



**RETENTION LICENCE 1/2008  
ANNUAL REPORT**

**February 2009 – February 2010**

Prepared by

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## **FOREWORD**

### **Function of the Annual Report**

This Annual Report has been prepared as a public document for submission to Mineral Resources Tasmania (MRT). The report provides a summary of the exploration activities undertaken by ZZ Exploration Pty Ltd (ZZE is a 100% owned subsidiary of Creat Resources Holdings Limited) within Retention Licence 1/2008 (RL1/2008) during February 2009 - February 2010.

### **Role in the Regulation Process**

This document fulfils the role of an Annual Report for RL1/2008 during February 2009 - February 2010, as required under Section 28 of the *Mineral Resources Development Act 1995*.

### **Datum**

Geodetic Datum AGD66 has been used throughout for this report.

## **ABSTRACT**

ZZ Exploration Pty Ltd (ZZE) currently holds Retention Licence 1/2008 (RL1/2008), which primarily covers the Mariposa lead zinc deposit.

During the reporting period Zeehan Zinc has had a company name change to Creat Resources Holdings Limited (CRHL). This name change follows the Chinese Creat Group acquiring approximately 70% ownership of CRHL, and better reflects the Company's business interests in a wider array of commodities and locations, both in Australia and overseas.

The exploration highlight of the year was a \$350,000 airborne SkyTEM geophysical survey, flown in January 2009, covering the entire retention licence area. The airborne survey produced a large number of strong responses over the CRHL tenements, although no notable responses specifically at Mariposa.

Also of note was the completion of a \$75,000 geological interpretation by SRK Consultants of the seismic survey undertaken by the Company in 2007. One of the original seismic lines (line ZB) transects RL1/2008.

Geological field work in the licence has centred on Mobile Metal Ion (MMI) sampling.

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## **1 INTRODUCTION**

### **1.1 Purpose of This Document**

This document fulfils the role of an Annual Report for RL1/2008 during February 2009 - February 2010 as required under Section 28 of the Mineral Resources Development Act 1995.

### **1.2 The Proponent**

ZZ Exploration Pty Ltd is a wholly owned subsidiary of Creat Resources Holdings Ltd ZZE currently holds Retention Licence 1/2008, which includes the Mariposa deposit. Creat Resources Holdings Ltd's long term objective is to grow through success in exploration within the Zeehan area, and through mineral acquisition opportunities both in Australia and overseas.

### **1.3 Retention licence Location and Operations**

#### **1.3.1 Site Location and Mineral Exploration Area**

RL1/2008 covers approximately 3 km<sup>2</sup>, and is located 5km southeast from Zeehan, Western Tasmania (Figure 1). The Zeehan Highway provides road access to RL1/2008. The Emu Bay Railway and the Murchison Highway connect the township of Zeehan with the Port of Burnie, located approximately 140km to the north.

