



## **Yandan EPM8257**

### **Partial Relinquishment Report**

**1st September 2007**

<b>Project Name:</b>	Yandan
<b>Report Type:</b>	Relinquishment Report
<b>Tenement:</b>	EPM8257
<b>Holder(s):</b>	Straits Gold Pty Ltd
<b>Operator:</b>	Straits Gold Pty Ltd
<b>Commodities:</b>	Gold, Copper
<b>Geographic Location:</b>	Mount Coolon – nearest town
<b>1:250 000 SHEET:</b>	Buchanan (SF55-06), Mount Coolon (SF55-07)
<b>1:100 000 SHEET:</b>	Bulliwallah (8254), Scartwater (8255), Mount Coolon (8355)

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**Distribution:** Queensland Department of Mines and Energy  
Straits Gold Pty Ltd – Perth

## **SUMMARY**

Straits Gold Pty Ltd relinquished 63 sub-blocks of EPM8257 Yandan on 1 September 2007. The relinquished sub-blocks cover Middle Devonian to Early Carboniferous volcanic and sedimentary rocks of the western Drummond Basin and Anakie Inlier metasedimentary and intermediate intrusives basement to the Drummond Basin.

Exploration within the relinquished sub-blocks consisted of regional scale structural interpretations, ASTER interpretation, regional geological mapping and rock sampling, minor stream sediment sampling infill and grid and line soil sampling. Detailed geological mapping and rock sampling occurred at the Rosetta Prospect. The only significant results was gold geochemistry at the historic XXX Prospect, up to 1.6g/t Au.

Regional structural interpretations, geological mapping and geochemical sampling during the tenure of EPM8257 and historical tenure show the relinquished sub-blocks have low prospectivity for economic mineral deposits, both absolutely and relative to prospects retained in EPM8257.

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## **1.0 INTRODUCTION**

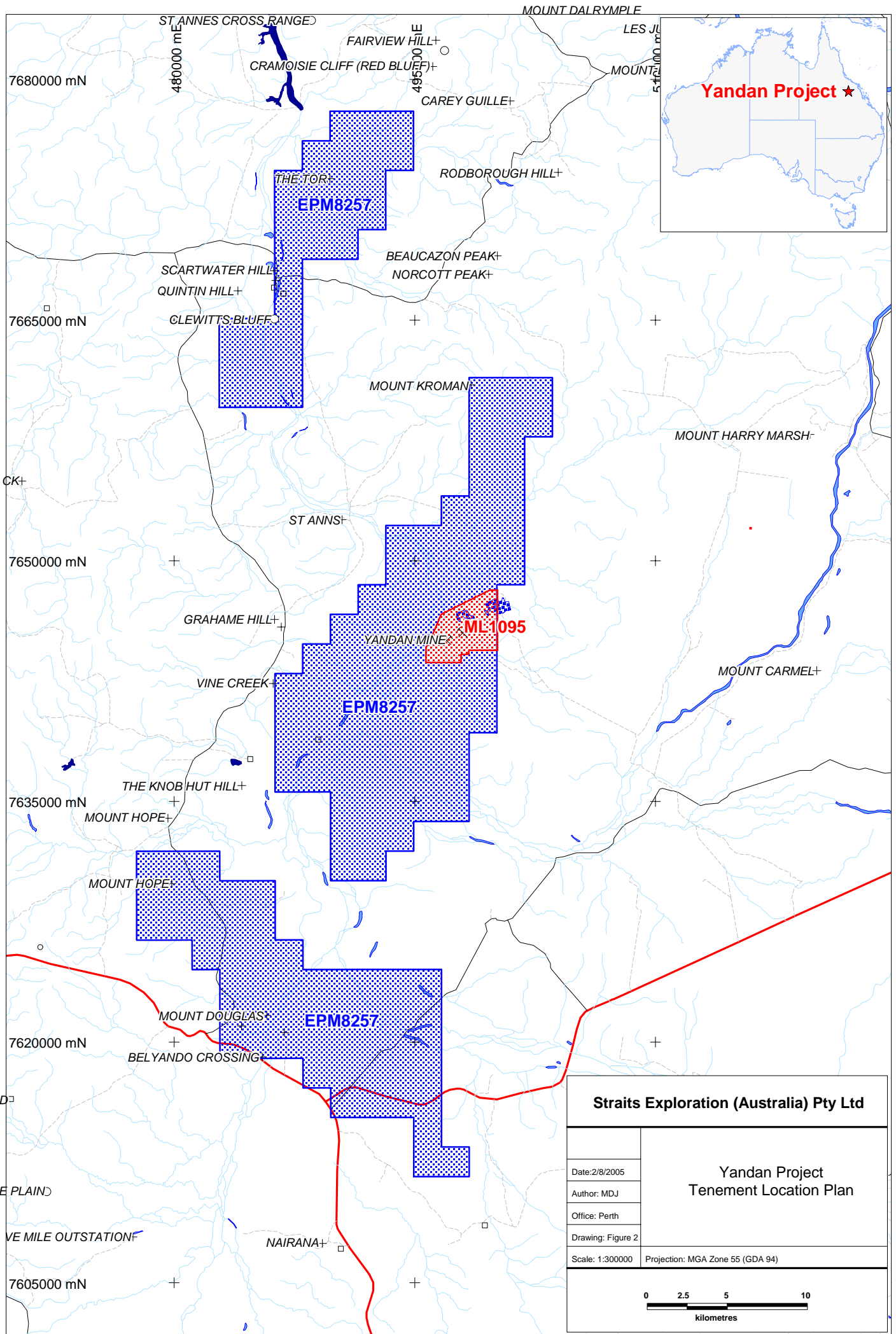
This report covers mineral exploration activities on sub-blocks of EPM8257 relinquished by Straits Gold Pty Ltd on 1 September 2007. The period covered is the tenure of EPM8257 from 2 September 1991 to 1 September 2007. During this period several registered holders and/or joint venture manager operators have conducted exploration on EPM8257.

