

**PARAGON RESOURCES:  
ANNUAL REPORT, EL18/2010, ELLIOTT BAY**

**To Year 3 (Nov 2012 - Nov 2013)**



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Schoer, Reed & Associates Pty Ltd.

Wednesday, 20 November 2013



One of the R44's used for site checking during 2013.

**SRA** **SCHOER, REED  
& ASSOCIATES**

*Linking resource projects, companies and capital markets*

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## **SUMMARY**

This Third Annual report for EL18/2012 ('Elliott Bay', the 'licence area') presents results from field visits, assays of rock chips and ongoing Hylogger and literature review results.

The Elliott Bay licence is held by Paragon Resources Pty Ltd ("Paragon"). The Elliott Bay project is managed for Paragon by Schoer, Reed and Associates Pty Ltd ('SRA').

The Elliott Bay area is prospective for a suite of elements, including base metals and associated elements, Au and rare earths. The principal focus of exploration for Paragon is on Au.

A highlight of this last year are assay results collected over a strike length of about 6km in the vicinity of a recently discovered fault or high strain zone referred to by Paragon as the Discovery Creek Shear Zone ('DCSZ'). Of the samples collected, all were anomalous in Au, with one sample assaying 160g/t Au. Notably, the DCSZ also coincides with areas of historically high panned concentrate Au results.

Field work at Elliott Bay has been limited to two visits by helicopter. These day trips were aimed at assessing the setting of mineralisation and in planning upcoming work for the 2014 field season. This work is planned to include drilling, sampling, further geological and structural mapping, and geophysics.

The Elliott Bay project has been successful in securing external funding. Funding is going toward 2013/14 field work.

Other work at Elliott Bay over the year includes ongoing Hylogger studies in conjunction with input from mineral Resources Tasmania and the CSIRO, a review of the V9 prospect and historic data, and ongoing review of historic data for surrounding prospects (V2, V12, Waterloo Creek and V10 being the priorities).

Results of exploration to date remain positive, highlighting flaws in earlier exploration models and interpretations of exploration data, but reinforcing the value of existing data in context of a better understanding of the geology and setting of Au-related mineralisation.

Expenditure for Year 3 to date is \$76,517. This is against a minimum required expenditure of \$55,000.

## **1. INTRODUCTION**

EL18/2010 comprises 109 km<sup>2</sup> located in the Southern Mount Read Volcanic belt (SMRV) of south-western Tasmania (Figures 1.1 and 1.2).

The licence was granted on 24th November 2010 without objection.

The licence covers the southern section of exposed Cambrian volcanic and related intrusive rocks. Exploration at Elliott Bay in the past has focussed on VHMS-style massive sulphide (lead and Zn) mineralisation with little regard to explaining the considerable gold anomalism in the area. Paragon is focussed on looking at alternative models for the Au occurrences.