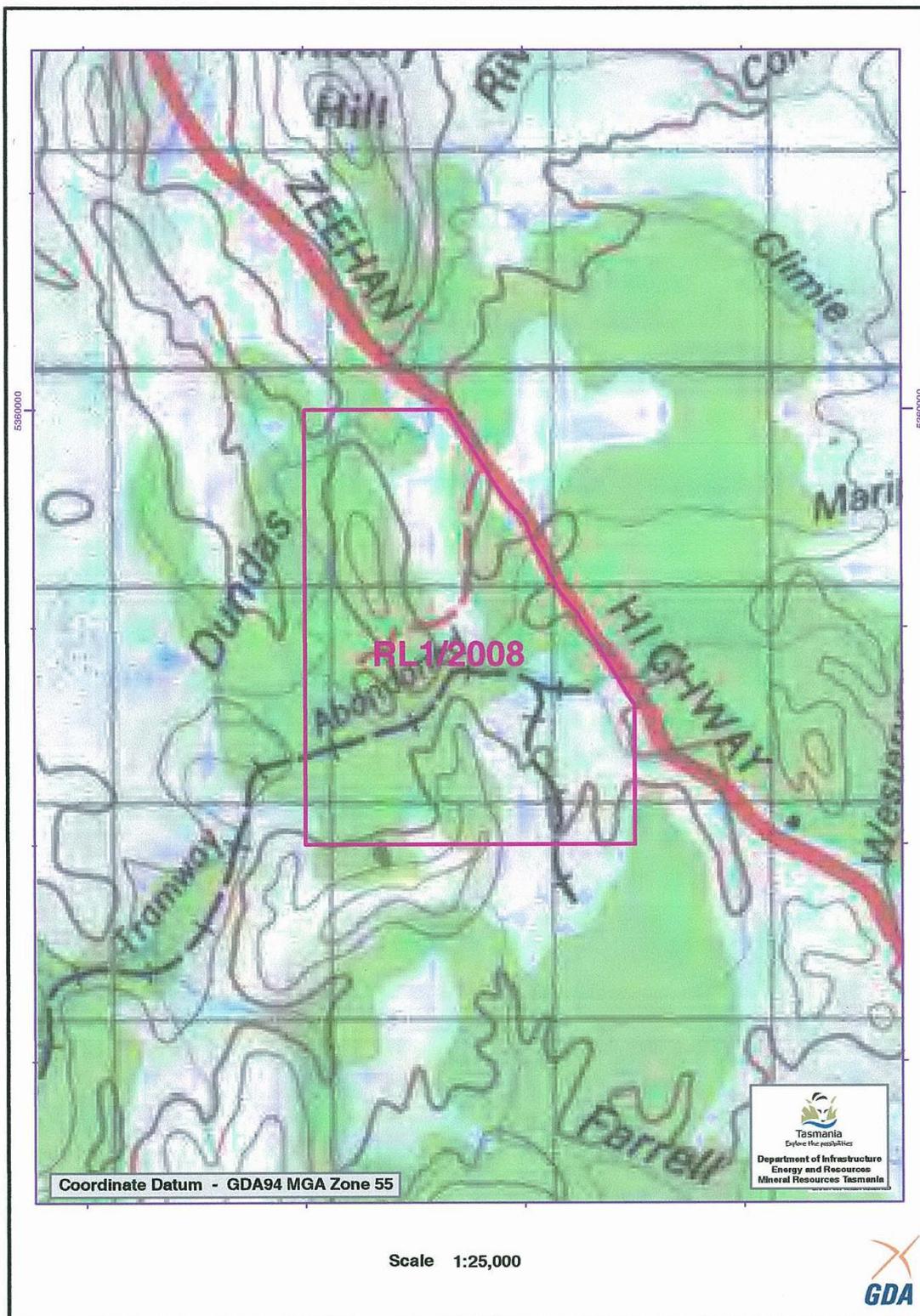


Figure 1: Location of RL1/2008

### 1.3.2 Retention Licence Tenure

RL1/2008 was granted to ZZ Exploration on February 20, 2009 for a period of 2 years, and applies to all Category 1 minerals. The licence covers approximately 3km<sup>2</sup>, with excluded areas as shown in Figure 2 below:

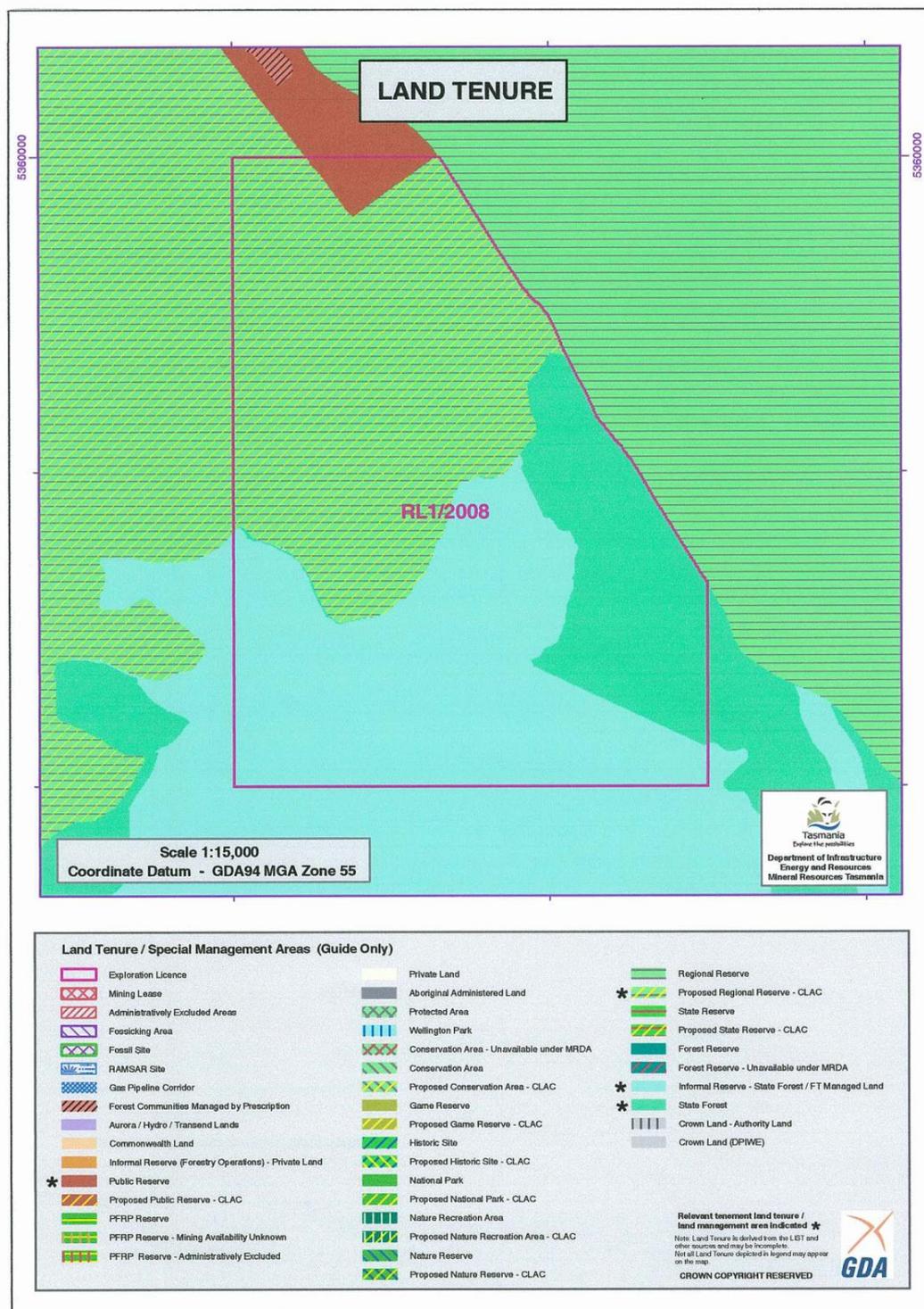


Figure 2: Land tenure for RL1/2008

## **2 Geological Interpretation**

### **2.1 Previous Mining and Exploration within RL1/2008**

The Mariposa Project is part of a series of limestone-hosted base metal prospects located around Zeehan which have been subjected to substantial previous mineral exploration. The Oceana lead/zinc deposit/mine provided much of the impetus for such exploration to be undertaken over all the outcropping areas of the Gordon Limestone in the general Zeehan area (Tear 2005a).

The original Mariposa deposit began its mine life in the 1890's as a small trial mining exercise with a shaft and underground drives developed with production amounting to "1000 tons of milling ore" at 33% Pb and 17ozs Ag (Cadwallader, 1951). Various attempts at re-opening the mine ensued until North Broken Hill undertook a diamond drilling campaign in the early 1950's. This work identified a resource and included a scoping study with some estimation of mining costs, but the reports contain no maps and hence four of the twelve drill holes cannot even be located. Macintyre Mines completed some exploration in the 1970's, drilling one diamond hole just south of the main Mariposa Lode (Bates 1972). This intersected weak lead/zinc mineralisation in the expected position.

In the 1980's the area was held as an exploration licence by AMOCO/CYPRUS who subjected the ground to a systematic search looking to find an Irish-type carbonate hosted lead/zinc deposit. This included drilling of the main Mariposa Lode and substantial trenching over the whole carbonate outcrop at Mariposa. Significant mineralisation and geochemical anomalism was encountered but follow up work was limited (Ellis 2002, Jones & Kary 1983 and Kary 1985). CRAE P/L were the subsequent explorers in the mid 1990's and completed an extensive aircore drilling programme coupled with some diamond drilling and other geological studies including mineralogy (Parkinson 1994, Parkinson, 1995, Tear, 1996 and Tear & Russell, 1997). Again significant mineralisation and geochemical anomalism was discovered but follow up work was not completed.

### **2.2 Prospect Geology**

The base metal mineralisation that occurs at Mariposa is hosted by calcarenites and calcsiltites of the Ordovician-aged Gordon Limestone. The sequence is steeply dipping to the west with the Crotty Quartzite overlying the limestone, forming a distinct topographic high, possibly as a faulted contact. The footwall to the limestone is believed to be a faulted contact, now called the Mariposa Fault, juxtaposing the limestone with the older Cambrian Dundas Group of sediments and volcanoclastics. Within the limestone is a distinctive non-calcareous, mudstone unit with coarse bioclastic material called the Lords Siltstone. Regionally-related reflux dolomitisation has occurred across the upper part of the limestone creating a vuggy dolomite unit. A siderite alteration zone with anomalous lead/zinc values was identified in the base-of-hole aircore samples, from the CRAE P/L work, that is concomitant with the faulted eastern contact. For the main Mariposa Lode, now called the Western Lode, the lead/zinc mineralisation is associated with a seemingly strata-parallel, siderite replacement unit. Galena is the dominant sulphide species in conjunction with lesser amounts of sphalerite. This lode has been the subject to the majority of the previous diamond drilling. The eastern lodes are

weakly defined due to limited shallow drilling, but they are perceived to be steeply dipping and strata-parallel.

On face value, the structure for Mariposa has been presented as quite straightforward i.e. a steeply dipping package of limestone, fault bounded on its eastern margin and conformably overlain by sandstones of the Crotty Quartzite. However it is believed that there is another level of structural complexity, mainly associated with faulting, that may not have been appreciated in the CRAE and AMOCO mapping. In particular the occurrence of cross faults offsetting the geology, a faulted Crotty Quartzite contact and the possibility of shallower bed dips in the northern part of the area. There is some doubt as to the dip direction of the Mariposa Fault.

Also from the 1990's CRAE P/L end-of-hole aircore samples it is possible to delineate additional stratabound dolomitic alteration. This may be due to either reflux dolomitisation or base metal mineralisation. Weathering of the Gordon Limestone produces black clays which accumulate in the valley and can form a surficial deposit ranging from <1m to 50m thick. Other surficial deposits include washed in sand and gravel from eroded Crotty Quartzite forming deposits on the western flank and the floor of the limestone valley.