## **2.0 LOCATION AND ACCESS**

Yandan EPM 8257 is centred at 21° 20' south, 146° 57' east, within the Charters Towers, Bowen and Clermont mining districts, and is approximately 516 km<sup>2</sup> in area. The tenement is approximately 50 km to the west of the township of Mount Coolon and 150km southeast of Charters Towers, north Queensland. The tenement covers parts of the Bulliwallah, Scartwater, and Mount Coolon 1:100,000 sheets (8254, 8255 and 8355) and the Buchanan (SF55-06) and Mount Coolon (SF55-07) 1:250,000 sheets. See Figure 1 for location plan.

Topography varies from predominantly flat soil covered plains of low relief covered by light timber and grassland, to moderately vegetated hills in the northern and central southern portions of the tenement. Land use is predominantly cattle grazing on native and improved pastures. Station properties within the confines of the EPM include Rosetta Park, Illamahta, Scartwater, St Anns, Llnarth, Vine Creek and Mt Hope.

The main drainage systems on the permit are Camp, Boundary, Rosetta and Scartwater creeks, which drain west and south into the Suttor River. The Belyando River flows into the Suttor River within the southern portion of the tenement.



### **3.0 TENURE**

Yandan EPM8257 was granted to Western Mining Corporation Ltd (WMC) on 2 September 1991 as an amalgamation of nine adjoining tenements (EPMs 4031, 4109, 4408, 4736, 4755, 5445, 6011, 7400 and 7952) for an initial two years covering 324 sub-blocks. In July 1992, Ross Mining NL purchased WMC's interest in EPM 8257 as part of their acquisition of the Yandan Gold Project and associated assets.

The tenement was renewed annually by Ross Mining; in 1993 covering 319 sub-blocks, in 1994 and 1995 covering 285 sub-blocks, in 1996 covering 263 sub-blocks, and in 1997, 1998 and 1999 covering 165 sub-blocks. In May 2000, following a successful takeover bid, Ross Mining became a wholly owned subsidiary of Delta Gold Ltd, and then Aurion Gold Ltd from January 2002. The tenement was held by wholly owned subsidiary Wirralie Mines Pty Ltd. In August 2003, Ashburton Minerals Ltd completed formal purchase of Wirralie Mines. Sometime from 2001 to 2003 2 sub-blocks were relinquished.

On 26 February 2004, Straits Exploration (Australia) Pty Ltd entered into an Option and Joint Venture Agreement with Wirralie Mines with respect to EPM8257 and ML1095 (ML1095 falls within EPM8257). Ashburton Minerals Ltd decided to sell Wirralie Mines Pty Ltd in October 2005, and Straits Exploration exercised its pre-emptive right as part of the Joint Venture to purchase the Yandan tenements (EPM8257, ML1095 and ML1096). The transfer of the exploration licence to Straits Exploration (Australia) Pty Ltd was effective from 3 May 2006.

As part of a corporate reconstruction within the Straits group, it was decided to transfer the tenement from Straits Exploration (Australia) Pty Ltd to Straits Gold Pty Ltd. Application for assignment of the tenement was submitted to the Department of Natural Resources, Mines and Water on 14 June 2006. The approval of this transfer was granted on 26 September 2006.