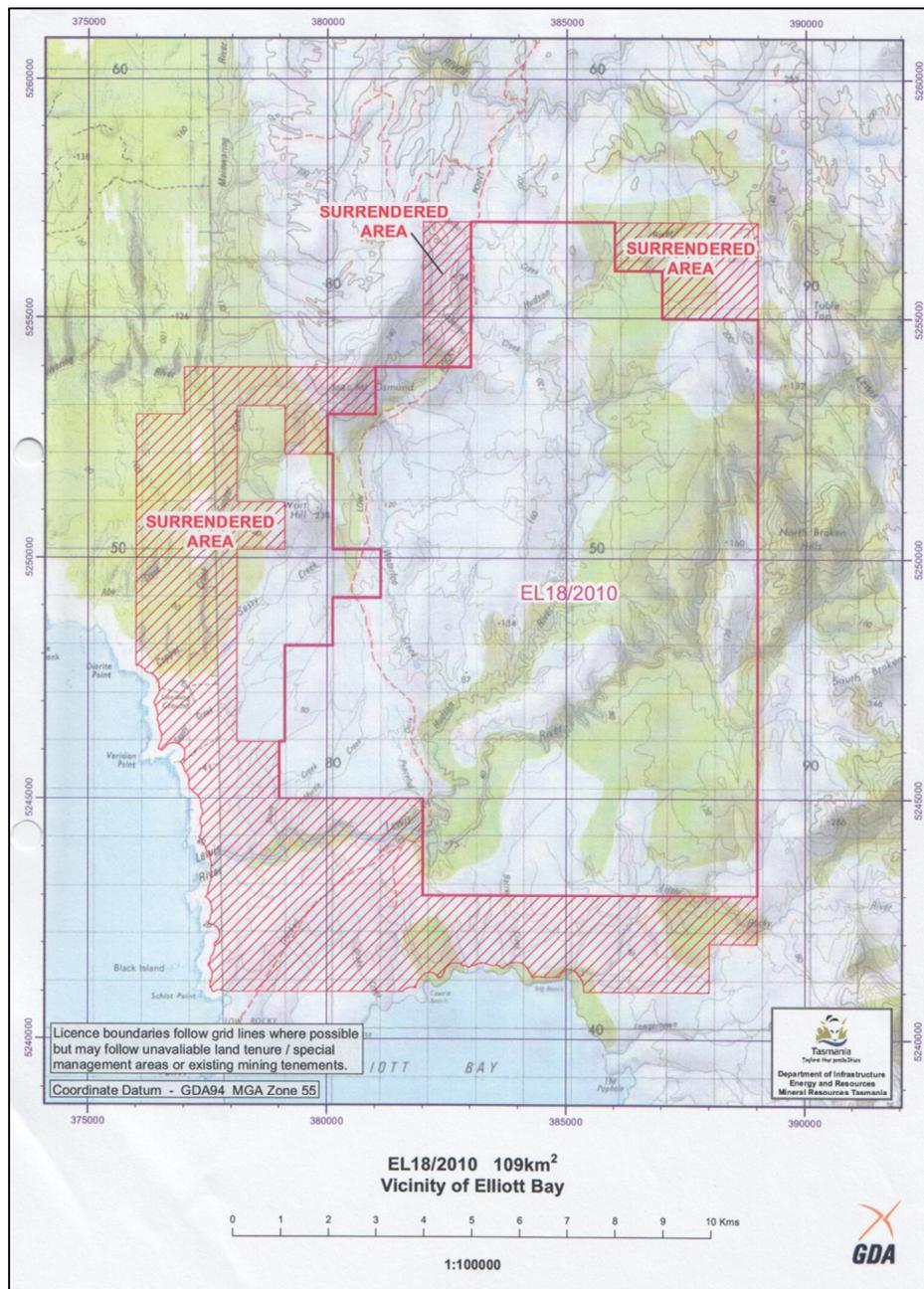


Figure 1.1. Map showing Elliott Bay licence area, and area relinquished. The area retained is considered prospective for yielding a Cambrian age mineral deposit of economic size (>2Moz gold eq)

Paragon was first alerted to the potential at Elliott Bay after processing of government Western Tasmanian Regional Minerals program (WTRMP) data revealed a greater complexity in the geology and structure in areas of Au anomalism than had previously been recorded.

Most exploration at Elliott Bay has shown a progression from regional to prospect-scale, with a focus on identifying and testing for massive sulphide VHMS-style lead and Zn mineralisation. This emphasis on a stratabound VHMS model largely pre-dated discovery of the fault-related Henty Au deposit. It also pre-dated regional geological or high-quality geophysical datasets.

Importantly, the design of exploration programs, regional mapping and interpretation of exploration results in the past has nearly always been in context with an exploration model prioritising lithology-parallel (stratabound), Pb- and Zn-

dominated mineralisation. Mineralisation at Elliott Bay that did not fit this VHMS model, such as has been found by Paragon in the vicinity of Discovery Creek, was largely disregarded, inadequately explained or never followed up.

