Figure 3 shows the areas flown by the 2008 helimag survey. Data over the Rover 1 area is derived from a helimag survey completed by Adelaide Resources.

Data from the magnetic surveys is included as digital files in **Appendix 5** on the CD accompanying this report.



Figure 4: Locations of Detailed Magnetic Surveys 2008.

# 5.3 Gravity Surveys

Ground gravity surveys were continued during the year, and total coverage of the 6 tenements comprising the RCR has now been completed. Gravity station coverage is shown in the following map.



Figure 5: Locations of Ground Gravity Surveys 2006 - 2008.

The gravity work was completed by Atlas Geophysics Pty Ltd of Perth between 17 March and 25 April 2008. A total of 2,954 stations were read on EL8894 (348 stns) EL25511 (834 stns) and EL24541 (1,772 stns). The survey utilised a Scintrex CG5 fully-automatic digital gravity metre, with heights being recorded to centimetre accuracy using 3 Leica Geosystems dual frequency GPS1200 units. (1 stationary base, and 2 kinematic roving mobiles) The equipment was mounted on quad-bikes for speed of access.

Readings were initially taken on 1000x500m spacings, with infill to 500x500m and 500x250m spacing in areas of interest. A report on the gravity survey by Atlas Geophysics Pty Ltd is included as **Appendix 2** on the CD accompanying this report.

## 5.4 Diamond Drilling

Between 1973 and 1977 fourteen diamond holes had been completed at Rover1, locating 3 interpreted ironstone bodies. Drilling intersected high grade copper and gold mineralisation associated with strongly altered (qtz-jasper-hem-mag) lode material. The high-grade copper zone was seen to be distinct from the high-grade gold zone.

Drilling during the 2008 reporting year for the Rover project concentrated on defining the mineralised system at the Rover 1 anomaly.

Eleven parent holes were drilled on 6 sections on nominal 40m spacing. Twenty "daughter" holes were wedged off the parent holes. A total of 674.6m of pre-collar was completed in the parent holes by rotary mud methods. Drilling was carried our by Australian Contract Mining (ACM) using a LF90 drill rig. Holes were then cored with HQ, reducing to NQ if the conditions demanded. Totals of 2,203.1m of HQ coring and 7,262m of NQ coring were completed.

#### 5.5 <u>Sampling</u>

Mineralised core was halved with a diamond core saw on site, and one-metre samples were sent to ALS laboratories in Perth where they were dried, crushed, pulverised and homogenised, and assayed for Ag, As, Bi, Co, Cu, Fe, Mo, Pb, S, Sb, U and Zn by 4-acid digest followed by ICP-AES finish, and for Au by 30gm fire assay with AAS finish. Gold assays greater than 10 g/t Au were repeat-assayed by screen fire assay. In the case of hole WGR1D004, and for re-sampling of core from 110 - 143.8m in WGR1D001 for phosphate analyses, quarter-core was cut for assay. A total of 6,476 samples were assayed.

Digital files for the drilling stored as **Appendix 6** on the CD accompanying this report are as follows:

Collar Files:	ROV_WASL3_COLL_2009.txt
Survey Files:	ROV_WADS3_DHSURV_2009.txt
Assay Files:	ROV_WADG3_DHASS_2009.txt
Lithology Files:	ROV_WADL3_GEOL_2009.txt
Alteration Files:	ROV_WADL3_ALT_2009.txt
Vein Data Files:	ROV_WADL3_VEIN_2009.txt
Structure Files:	ROV_WADL3_STRUC_2009.txt

Drilling intersected high-grade Cu-Au mineralisation over down-hole widths of up to 65m showing that the Rover 1 system contains a significant body of mineralisation open in all directions. Significant intersections include:

 WGR1D002
 65.75m @ 11.0g/t Au, 0.75% Cu, 0.09% Co, 0.15% Bi and 2.5g/t Ag from

 492m
 WGR1D002-01
 66m @ 4.26g/t Au, 0.56% Cu, 0.08% Co, 0.20% Bi and 2.1g/t Ag from 489m

WGR1D002-02	49m @ 5.8g/t Au, 1.05% Cu, 0.10% Co 0.42% Bi and 0.9g/t Ag from 477m
WGR1D002-5	77m @ 13.75g/t Au, 0.44% Cu, 0.04% Co 0.12% Bi and 2.4g/t Ag from
496m	
WGR1D003	32m @ 20.8g/t Au from 467m
WGR1D003-1	44m @ 2.05g/t Au, 1.29% Cu, 0.09% Co, 0.50% Bi and 2.6g/t Ag from 432m
WGR1D006-2	49m @ 4.02g/t Au, 0.60% Cu, 0.05% Co, 0.16% Bi and 3.9g/t Ag from 527m
WGR1D009	50m @ 0.47g/t Au, 1.46% Cu, 0.16% Co, 0.23% Bi and 0.6g/t Ag from 426m
WGR1D011	22m @ 0.86g/t Au, 6.57% Cu, 0.55% Co, 0.58% Bi and 4.6g/t Ag from 469m

Higher-grade gold zones lie within the above intersections, within a broader zone of coppercobalt dominant mineralisation. This broader zone also includes narrower zones of high grade mineralisation. (eg. 4m @ 15.13 g/t Au and 1.68% Cu from 586m in WGR1006-1).