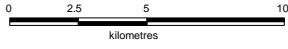
EPM8257 was renewed for two years on 2 September 2007 for 100 sub-blocks (63 sub-blocks relinquished). Details of current tenure and relinquished area are presented in Table 1 and shown in Figure 2.

Table 1: EPM 8257 Relinquished Block Identification

BIM	BLOCK	Sub-blocks
Cler	900	F L
Cler	971	N
Cler	973	V W
Cler	1044	K P W
Cler	1045	B
Cler	1115	X
Cler	1116	B P Z
Cler	1117	A
Cler	1187	C H NO
Cler	1188	E J
Cler	1258	CDE K P U
Cler	1259	FG LM QRS VWXYZ
Cler	1260	VWX
Cler	1331	A CDEF JK U
Cler	1332	ABC GH LMN QRS X
Cler	1404	CD
Total		63 Sub-blocks

Table 2: EPM 8257 Retained Block Identification

BIM	BLOCK	Sub-blocks
Cler	899	E JK NOP STU XYZ
Cler	900	AB G Q
Cler	971	C H LM QRS VWX
Cler	972	Z
Cler	1044	E TU XYZ
Cler	1045	A F L Q V
Cler	1115	P TU YZ
Cler	1116	CDEFGHJKLMNO QRSTUVWXY
Cler	1187	DE JK P U Z
Cler	1188	ABCD FGHI LMNO QRST VW
Cler	1258	HJ NO
Cler	1259	E
Cler	1260	A
Cler	1331	B GH OP
Cler	1332	F
Total		100 Sub-blocks



LEGEND

- Sub-blocks to keep
- Sub-blocks to relinquish

146.8°

146.9°

147

147.1°

8 9 9 9 0 0

9 7 1 9 7 2 9 7 3

-21.2°

1 0 4 4 1 0 4 5

-21.3°

1 1 1 5 1 1 1 6 1 1 1 7

-21.4°

1 1 8 7 1 1 8 8

-21.5°

1 2 5 8 1 2 5 9 1 2 6 0

1 3 3 1 1 3 3 2

-21.6°

1 4 0 4



#### 4.0 REGIONAL GEOLOGY

The tenement is located on the eastern margin of the western arm of the Drummond Basin, proximal to the contact of the Drummond Basin with the Anakie Inlier (Figure 3). The Anakie Inlier is a north trending basement block of greenschist facies metavolcanic and metasedimentary rocks of Neoproterozoic to Lower Cambrian age (de Caritat & Braun, 1992). The Drummond Basin has developed both east and west of the Anakie Inlier, extending for 450km north-south and 100 to 150km east-west, and contains up to 7600m of Middle Devonian to Early Carboniferous sedimentary and volcanic rocks. The lowest units in the south are the Silver Hills Volcanics. The Middle Devonian Ukalunda Beds to the north could be either the basal sequence of the Drummond Basin, or part of the basement sequence. Olgers (1972) proposed a three-cycle sedimentation classification for the Drummond Basin.

Cycle 1: Middle Devonian to Lower Carboniferous volcanics and volcanoclastics. Up to 4000m of volcanoclastic sediments, including 2000m of intermediate to acid volcanics.

Cycle 2: Basin-wide fluvial sedimentation. These sediments were sourced from basement rocks, as indicated by their high mica content.

Cycle 3: Basin-wide re-emergence of volcanism during deposition of more mature fluvial and lacustrine sediments.

The volcanism associated with the latter stages of the development of the Drummond Basin is related to an igneous episode from the Middle Carboniferous to Early Permian, which involved the emplacement of a broad range of intrusions controlled largely by northwest sinistral and northeast dextral faults.

The development of the Drummond Basin has been modelled in three styles, all-relating to a continental margin setting and westward dipping subduction:

1. A foreland basin or downwarp in a compressional setting (Fenton & Jackson, 1989; Day 1976).
2. An extensional basin related to back-arc spreading (de Caritat & Braun, 1992; Johnson & Henderson, 1991).
3. A composite of these two styles (Tate et al 1992).

Development of the Drummond Basin ceased with the Kanimblan Orogeny in the Middle Carboniferous. The Bowen Basin then developed east and south of the Drummond Basin with Lower Permian extension in a back-arc spreading environment. Extension ceased in the early Upper Permian, with westward thrusting converting the Bowen Basin to a foreland basin (Murray 1990) in the Upper Permian to Middle Triassic. Middle to Upper Triassic east-west compression caused the cessation of deposition in the Bowen Basin.