Despite considerable structural complexity in the Elliott Bay area, no structural geologists were involved in constructing the regional geological maps of the region (Vicary, pers comm).

Recent studies elsewhere in Australia are also now showing a continuum of deposit styles in VHMS-bearing terranes. In particular, work in Western Australia (Groves et al, GODS, 2002) shows an association between VHMS mineralisation and shear zone related mineralisation. Although the regional mapping in the eastern Elliott bay area lacks structural input, considerable complexity is evident in Western Tasmanian Regional Minerals Program (WTRMP) radiometric and aeromagnetic data (Reed 2011). These data clearly show anomalies across multiple radiometric and aeromagnetic datasets in areas also anomalous in Au.

The combination of narrow exploration models, new data, and an improved understanding of the styles of mineralisation that might be present in the southern Mount Read Volcanics formed the basis for Paragon acquiring the ground in 2010.

This report will reveal results from the 2012 program; with a recent increase in funding Paragon intends to follow up results with geophysical targeting and a drill program in first quarter 2014.

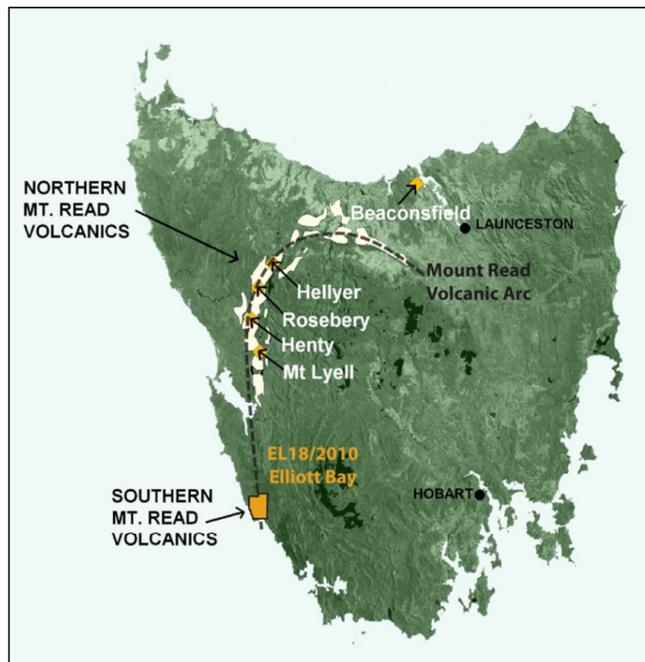


Figure 1.2. Map of Tasmania showing the location of EL18/2010 in southwestern Tasmania. The Elliott Bay licence encompasses 109 sq km of the highly mineralised Mount Read Volcanic belt.

## **2. EXPLORATION PHILOSOPHY**

The exploration philosophy adopted by the company is a matter of constant review.

Initial targeting of the eastern Elliott Bay area resulted from realisation that anomalous and unexplained Au results in historic panned concentrates (up to 688 g/t Au) coincided with structures mapped from WTRMP geophysical data (Reed, 2011). During the 2012 program Au was found in rock chips and the area was named Discovery Creek. Au was also panned above these rock chips indicating that the host material continues up stream. Rock chips of 160 g/t and 29g/t have been taken 150m apart across stratigraphy indicating multiple shears/pods of mineralisation at discovery creek. IP lines are planned over this area for a systematic generation of targets for drilling in the next season.

Complexity in WTRMP data and field checks by MRT geologists (Green, 2002) were inconsistent with simple geological contacts shown on regional geological maps. Further investigation revealed that regional geological mapping in the 1990's had lacked structural input (Vicary pers comm). Rather, a lithological focus was seen as being more important to providing a regional context for the VHMS models driving exploration at the time.

Evidence existed for features in WTRMP data being more than artefacts. Features matched known geological trends. One feature of particular interest coincided with a zone of previously documented sericite and chlorite alteration (eg Cyprus 88/2853), as well as progressive changes in regional foliation and the presence of stretching lineation's on regional geological maps. Field checking revealed this feature to be a major shear zone mapped to be greater than 5km long.