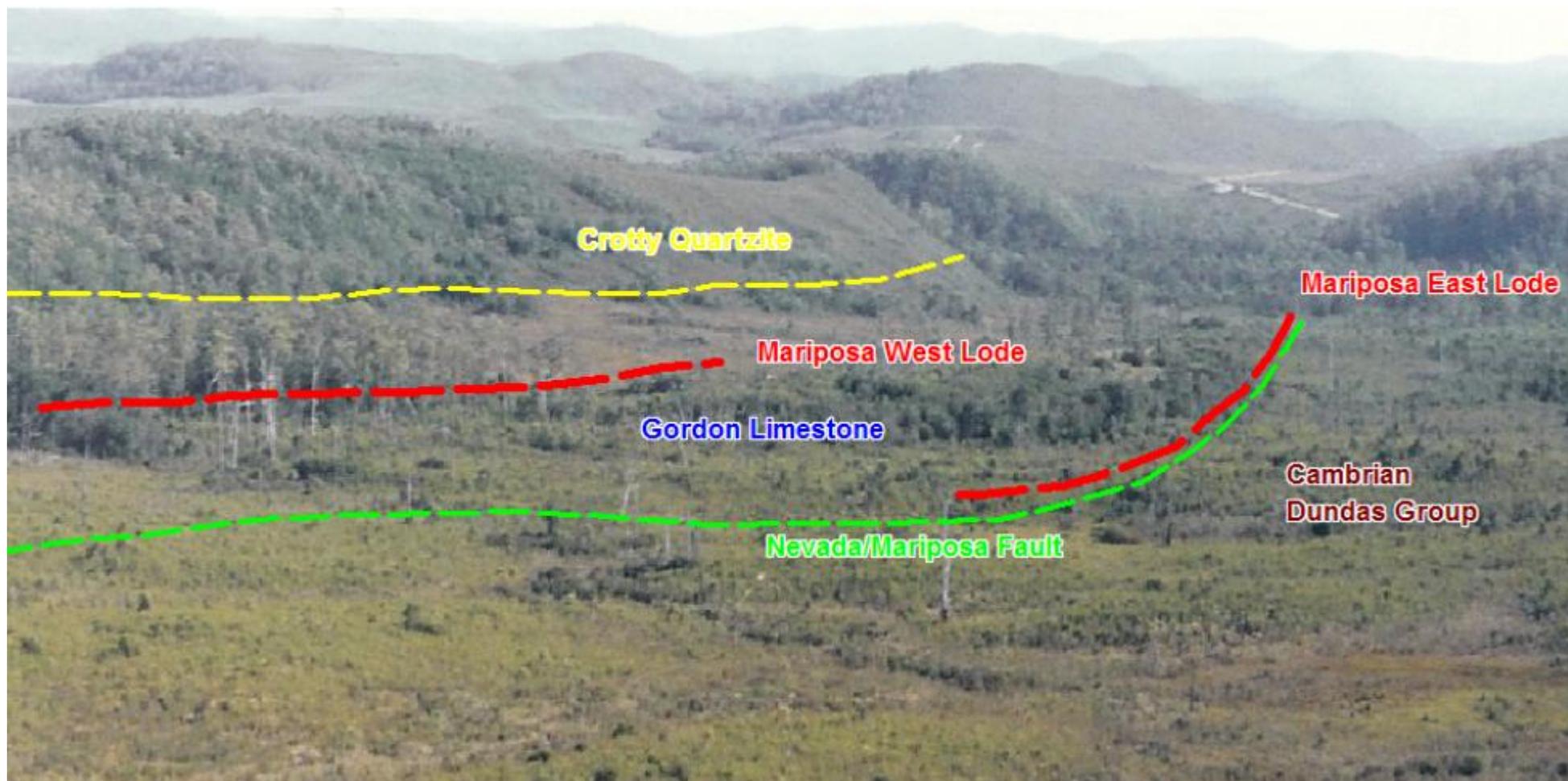


Figure 3: Mariposa Prospect looking North

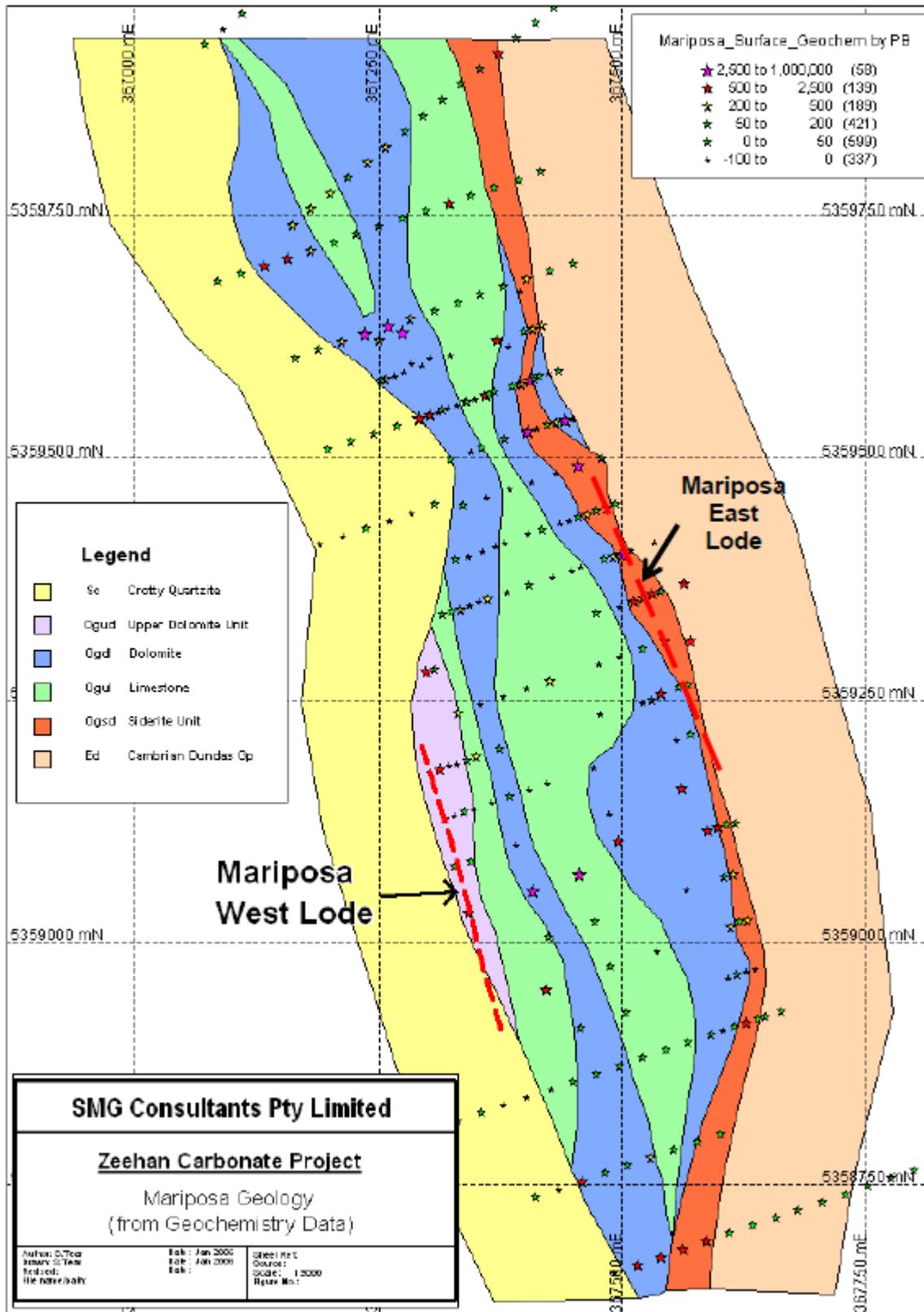


Figure 4: Mariposa Geology map

### **3 EXPLORATION UNDERTAKEN DURING 2009**

A summary of exploration activities undertaken is presented below.

- Airborne electromagnetic (EM) and magnetic survey
- Geochemical Soil survey (MMI)
- Completion of Seismic survey report

#### **3.1 Airborne electromagnetic (EM) and magnetic survey**

From the 20th to the 31st of January 2009, a helicopter borne time-domain electromagnetic (EM) survey was flown for Creat Resources Holdings Limited (CRHL). The survey was centred on the town of Zeehan, and included the entire area held under tenements EL18/2003, EL30/2002, and RL1/2008 (Figure 6).

The EM data acquisition system was SkyTEM, with a Scintrex CS-2 magnetometer attached to the frame. The survey was flown by Geoforce Pty Ltd for CRHL.

The primary advantage of airborne EM is that it enables rapid, systematic coverage over large areas for relatively low cost (certainly when compared to surface exploration), without causing ground disturbance. Two qualifications, however, must be applied when interpreting the results. First, the airborne platform means that airborne EM has trade-off in spatial resolution, near surface vertical resolution, and depth of penetration against the best possible ground based data. Secondly, not all styles of economic sulphide mineralisation give a recognisable EM response (e.g. broadly disseminated deposits can give no response), and some geological conditions produce anomalous EM responses that are not associated with economic sulphides. In this area particularly, economic mineralisation may be dominated by sphalerite, a sulphide mineral unresponsive to EM.