Tectonically, the Anakie Inlier has been subjected to more deformation events than the overlying Drummond Basin and younger sequences. Consequently, it is distinguished by its metamorphism to

greenschist facies, complex folding and shearing. During the Upper Carboniferous and Middle Triassic, the Drummond Basin was affected by two discrete episodes of compressional deformation. This led to inversion with the development of folds, and reverse and wrench faults now seen at the surface. The most recent depositional units (Tertiary flood basalts) over the Drummond Basin sequences remain undeformed.

Epithermal-style mineralisation in the Drummond Basin has a strong structural control (typically hosted by northwest, northeast or east-west oblique-slip extensional fault systems) confined to Cycle 1 sub-aerial volcanics and sediments, with the known deposits located close to the contact with the Anakie Inlier in both the eastern and western arms of the basin. Vein-style deposits typically occur within andesitic volcanics and intercalated sediments. Hotspring-style deposits (vein, stockwork, breccia and disseminated styles) (Tate et al., 1992) typically occur in rhyolitic volcanics and intercalated sediments, commonly intruded by flow dome complexes.

Vein-style deposits, such as Pajingo (Morrison and Beams, 1998), are typically sulphide-poor with associated adularia and sericite. The veins show the classic alteration, ore mineralogy and vein texture zonation of Buchanan (1981) with high-grade shoots associated with silica-sericite-argillic alteration, multiphase vein brecciation, and distinct colloform-crustiform and moss textured quartz. The deposits are often high-grade and commonly hosted within regional extensional faults.

Hotspring-style deposits, such as Yandan and Wirralie (Morrison and Beams, 1998), are typically stockwork and disseminated in style, hosted beneath a silica capping by shallow dipping structures that commonly intersect, or are proximal, to rhyolite flow dome complexes. The grades tend to be low, relying on bulk tonnages at shallow levels for economic extraction.

## **5.0 TENEMENT GEOLOGY**

The tenement covers a portion of the western Drummond Basin including a part of its eastern contact with the western margin of the Anakie Inlier. The major stratigraphic units within the tenement comprise basement Anakie Inlier Anakie Metamorphic metasediments, which are unconformably overlain by Les Jumelles metasediments, which are unconformably overlain by/faulted against the Middle Devonian Ukalunda Beds, which in turn are unconformably overlain by/faulted against the St Anns Formation of the Middle Devonian to Early Carboniferous Drummond Basin Sequence. Western parts of the tenement have been unconformably overlain by/faulted against mainly fluvial deposits of the Scartwater Formation and Mount Hall Formation, both part of the sag-phase Cycle 2 depositional event within the Drummond Basin Sequence (Olgers, 1972). Lateritised Tertiary Suttor Formation sediments and Quaternary alluvium cover large areas of the Drummond Basin Sequence and the Anakie Inlier.

The Anakie Inlier metasediments comprise low-grade metamorphic and simply deformed phyllites and micaceous quartz sandstones of the Les Jumelles Beds which flank moderate-grade and multiply deformed Anakie Metamorphics to the east mostly outside the tenements (Withnall & Purdy, 2006). The Ukalunda Formation is limited in outcrop to the Anakie Inlier margin in the north of the tenement area.

In the tenement area, the units of the Drummond Basin Sequence have been mapped as the St Anns Formation. The St Anns Formation has been divided into four informal subdivisions – a lower, middle and upper unit and the overlying Llanarth Member (Hancock and Mason, 1992). The formation comprises a series of volcanics and volcanoclastics consisting of fine tuff, acid to intermediate flows, arkosic and tuffaceous arenites, and minor limestones. The units within the sequence are difficult to map and correlate due to the extreme variation in unit geometry, facies changes, non-depositional unconformities, abrupt provenance changes and coeval tectonism. Development of the Drummond Basin is, in part, coeval with Middle Carboniferous to Early Permian acidic to intermediate igneous intrusions throughout the region. Plutonic intrusions include granodiorite, granite, quartz-feldspar porphyry, quartz-tourmaline breccia, monzonite and diorite (Hutton et al., 1991). Hypabyssal dykes and sills include andesite, trachyandesite, rhyodacite and rhyolite porphyries.