Geophysical complexity in WTRMP data often also coincided with areas of unexplained geochemical anomalism. However, anomalous stream sediment Au results from the eastern Elliott Bay area had been largely disregarded by earlier workers because their setting did not fit with the stratabound Pb- and Zn- VHMS-style mineralisation being sought (eg as at Rosebery in the northern MRV).

Even prior to field checking, it was clear that structural geology played a more important role in the geology of the Elliott Bay area than had been previously documented. Developing a better understanding of this was crucial, especially given the structural influence highlighted for more recently discovered Au deposits in the northern Mount Read Volcanic belt, such as Henty.

Recent work in Western Australia has also shown an association between VHMS terranes and shear zone hosted mineralisation (Groves, 2003). Indeed, it is a characteristic of Achaean belts that the two deposit styles can occur together.

Demonstrably VHMS-style mineralisation at Elliott Bay (eg Wart Hill) occurs in the upper parts of the Elliott Bay volcanic sequence. By contrast, Au mineralisation in the eastern Elliott Bay area sits lower (or deeper) in the stratigraphy. This environment is conducive to a hotter, Cu-Au-rich, shear-related mineralising environment.

In summary, the hypothesis being tested by Paragon is that Cu- and Au-mineralisation located by earlier explorers in eastern Elliott Bay area did not fit the VHMS model of earlier workers because it is not a VHMS style of mineralisation. Rather, it is a manifestation of the same mineralising event, but formed deeper in the Earth's crust in areas of structural complexity not previously documented.

Results of field-checking presented in this report verify that Au mineralisation in eastern Elliott Bay is indeed associated with zones of high strain. These structures will be the focus of geophysical imagery, mapping and sampling in upcoming field trips.

A conceptual Au target for Elliott Bay is a deposit similar to or larger than the Henty – Mt Julia system (eg >2Moz) in the northern section of the MRV. A deposit smaller than 2Moz Au (eq) is unlikely to be economic given the remote location.

### **3. TENURE AND SOVEREIGN RISK**

EL18/2010 is wholly Crown land. There is no private land, nor are there farming or grazing leases covering the licence area.

EL18/2010 is contained within one of a number of Conservation Areas located in prospective areas of Tasmania. It is not part of the World Heritage Area. Work at Elliott bay is subject to review by the Mineral Exploration Working Group, an advisory group to Mineral Resources Tasmania.

Elliott Bay falls within the Cape Sorell Strategic Prospectivity Zone (SPZ; Figure 3.1). SPZ's are recognised regions of high prospectivity for mineral discovery. They were established under 1993 legislation enacted to provide resource security for the minerals industry. Under this legislation, the status of significant parcels of Crown land within SPZs cannot be changed to a tenure excluding mineral exploration and mining without the approval of both Houses of State Parliament. The approval of the Director of Mines is needed for small parcels of land (less than 500 hectares). **If the status of land is changed so that a mineral tenement is voided or diminished in size, the holder may be compensated** (Mineral Resources Tasmania, Annual Review 2000-01, text copied from ABS website, <http://www.abs.gov.au/ausstats/abs@.nsf/0/42124675B8A0F173CA256C32002416BE?opendocument>). SPZ legislation is unique to Tasmania and aims to reduce sovereign risk to the explorer by providing compensation should there be a change of land status. The SPZ legislation offers greater certainty to the explorer than might ordinarily be expected elsewhere in Australia.

There is no native title claim over Elliott Bay. Nor is Native Title the same issue in Tasmania as it is elsewhere in Australia. Rather, the Native Title (Tasmania) Act 1994 (Tas) confirms State ownership of all natural resources.



Figure 3.1. Location map showing Strategic Prospectivity Zones (SPZ's) in Tasmania. Elliott Bay (EL18/2010) is contained within the Cape Sorell SPZ.