Figure 5: SkyTEM survey flown with EM and Magnetics sling below

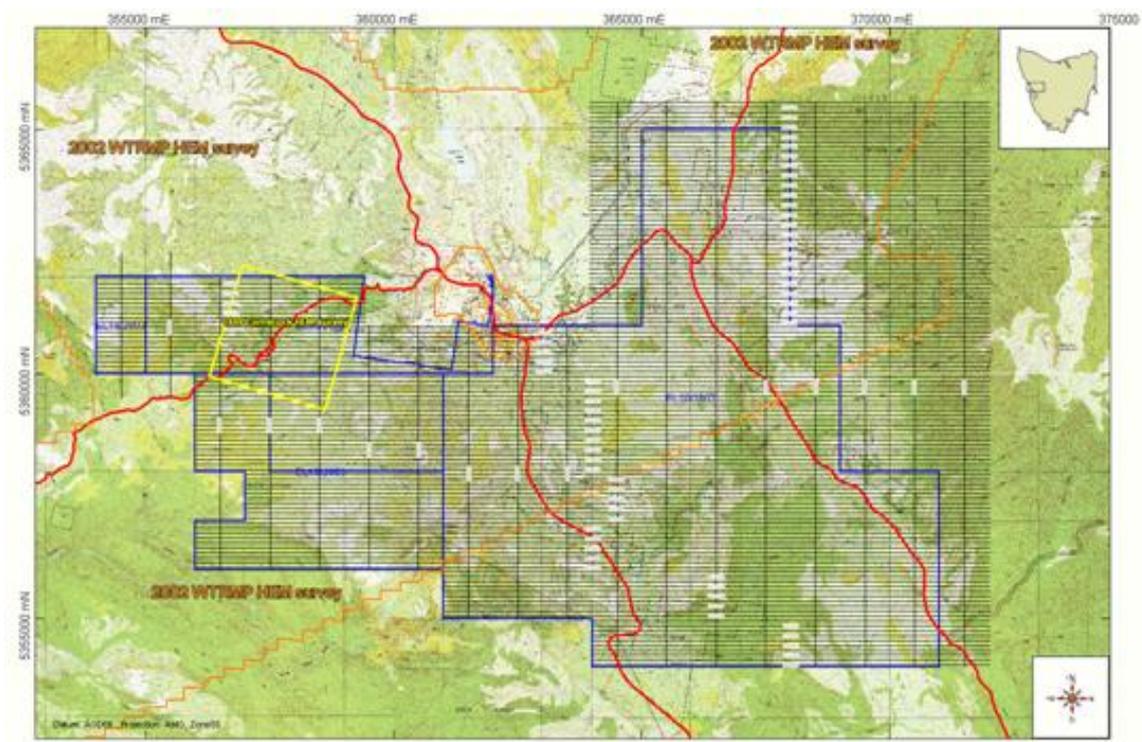


Figure 6: Map of CRHL tenements showing E-W Geoforce SkyTEM flight lines

The reported improvement in detection capabilities over the last five years, and ease of application led to the decision to fly helicopter time-domain EM (HTEM) over CRHL's tenements.

The aim of the HTEM survey was to delineate anomalous EM responses that could be attributed to massive sulphide mineralisation - sulphides associated with Pb-Zn mineralisation in the central and south eastern area.

The region features rugged topography and difficult weather patterns which impeded the logistical aspects of data acquisition. The town of Zeehan, isolated buildings, power lines and the railroad caused strong cultural anomalies that were easily identified and accounted for. A total of 1572 kilometres were flown at 100m line spacing and 30m nominal terrain clearance, with 1000m spaced north-south tie lines (required to level the magnetic data). Data were sampled at 4Hz equating to 4-10m interval dependent on the helicopter ground speed. Total cost for data acquisition and processing was approximately \$175/line kilometre.

The average depth of penetration was 150-250m in area with moderate ground conductivity, and up to 350m in the most resistive zones. Depth of penetration was only significantly degraded below very strong near surface conductors such as the Comstock conductor.

The airborne survey produced many strong responses, but none of these could be attributed unequivocally to economic sulphides due to the confounding effects of highly conductive stratigraphic units.

The Mariposa retention licence had no significant responses, while Oceana RL had only weak responses, they did coincide with the approximate position of the known mineralisation.

### 3.2 Mobile Metal Ion - MMI Soil Survey

18 samples were collected along one line at Mariposa. The orientation program was designed to test if the MMI technique can be usefully applied to Gordon Limestone exploration areas. Line Ma was sited to test known Mariposa mineralisation identified by previous drilling.

The analytical results are shown in the following tables (all units are in ppb).

Sample#	Ag	Cu	Ni	Pb	Zn	
MA3-02	8	20	13	370	310	
MA3-03	2	30	19	1010	1870	
MA3-04	4	100	17	4130	1010	2m@3%(Pb+Zn)
MA3-05	2	40	13	1090	670	
MA3-06	11	50	24	1130	2180	
MA3-07	X	30	X	100	160	
MA3-08	1	20	21	870	2200	
MA3-09	X	30	12	340	380	
MA3-10	2	30	11	110	190	
MA3-11	2	30	12	200	290	
MA3-12	2	20	10	440	140	
MA3-13	X	50	9	240	150	
MA3-14	2	20	8	60	90	
MA3-15	4	10	5	320	110	
MA3-16	1	30	8	140	130	
MA3-17	X	80	X	30	60	
MA3-18	42	230	97	38500	4630	
MA3-19	17800	19600	783	0	22000	

The weak MMI anomaly (samples 18 and 19) corresponds to the west lode of Mariposa deposit overlying approximately 2m mineralisation at 3% Pb+Zn.

The results were encouraging enough to suggest the MMI technique is worth investigating further. A full orientation/calibration should ideally be done to model the MMI response over a known grade and depth of mineralisation before the technique could be properly employed over Gordon Limestone areas in the CRHL tenements.