A large portion of the tenement is covered by Tertiary and Quaternary sediments. In the south and east, the cover is dominantly Tertiary Suttor Formation comprising lateritised sandstone, mudstone, claystone, oil shale, diatomite and carbonaceous claystone (Hutton et al., 1991). Lateritisation has resulted in the Suttor Formation forming low-lying mesa plateaus and ridges along palaeo-channels with distinct "break-away" margins. Present day channels incise the Suttor Formation and contain Quaternary alluvial channels draining out to flood plains. Throughout the tenement, thin ancient and modern Quaternary alluvium covers the Drummond Basin Sequence, with depths increasing towards major drainage systems, including the Suttor River, Rosetta Creek and the Belyando River.

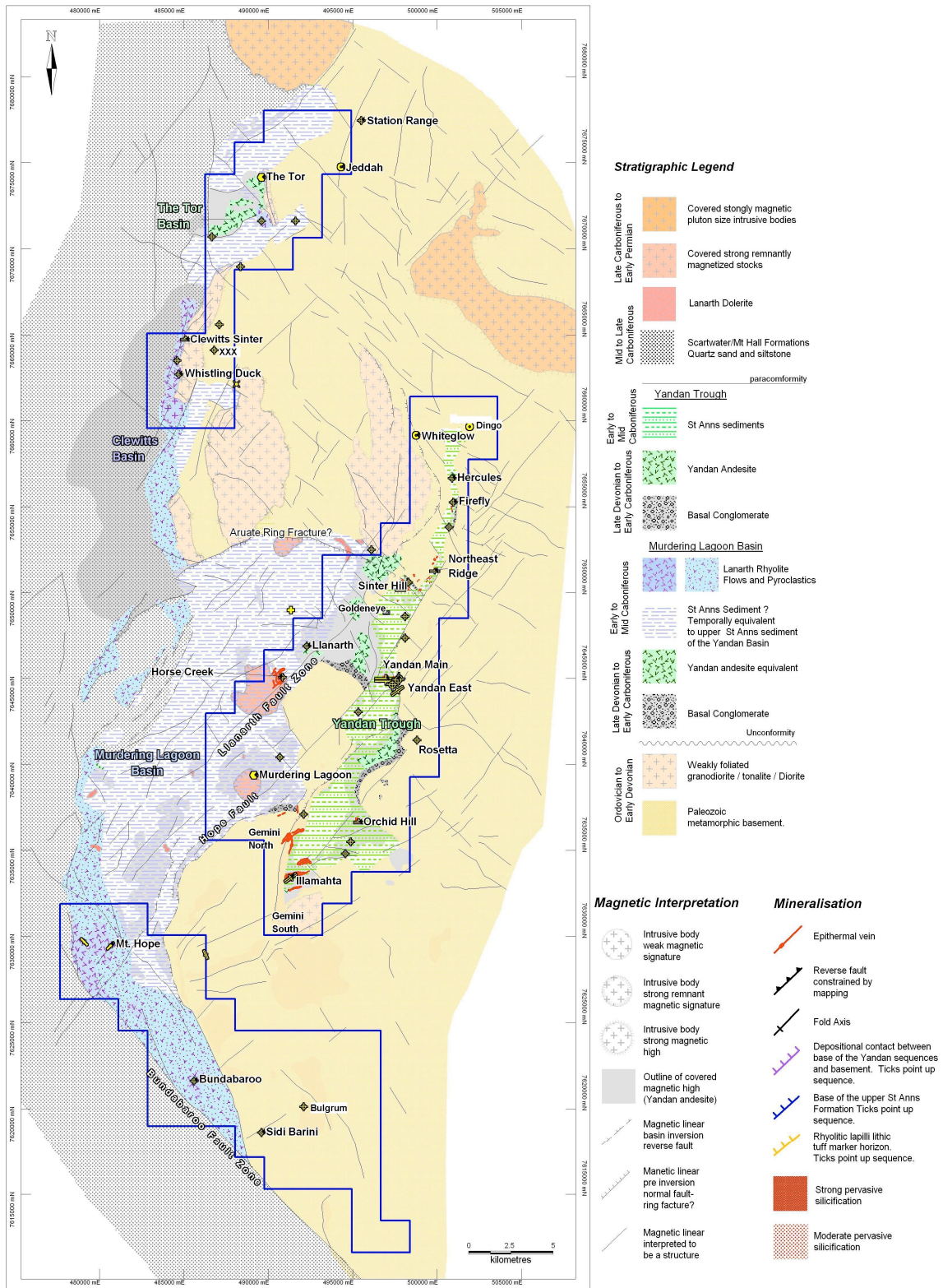


Figure 3. Tenement Geology and Prospect Locations

## **6.0 EXPLORATION ON RELINQUISHED AREA**

### **6.1 *Historic Exploration***

The area covered by EPM 8257 has undergone intensive historic exploration by previous tenement holders in the area (Anglo, CRA, Carpentaria and WMC). Recorded exploration activities included stream geochemical surveys and prospect geological mapping, soil geochemical surveys, costeaning, geophysics and drilling. Relevant historic licences covering EPM 8257 include ATP 1324M, ATP 3616M and EPMs 4031, 4109, 4408, 4736, 4755, 4865, 5445, 6011, 7400 and 7952.