#### **4. LAND ACCESS AND INFRASTRUCTURE**

Elliott Bay is located on the high rainfall west coast of Tasmania, with the potential for adverse weather conditions at any time of the year. Eastern parts of the Elliott Bay licence tend to be more undulating (Figure 4.1) and therefore more sheltered than exposed button-grass plains to the west. However, fieldwork is best restricted to summer months, between November and April.

Access to and within the Elliott Bay area is difficult. Vehicular access is restricted to quad-bike tracks. Lighter equipment and personnel can be flown by helicopter from Strahan or Strathgordon. Helicopter services (B2/B3 Squirrel, Jetranger and Robinson 44's) are based from Strahan during the summer months with additional operators (Squirrel and Longranger helicopters) located on the north coast. Helicopter service providers are experienced in both slinging mineral exploration equipment and the Elliott Bay area.

There is an old but still serviceable airstrip located a few kilometres north of the EL18/2010 at Moores Valley (Figure 4.1). Air Tasmania have advised that they are prepared to fly their Islander aircraft to Moores Valley from Hobart. Islanders are proven aircraft with a carrying capacity of about 780kg ex Hobart and 860kg ex Moores Valley. They are a cost and time effective alternative to helicopters for transport of personnel and light equipment from Hobart for larger programs.

Heavier equipment has previously been barged down the west coast from Strahan (eg Frontier Resources). An alternative for accessing the eastern parts of Elliott bay is to sling gear to site from a barge or fishing boat using a helicopter.



Figure 4.1. The landscape at Elliott bay comprises a dissected tertiary plane, ranging from open flat button grass country in the west to densely forested and button grass-covered planes dissected by steep-sided valleys in the east. A 4WD/quad bike track runs from Macquarie harbour through EL18/2010 to Low Rocky Cape, also passing the Moores Valley airstrip.

## **5. REGIONAL SETTING OF MINERALISATION**

About 50% of Tasmania can be broadly classified into metallogenic domains hosting a number of mineral deposit types; including:

- Late Proterozoic Arthur lineament in the northwest of the State, yielding iron ore and magnesite .
- Early Cambrian mafic and ultra-mafic rocks containing platinum group minerals (PGMs), Ni, Cu, cobalt, Au and other minerals.
- **Middle Cambrian Mount Read Volcanics (MRV), hosting polymetallic volcanic hosted massive sulphides (VHMS) and disseminated Cu-Au deposits.**
- Middle Devonian mesothermal Au deposits in north-eastern Tasmania.
- Late Devonian to Early Carboniferous granite associated deposits.

Elliott Bay is contained within the Middle Cambrian Mount Read Volcanic (MRV) belt. The MRV belt is highly mineralised, hosting three of Tasmania's six 'world-class' deposits. The MRV boasts an impressive pre-mining resource of more than an estimated 11Moz Au.

EL18/2010 (Elliott Bay) is contained within the Southern Mt Read Volcanics (SMRV). These rocks are similarly well mineralised. Mineralisation is of the same age and style as further north but due to its remote location, has received less exploration attention and, as a result, is less well understood.

## **6. GEOLOGY**

This section gives a brief overview of the regional Palaeozoic geological setting of the Mount Read Volcanics (MRV) and the geology of Southern Mount Read Volcanics (SMRV) in the vicinity of EL18/2010 (Elliott Bay).

### ***Regional geology of the Mount Read Volcanics***

The geology of the MRV is best understood in the north but is more controversial in the southern MRV where Elliott Bay is located.

In the north, the MRV resulted from a major period of volcanism along the eastern edge of a water filled rift in the Cambrian (circa 500Ma). Volcanism was initially rhyolitic to dacitic in composition in the centre of the trough (Central Volcanic Complex; CVC), with predominantly quartz- feldspar-phyric rocks erupted to the east (Eastern Quartz-phyric sequence).

The CVC in the northern MRV hosts the Rosebery and Hercules deposits.