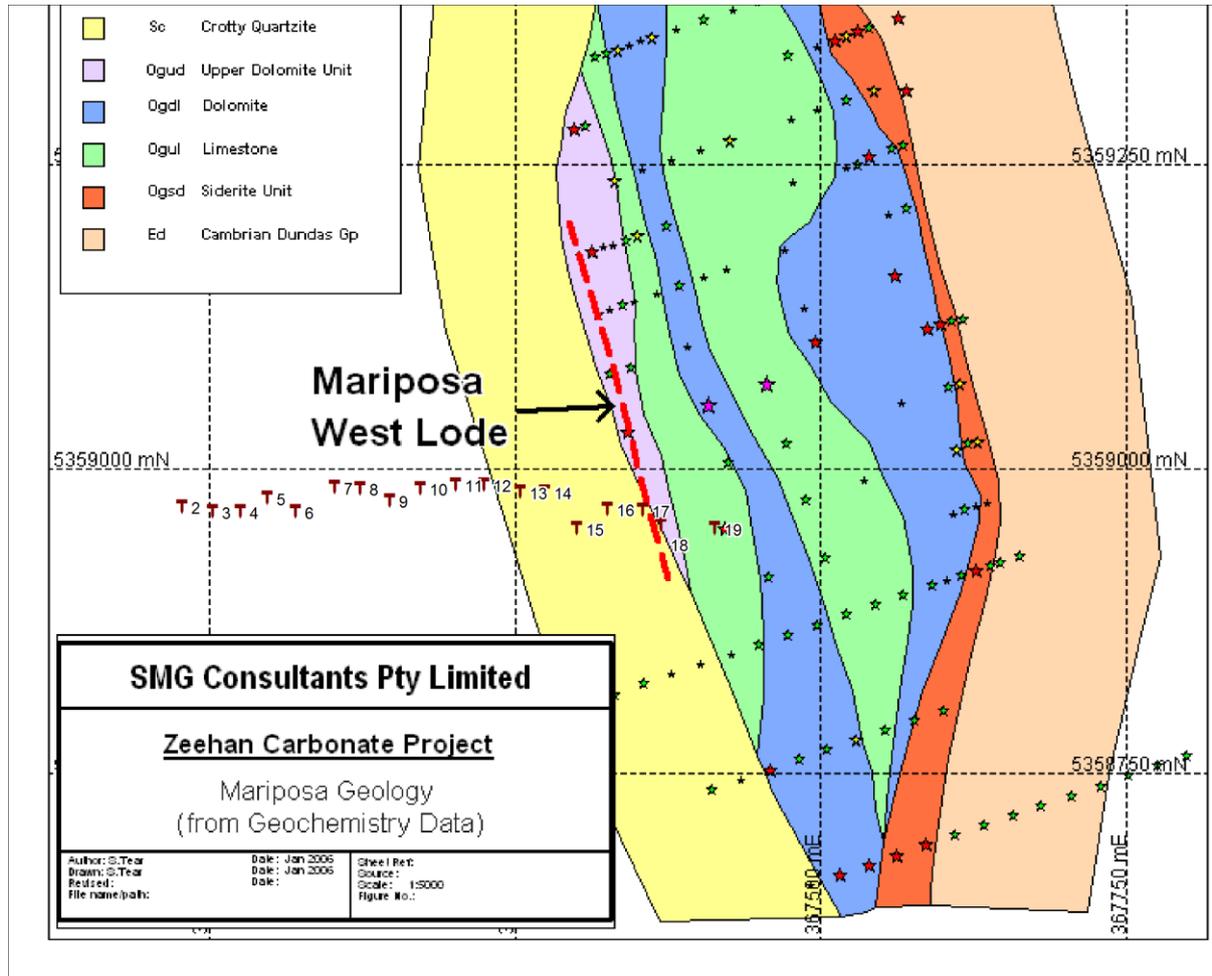


Figure 7: 18 MMI sample locations at Mariposa

### 3.3 Seismic Survey Geological Interpretation

Please refer to CRHL EL20/2002 December 2008 – December 2009 Annual Report Appendix A for the full SRK Consulting Seismic Geological and Magnetic Interpretation.