The relinquished part of EPM8257 on 1 September 2007 has more limited historic exploration activity, primarily undertaken by WMC. Activities included extensive stream sediment sampling, rock sampling, and soil grid sampling distal to prospects outside the relinquished area. WMC identified three prospects in the relinquished area; Rosetta, Dingo and XXX, all occurring in basement. Historic prospect geophysics was undertaken at Rosetta Prospect only and no drilling is recorded in the relinquished area.

### **6.2 *EPM8257 Exploration***

Exploration activities consisting of regional remote sensing acquisition and structural interpretation and field based exploration work has been undertaken by tenement holders and / or joint venture operators WMC, Ross Mining, Normandy Exploration, Newmont Exploration, Delta Gold, Ashburton Minerals, Straits Exploration and Straits Gold. Only Ross Mining undertook a significant amount of field work in the relinquished area, consisting of regional geological mapping and rock chip sampling. Detailed prospect evaluation was undertaken at Rosetta Prospect only.

#### **6.2.1 Regional Remote Sensing and Structural Interpretation**

ASTER (Advanced Spaceborne Thermal Emission and Reflectance) imagery was processed by Straits Exploration to identify zones of alteration mineralogy potentially associated with targetted epithermal gold systems. The results of this within relinquished blocks is displayed in attached Map 4. The only significant concentrations of alteration type mineralogy appear to be primary sedimentary clay and metamorphic sericite/muscovite rather than alteration zones in the relinquished blocks.

Regional structural interpretations based predominantly on open file airborne magnetics were undertaken by ERA–Maptec for Ross Mining in 1993, SRK Consulting for Normandy Exploration in 1999 and Global Ore Discovery for Straits Gold in 2006. These developed a model for the formation of gold mineralisation in zones of dilation between major regional fault structures with dextral movement during mineralisation. The relinquished area includes major fault zones (Figure 3); Bundabaroo Fault Zone, Hope Fault Zone and Llanarth Fault Zone but none of the studies identified structurally prospective zones related to these within relinquished blocks.

### 6.2.2 Regional Geological Mapping and Geochemistry

Ross Mining undertook tenement regional geological mapping during 1996-98. This is presented in attached Map 1 and Map 2. A re-interpretation of regional stratigraphy was based on this and structural interpretation (see 5.0 Tenement Geology and Figure 3.)

The predominant stratigraphic units in the relinquished sub-blocks are undifferentiated basement of Anakie Metamorphics, Les Jumelles Beds, Ukalunda Formation or intermediate intrusive, either outcropping or interpreted under cover from regional geophysics. Some relinquished sub-blocks in the centre area of EPM8257 contain Drummond Basin Saint Annes Formation equivalents of the Murdering Lagoon Basin. Younger Llanarth Volcanics and Mount Hall Formation sediments of the Drummond Basin occur in the southwest.

During the regional mapping campaign occasional rock chip sample was taken and minor stream sediment sampling infill of historic sampling (attached Map 3). The only significant results were from the XXX Prospect where a single quartz vein in basement schists up to 2m wide and 50m strike length assayed up to 1.6g/t Au, 7.7% Pb and 1.1% As. Only one other sample has >0.1g/t Au, from the southern area of the tenement.

Soil sampling lines and grids partially cover relinquished sub-blocks distal to Whiteglow and Bulgrum Prospects. There was only sporadic low level gold anomalism.

### 6.2.3 Rosetta Prospect

Rosetta Prospect is located 3km south of the Yandan Mine. It was initially defined by Au anomalous stream sediment sampling by WMC prior to the tenure of EPM8257, and was followed up with rock chip and soil sampling and IP geophysics. No significant gold mineralisation was discovered and the source of stream sediment anomalism interpreted to be sparse nuggetty gold in quartz veining in basement metasediments.

Due to the highly anomalous stream sediment assays both Ross Mining and Straits Gold undertook further prospect evaluation consisting of detailed geological mapping and stream and rock chip geochemistry. Straits Gold work was undertaken by consultants Global Ore Discovery and is presented in Appendix 1. Again, no significant gold mineralisation was discovered, the same conclusions reached and no further work recommended.