Andesitic to basaltic volcanism followed with further rifting focussed to some extent on the Henty fault system. These Tyndall Group rocks host the Que River and Hellyer VHMS deposits.

Further rifting was centred on the Henty fault system and was followed by the mainly felsic final phase of volcanism. Coeval with the deposition of these dominantly volcanic sequences was the deposition of the Western Volcano-Sedimentary Sequences containing sediments of mixed volcanic or metamorphic provenance and minor felsic and andesitic volcanics.

Both Henty and Mt Lyell are mineralised deposits hosted or controlled by faults. Au-rich deposits such as Henty and Mt Lyell have characteristics of both VHMS- and porphyry Cu-Au -style mineralisation.

### ***Geology of the Southern Mount Read Belt (SMRV)***

The SMRV are separated from the main belt of MRV north of the Gordon River. Geological understanding of the relationship between the northern and southern MRV is hindered by intervening Tertiary cover and relative lack of drilling south of Macquarie Harbour.

The geology at Elliott Bay comprises Cambrian calc-alkaline felsic to mafic volcanics (Figure 6.1). Volcanic rocks are prospective for Au, Ag and base metals (Cu, Pb, Zn). Cu Au anomalism is more prevalent in the east of the licence area at what are probably deeper stratigraphic levels, whereas Pb and Zn of VHMS affinity (with or without remobilised Devonian age Au) are more prevalent in the west (Figure 6.2).

Basement likely comprises a sequence of deformed Precambrian metasediments (similar to those outcropping to the east of EL18/2010) and/or mafic lavas and associated sedimentary rocks. Basement rocks are overlain by volcanoclastic and siliciclastic sediments correlated with the Sticht Range beds of the northern MRV sequence. This unit unconformably overlies and is in part fault contact with Precambrian metasediments east of EL18/2010.

The remaining geology and its correlation with rocks further north is more controversial. In general, the Cambrian sequence is thought to young and face west. Rocks are generally tilted to the west, with the oldest rocks in the east of the licence area.

The sequence is well foliated but demonstrates little clear folding. However, there has been little structural work and recent discovery of large ductile shear zones in the eastern parts of the Elliott Bay licence area indicate a more complex geology that is shown on geological maps. Regional geophysical data and ground truthing support greater complexity than previously mapped.