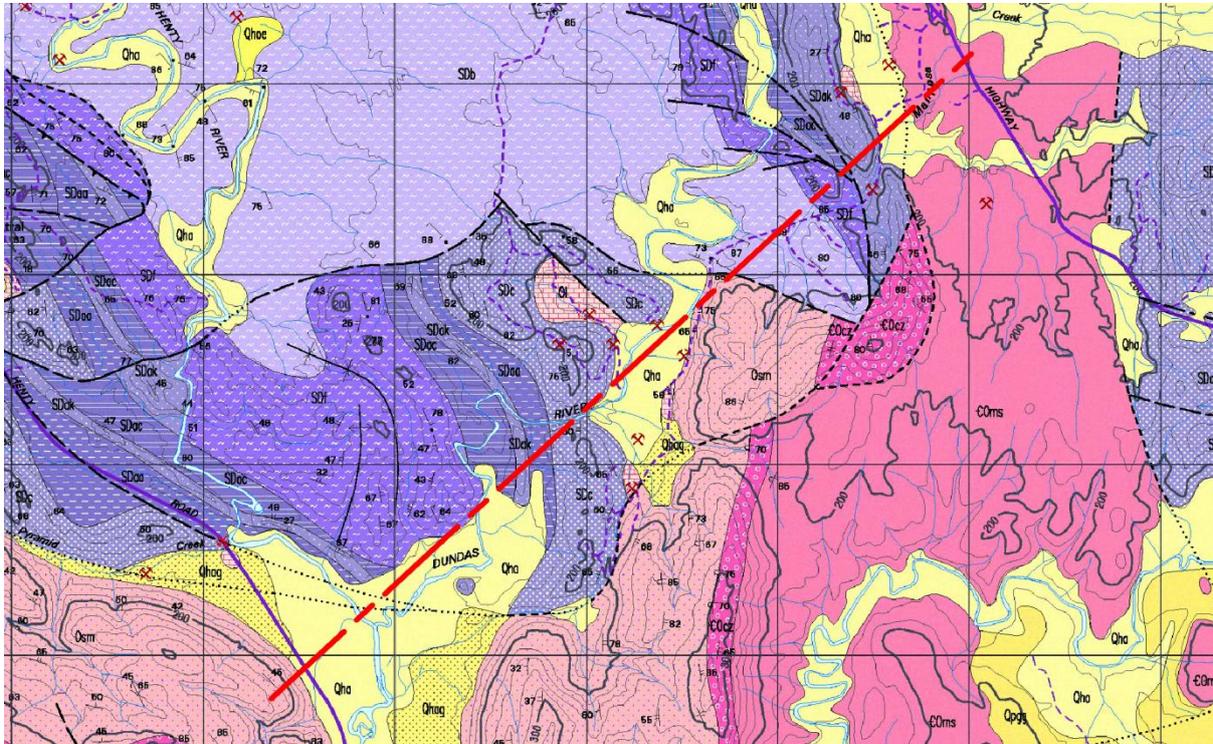


Figure 8: Cross section line paralleling seismic line ZB

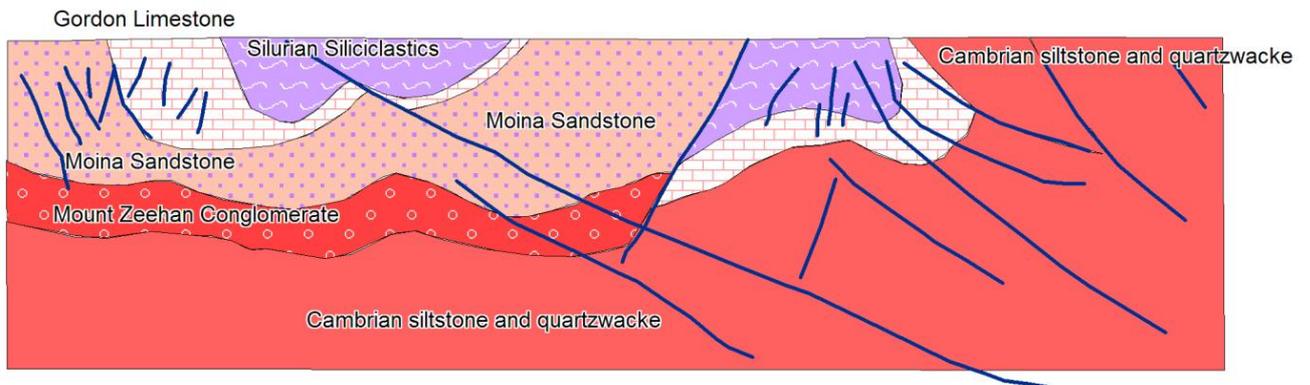


Figure 9: Cross section paralleling seismic line ZB transecting RL1/2008 Mariposa and Sunny Corner Prospect.

## **4 CONCLUSIONS AND PROPOSED WORK PROGRAM**

Whilst exploration on RL1/2008 was mainly as a subset of larger, regional surveys covering all of CRHL's tenements such as the SkyTEM Airborne Survey and SRK Seismic Interpretations, specific focussed geological field work occurred such as the MMI program outlined earlier.

The SRK seismic interpretation has provided a valuable contribution towards the understanding of the deep-seated structure and geology at Mariposa.

Exploration works at Mariposa during 2010 will focus on analysing and interpreting the results from the SkyTEM geophysical survey as it applies to the Mariposa area, whilst considering the findings from the 2007 seismic survey geological and magnetics interpretation. Further consideration of MMI as a useful tool in the search for Irish-style lead-zinc mineralisation will also be undertaken in the next 12 months.

## **5 ENVIRONMENT**

No environmental disturbance occurred in the licence during the reporting period.

## **6 EXPENDITURE**

Expenditure for the four quarters for 2009 is presented below.

2009	Q1	\$ 2750
	Q2	\$ 7600
	Q3	\$ 8840
	Q4	\$ 6400
<b>Total:</b>		\$ 25590

## **7 REFERENCES**

1. Bates, T.E., 1972; TCR72\_0861 – Final report on Special Prospecting Licence no. 46, Zeehan, West Tasmania (for McIntyre Mines)
2. Cadwallader, W.J., Garretty, M.D., Loh, R.P., 1951; TCR50\_0106 - Mariposa Mine (for North Broken Hill)
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4. Jones, P.A., Kary, G.L. 1983; TCR83\_1998 - Progress Report, January to June 1983, Amoco/CSR Joint Venture, Part Exploration Licence 15/76, Dundas, Tasmania
5. Tear, S.J. Geological Interpretation and Block Model Report for the Mariposa Prospect, Zeehan, West Tasmania, February 2006, SMG Consultants.
6. Kary, G.L., 1985; TCR85\_2457 - Progress Report July 1984 to June 1985 Part EL 15/76 Dundas, Tasmania (for AMOCO)
7. Parkinson, R.G., 1994; TCR94\_3551 - Mount Dundas EL 45/92, Tasmania, Report on Exploration for the First Year of Tenure, 16/4/93 to 15/3/94 (for CRAE)
8. Parkinson, R.G., 1995; TCR95\_3722 - Mt Dundas EL 45/92 Tasmania Report on Exploration for Year 2 16.4.94 to 15.3.95 (for CRAE)
9. Russell, S.A.J., Tear, S.J., 1997; TCR97\_4009 - Annual Report - EL 45/92 - Mt Dundas (for CRAE)

## **8 APPENDICES**

**Appendix A (digital):** MMI Assay Results from SGS in original pdf format

**Appendix B (digital):** MMI Assay Results in .csv format