## CONCLUSIONS

Historical exploration prior to EPM8257 had identified only three prospects within the relinquished area; XXX, Rosetta and Dingo. These all occur in basement Anakie Inlier and with no characteristics of epithermal gold mineralisation targetted were assigned a low priority. During the tenure of EPM8257 only Rosetta Prospect was investigated at the prospect level of detail. No further work was recommended.

Regional exploration covering the relinquished sub-blocks consisted of regional scale structural interpretations, ASTER interpretation, geological mapping and rock sampling, minor stream sediment sampling infill and grid and line soil sampling distal to prospects outside the relinquished sub-blocks. The only significant result was geochemistry at the historic XXX Prospect with up to 1.6g/t Au.

Regional structural interpretations, geological mapping and geochemical sampling during the tenure of EPM8257 and historical tenure show the relinquished sub-blocks have low prospectivity for economic mineral deposits, both absolutely and relative to prospects retained in EPM8257. With small probability that any work would be undertaken on these blocks they have been chosen for relinquishment.

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## **APPENDIX 1**

**Extract from Yandan EPM8257 Geological Review & Targeting**

## 8.6 Rosetta

Global Ore conducted reconnaissance mapping/sampling at Rosetta with the principal objective to evaluate whether the peak 92 ppb stream anomaly is of any significance, or whether this was an isolated response to coarse gold shedding from the prospect. Previous exploration suggested that gold in stream sediments related to irregular buck quartz veins developed in the Les Jumelles metasediments.

Investigation was restricted to follow up rock chip and stream sediment sampling around areas of previous anomalism. A review of previous work does not show any major faults or folds identified in the prospect. The following is a brief description of the evaluation.

### Previous Exploration

Previous exploration consisted of:

- Stream sediment sampling (40 BLEG and -80# samples in the area surrounding Rosetta). Values include Mo to 400 ppm, As to 25 ppm, Mn to 800ppm, Zn to 90 ppm, with a single 92 ppb Au value.
- A limited soil grid was established over colluvial material and soil west of the ridge crossing the prospect.
- A total of 32 rock chip samples were taken by RSM over the prospect. Maximum values were 0.048 ppm Au, 1930 ppm As, 112ppm Cu and 563ppm Zn.

### Stratigraphy and Structure

The Rosetta prospect is hosted in Les Jumelles metasediments east of the Yandan Trough (Figure 1, Figure 31). The phyllitic metasediments in the prospect have not been subdivided into different units.

- Overall the metasediments are micaceous, with a weak to strong foliation at 350-010° and in places a stronger, elongate, pencil cleavage (rod-like) texture is formed. Locally shear fabrics are noted. The prominent ridge through the prospect trends approximately 340° reflecting silicification.

- The highest gold grades in rock chips lie within the general 340 degree trend defined by the ridge, which probably reflects the presence of the quartz blows and greater resistance to erosion. To the west the basal conglomerate of the St Anns Group marks the edge of the Yandan Trough.

#### **Alteration and Mineralisation**

- No significant alteration is noted in the prospect and field evaluation has not identified any zones of alteration for further evaluation.
- Mineralisation consists of buck quartz zones, which generally appear to have limited strike extent (generally <50m long and < 2m wide), thus resembling quartz blows more than veins overall.
- Previous stream sediment sampling over the prospect produced one result of 92 ppb. Other stream sediment results were <5 ppb.
- Previous rock chip sampling in the prospect produced a maximum value of 48 ppb from the east flank of the main ridge.

#### **Geochemistry**

Global Ore collected a total of:

- 18 stream sediment (BLEG and -80 mesh) samples (including one duplicate and one blank).
- 8 rock chip samples from quartz veins/blows.

Samples were analysed for gold and a comprehensive multi-element suite (Appendix D) across the prospect, with a higher density of samples in the area where the previous 92 ppb stream sediment sample was collected. Two of the rock chip samples were collected from quartz veining directly up drainage from the elevated drainage sample.

All rock chip samples were below detection, with the exception of sample Y02035 (0.11 ppm), from a metre wide buck quartz vein at 498571E/7641617N, in the north of the prospect. This corresponds to the most laterally continuous quartz blow/vein encountered.

BLEG stream sediment samples showed no significant results. A maximum of 4 ppb gold was returned by two samples in the drainage where a 92 ppb stream sediment result was previously detected in the south of the prospect, in the vicinity of some Mn-rich quartz veining.