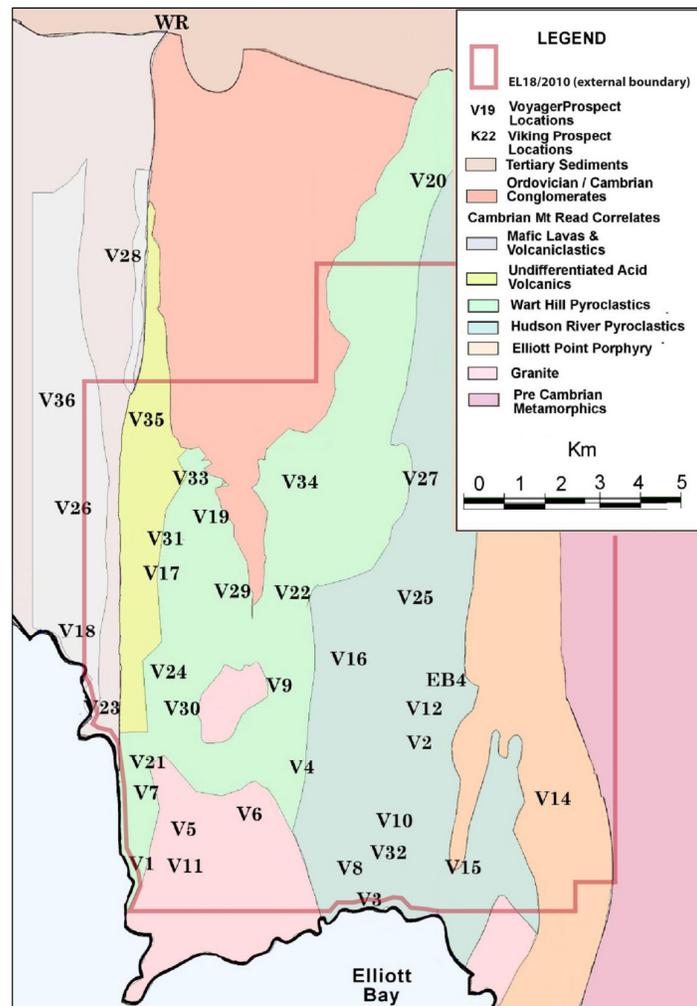


Figure 6.1. Simplified geological map of the Elliott Bay area. The gross geology has been grossly mapped as a westward-facing sequence. However, the on-ground geology is complex and a stratigraphy remains controversial. Geological maps of the area vary greatly in their interpretation, and readers are best advised to limit their reliance to factual measurements and site descriptions and to use these in context with geophysical data.



In the east, the base of the Cambrian sequence outcrops includes what has been mapped as a 2 to 3 kilometre thick quartz-feldspar-biotite porphyry (Elliott Point Porphyry). Field checking (this study and Green 2002) indicates greater complexity with porphyry structurally and/or lithologically interleaved with volcanic rocks.

The Lewis River Volcanics lie west and stratigraphically above the Elliott Point Porphyry. These are subdivided into the Hudson River and Wart Hill Pyroclastics, and consist of variably quartz-, biotite- and feldspar-phyric volcanic sediments and lavas and/or intrusives.

Much is made in the literature about the quartz-rich rhyolitic nature of these rocks and their correlation with rocks in the Eastern Quartz-phyric sequence in the northern MRV. To an extent, this correlation has justified exploration being focussed in the west of the current licence area to the detriment of the east. The geology is not yet clear enough to make these conclusions. Both quartz- and feldspar-phyric rocks are abundant throughout the sequence. Some rocks of apparently rhyolitic appearance in the east were also originally of more intermediate composition but altered after deposition (Wallace, Aberfoyle, 91/3320, p334).

As well as quartz, sericite and/or chlorite alteration is also common and can be pervasive.

The Waterloo Creek Group unconformably overlies the volcanics and comprises a unit of felsic derived volcanoclastics, overlain by a unit of black pyritic shale with minor horizons of micaceous siltstone. The Waterloo Creek Group has been correlated with the Tyndall group further north.

Ordovician Owen Conglomerate and sandstone conformably overlies the Waterloo Creek Group.

The Copper Creek fault is a major north-south fault in the west of the licence area. West of this fault are the Western Epiclastics (including mafic volcanics). These rocks are possible correlates of the Mainwaring River Group further to the west.

Three granitoid bodies intrude the MRV at Elliott Bay; the Low Rocky Point granite, the Little Rocky River granite and the Stoney Creek porphyritic granite. The Low Rocky Point granite is a composite intrusion consisting of pink granite, cream adamellite and coarse porphyritic granite. The Stoney Creek body comprises granite porphyry with feldspar, quartz and biotite phenocrysts in an intensely sericitised and cleaved matrix. The Little Rocky River granite is also a composite intrusion consisting of massive granite porphyry and strongly foliated medium – grained quartz feldspar porphyry.

The relative timing of the intrusions and deformation events is not known. There is, however, fairly good consensus that the granitoids are more or less synvolcanic i.e. Cambrian and predate Devonian deformation.

#### ***Mineralisation types present in the southern MRV***

The search for metals in the Elliott Bay area has focussed on VHMS-style massive sulphide. However, a number of different types and styles of mineralisation exist.

Au mineralisation occurs as:

- High grade in silicified structures – possibly 'Henty-style';
- Low grade in VHMS deposits, eg at Wart Hill (V19);
- Associated with chlorite-pyrite alteration, overprinting quartz-pyrite-tourmaline alteration zones at North Lewis (V12);
- Quartz- gossans associated with magnetite-chlorite alteration at granite margins, eg the Low Rocky Point granite;
- Vein style mineralisation in coarse pyroclastics, eg Sassy Creek (V24);
- In Tertiary gravels.