273 samples of half-core were selected from intercepts of the Cambrian cover sequence in holes WGR1D001 and NR108D016 for analysis for phosphate. WGR1D001 intersected 20m @ 1.2%  $P_2O_5$  from 55m, and 12m @ 1.9%  $P_2O_5$  from 96m. NR108D016 contained 22m @ 0.7%  $P_2O_5$  from 146m. This low grade phosphate mineralisation provides support to the concept that the Cambrian Wiso Basin sediments may be prospective for phosphate mineralisation, although, to date, intersections within the RCR are clearly low grade and subeconomic.

#### 5.6 <u>Metallurgy</u>

Metallurgical testing was carried out on ore samples from Explorer 108 and Rover1.

Four sets of base metal core intersections from Explorer 108 were sent to the Burnie Research Laboratory in Tasmania for preliminary metallurgical testing. These were sections from holes NR108D001, D007, D020 and D022. Testing on composites, which assayed between 1.3-5.1% Pb, 3.1-8.9% Zn and 7.0-13.0% MgO, included assay analysis, sized mineralogical assessment and basic flotation routines for lead and zinc recovery.

The core intersections received were found to contain a simple base metal suite consisting of galena, sphalerite and minor pyrite and chalcopyrite. Non sulphides included talc, quartz, magnetite and haematite. Sphalerite and galena liberate at relative coarse size with 50% liberation seen at 90 and 65 microns respectively. Associations between galena and sphalerite are moderate but persistent to fine size.

Flotation testing indicated that relatively simple separations can be made using conventional reagents, yielding high grade lead and zinc concentrates. Floats were performed at grind sizes between 60 and 90 microns.

Lead flotation responds well to a conventional flotation reagent suite with 60-65% recovery to a 65% lead concentrate, although concentrate cleaning is impeded by fine galena/sphalerite composites. In these tests lead concentrates contain up to 11% zinc. Further testing will be required to assess options for lowering zinc levels in lead concentrate.

Zinc flotation performance was excellent with >55% Zn concentrates obtained at 80-88% recovery. Concentrates contain moderate silica levels (2-3%, probably as talc) which will require further testing to define rejection routines. Gold, silver and copper values are also recovered into the zinc concentrate.

A copy of the metallurgical report is included as a digital file **Appendix 3** on the CD accompanying this report.

Twenty nine one-metre samples of quartered drill core were selected from Rover 1 ore intercepts for cyanidation and flotation tests. This work is still in progress and results, if finalised, will be reported in the next reporting period.

#### 5.7 Petrography and Mineralogy

Twenty-eight core samples were selected from five drillholes intersecting the Tennant Creek style Au-Bi-Cu mineralisation at Rover 1, and submitted to Pontifex & Associates Pty Ltd for polished thin section descriptions. A total of 101 photomicrographs were integrated with the individual descriptions.

Many of the thin sections consist of host rock sediments/altered sediments, together with minor to abundant vein/hydrothermal mineralisation as follows:

- 1. Quartz-hematite, and chlorite-hematite-magnetite, recrystallised BIF: P001, P002 and P003, with authigenic quartz in P002 and P003.
- 2. Sericitic slate: P018 with quartz veinlets
- 3. Siltstone and chert/jaspilite ± sericite ± pyrite: P007, P019, P022, P025 and P028 (breccia)
- 4. Sandstone/tuff and siltstone: P012, P013
- 5. Variously quartz-chlorite ± hematite and quartz-hematite ± chlorite-altered probable sediment, partly as fragments: P006, P010, P014, P016, P017, and P024.

Other samples are dominated by hydrothermal mineralisation, particularly widespread massive magnetite including secondary magnetite which pseudomorphically replaces earlier platy hematite, with relict rosette textures. Commonly, massive magnetite is cut by extensional and/or shear-related fractures which have been permeated by later chlorite  $\pm$  sulphides  $\pm$  gold.

Hematite is mostly post-magnetite, vein-form and interstitial within breccia matrix. Some hematite is euhedral against sulphides and gold, suggesting late hematite. Chalcopyrite, minor to locally abundant bismuthinite and numerous occurrences of gold seem to be coeval, and these minerals seem to be later than minor very fine molybdenite in P012, P013 and P016, which has been sheared and recrystallised. A relatively late generation of pyrite is fine-grained and largely euhedral against chalcopyrite, bismuthinite and gold.

Various periods of vein-quartz ± hematite ± carbonate ± chlorite are evident, with deformed quartz in some veins, variously granular, columnar and granular to prismatic quartz in other veins. Carbonate occurs in numerous samples, but is not clearly related to gold except in P005, with gold in chalcopyrite-hematite veins ± carbonate, and P016, with abundant gold in carbonate-chlorite-bismuthinite-magnetite-chalcopyrite lenses or boudins. Inclusions of native bismuth were identified by SEM in chalcopyrite and bismuthinite in sample P028. A uranium > Fe-rich mineral with minor S, Ca, Cu, Y was identified by SEM in chlorite, with associated bismuthinite, chalcopyrite and gold in sample P016.