Gold rock chip results by Global Ore were below detection. Pathfinder elements in rock chip samples by Global Ore were generally extremely low, with the exception of:

- 2320 ppm Ba, 1710 ppm Co, 1110 ppm Cu, 43,400 ppm Mn, 776 ppm Ni and 430 ppm Zn, with Au below detection in Y02036.
- 656 ppm As in Y02035.
- 96 ppm Co, 56 ppm Cr, 2420 ppm Mn, 149 ppm Ni and 589 ppm Zn in Y02047.
- Zn, Cu, As and Sb have a high degree of correlation (0.76 or better). Multi-element sampling by RSM was limited and further correlation is not possible.

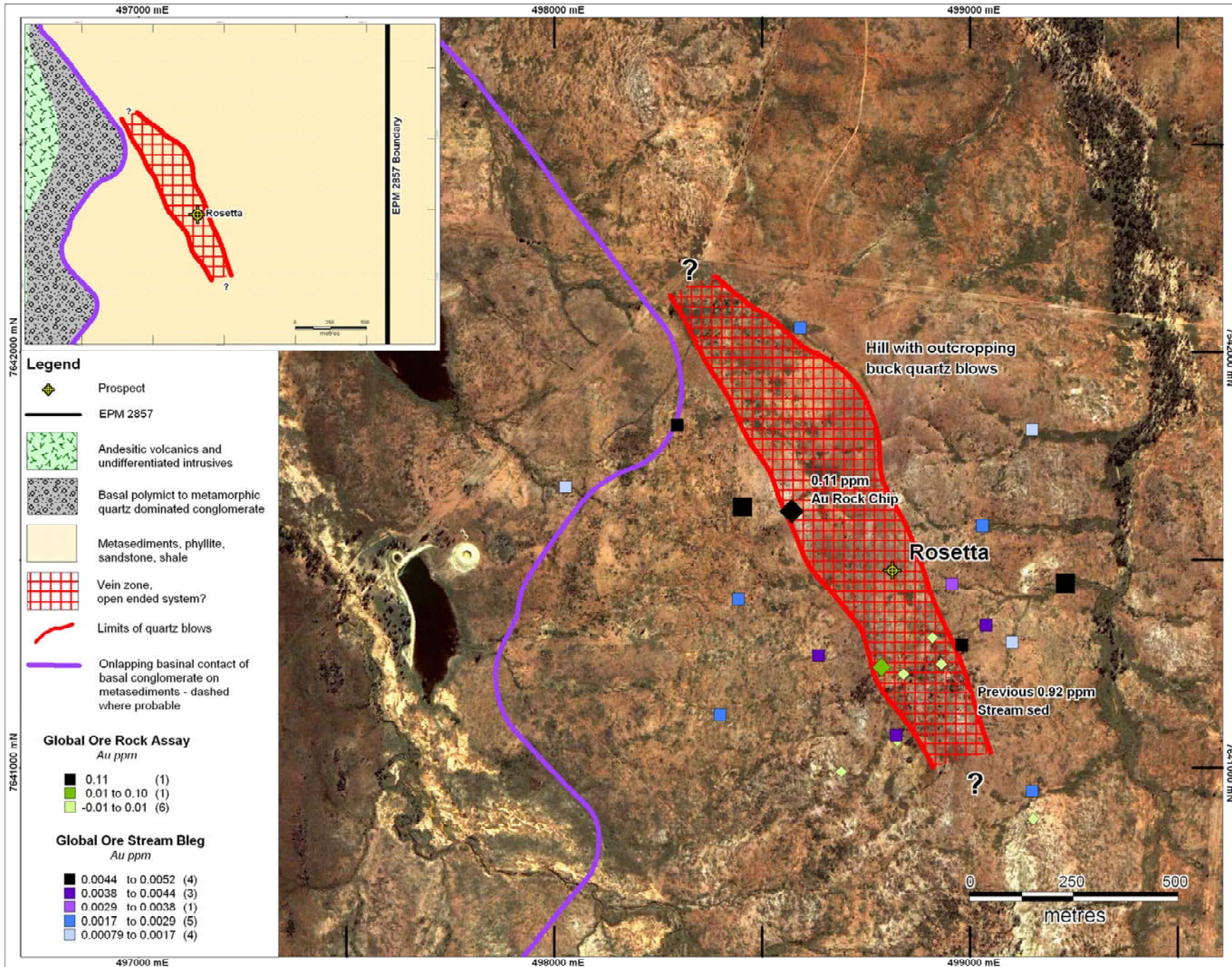


Figure 31. Rosetta Geology and Geochemistry results