Chlorite is widespread, as matrix to laminated hematite and magnetite in BIF, also as alteration within altered sediments with fine quartz, hematite, pyrite and rare chalcopyrite. Veined and metasomatic areas contain schistose and decussate chlorite, including pressure shadow-like chlorite with disaggregated magnetite  $\pm$  hematite and interstitial to pyrite  $\pm$  magnetite  $\pm$  hematite.

A copy of the Pontifex report is included as a digital file **Appendix 4** on the CD accompanying this report.

# 6. ENVIRONMENTAL / REHABILITATION REPORT

Limited environmental rehabilitation has occurred during the reporting period as the drilling programmes are on going. Many drill sumps have been back filled where the hole is considered finalised. The holes are temporarily capped to allow re-entry for various purposes including trial geophysics.

Final rehabilitation is planned in accordance with statutory obligations.

The Company is currently setting up a routine monitoring process of photographic stations at each drilled prospect to allow an annual review of rehabilitation effectiveness. This monitoring process is currently being established and will be reported in the next period.

Additionally the local traditional landowners have request no tracks or drill pads be fully rehabilitated without discussion. This is to allow aboriginal access into areas of interest. The Company will continue this discussion on an on-going basis with the CLC and traditional landowners.

# 7. CONCLUSION AND RECOMMENDATIONS

Exploration work over the Rover Combined Reporting Area for the year ending 7 March 2009 has further enhanced the prospectivity of the project.

Diamond drilling at the Rover 1 prospect has confirmed the presence of a major mineralised system identical to the Cu-Au ore deposits of the Tennant Creek field. High grade gold and copper intersections over considerable widths are reminiscent of the Warrego deposit, and Castile Resources is confident that additional drill testing will lead to the definition of a resource at Rover 1.

Preliminary metallurgical testing of the Pb-Zn ores from Explorer 108 have demonstrated that the ore is readily treatable by conventional methods, and that mineral concentrates are easily won.

Previous drilling from the Explorer 142 anomaly intersected strong Cu-Au-Co mineralisation in ironstone, similar to the Rover 1 and Tennant Creek styles of mineralisation, and this is a priority target for future work.

Detailed magnetic and gravity surveys completed over the Rover Project will now allow accurate targeting of new anomalies for further drill testing. Numerous coincident magnetic and gravity anomalies offer wide scope for the location of additional mineralised zones in the Rover Field.

The proposed 2009 programme is planned to include:

- Detailed diamond drilling for extensions to mineralisation at Rover 1. (EL24541 and EL24989)
- Trial downhole geophysics at Rover 1
- Reconnaissance diamond drill testing of topmost ranked magnetic and gravity targets in EL24541 and EL25511.
- Diamond drilling at Explorer 142 (subject to grant of SEL27039)

	Total proposed programme (minimum)	<u>\$2,535,000</u>
•	Track Establishment subject to approval	5,000
•	Reconnaissance diamond drilling of various regional magnetic and gravity targets	600,000
•	Metallurgical Testwork on Rover 1 ores	30,000
	Extensional Drilling at Explorer 142	400,000
•	Extensional diamond drilling at Rover 1	1,500,000

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# **BIBLIOGRAPHIC DATA SHEET**

Report Number:	R2009-006
Report Name:	Combined Annual Report EL8823, EL8994, EL24541, EL24989, EL25427, and EL25511 Rover Project for the period 8 March 2008 to 7 March 2009
Prospect Names:	Gypsy, Explorer's 111, 120, 108 & 142, Rover1.
Tenement Number:	EL8823, EL8994, EL24541, EL24989, EL25427, and EL25511.
Owner/JV Partners:	Castile Resources Pty Ltd
Agreements: Desertex Babylon Agreement; Deed of Exploration (EL's 24989), Deed of Exploration (EL's 25427 & 25511)	
Commodities:	Gold, Base Metals
Tectonic Units:	Tennant Creek Inlier, Wiso Basin, Rover Field
Stratigraphic Units:	Warramunga Group, Flynn Sub-Group, Wiso Basin Succession
1:250,000 Map Sheet:	Green Swamp Well SE53-13; Tennant Creek SE53-14; Lander River SF53-01; Bonney Well SF53-02.
1:100,000 Map Sheet:	Billiatt 5558; Kelly 5658; Hanson 5557; Chaluba 5657.
Keywords:	Exploration, Diamond Drilling, Gravity Survey, Geophysics, Assay, Copper, Gold, Lead, Zinc

Gravity Survey Data and Reports (contained on CD)

Metallurgical Report Explorer 108 Mineralisation

Burnie Research Laboratory

Mineralogical Report Rover 1 Mineralisation

Pontifex & Associates Pty Ltd

Heli-mag Survey Data and Reports

# Drilling Data