Base metal sulphide mineralisation as:

- VHMS massive sulphide style, eg Wart Hill (V19);
- Vein style galena, sphalerite and arsenopyrite mineralisation along the Copper Creek fault eg. V31;
- Disseminated Pb – Zn – Ag mineralisation in volcanoclastics eg. Lewis River
- Postulated Besshi style, eg Mainwaring Group prospects

Lead isotope work has recognised mineralisation as early Cambrian but with some Devonian age remobilisation (eg Sassy Creek, V24).

## **7. EXPLORATION HISTORY**

The region has been significantly under-explored in comparison with the much better known northern section of the volcanic belt. There is extensive metal anomalism in regional stream sediment surveys with more than 25 additional discrete mineral prospects identified to date (eg Figures 6.1 and 6.2).

There has been a low density of drilling throughout the licence area and little modern drilling. Frontier Resources completed drilling at V19 (Wart Hill) and areas to the south and along strike to the east and north (Alderbarren; vicinity of V22-V34). These sites sit in the west of the Elliott bay licence and are not of direct interest to Paragon Resources.

Most historic drilling at prospects in the eastern licence area is shallow sub-soil test work only. Core drilling at prospects such as V12 and V2 aimed to test stratigraphic targets (VHMS models) but in both cases failed to adequately explain surface anomalism.

The SMRV Project area has not recorded any metal production to date. There is a small resource at Wart Hill (Table 5.1), encompassed by, but not included within EL18/2010. Wart Hill comprises 'rafts' of massive sulphide mineralisation from a probable nearby source but one that has yet to be discovered. This mineralisation may be at depth or have been eroded, but, regardless, clearly demonstrates the Elliott Bay area as a centre of mineralisation.

There is a significant amount of data available for the Elliott Bay area, including some detailed regional geological maps published by the Tasmanian government in the early 1990's. These data and maps have been produced and interpreted almost solely in context with a stratabound VHMS massive sulphide style of mineralisation in mind. There has been little if any work toward understanding the complex structural geology in the Elliott Bay area. A stratigraphy for the area also remains controversial and is a matter of debate throughout the company literature.

There is a long history of exploration at Elliott bay, with the area held under licence continuously since the early 1960's.

The Elliott Bay area saw minor prospecting in the period between 1890 and 1910 with old workings visible at Voyager 1 (V1) also known as Penders Prospect, Lewis River (V2), and V3 (Figures 6.1 and 6.2).

Exploration since has almost universally targeted stratabound deposits of similar style to those VHMS deposits known in the northern MRV.

In 1957 the L. E. E. joint venture held the first modern EL in Tasmania the "Gordon Concession" which covered a large area of southwest Tasmania. They undertook an airborne EM, magnetics and scintillometer survey and undertook inspection and some mapping and sampling of the old workings.

BHP explored the southwest of Tasmania from 1965 to 1975. They undertook airborne surveys as well as stream sediment geochemical sampling of the MRV and some soil geochemical sampling.

Geopeko (a division of Peko – Wallsend Operations) undertook an extensive exploration program in the area between 1976 and 1985 recognising the potential of this southern extension of the MRV. The work started collecting stream sediment geochemical samples, geological mapping and follow-up of regional EM and aeromagnetic anomalies. This work identified 35 prospects called Voyager (after the Voyager spacecraft), numbered V1 to V12 and V14 to V36. The prospects were identified by various methods as historical prospects and outcrops (V1, V2, V3, V12, V18 and V23), aeromagnetic anomalies (V5, V6, V7, V14, V15 and V17), airborne EM anomalies (V11, V21, V26 and V46), stream sediment geochemical anomalies (V8, V10, V24, V25, V27, V30, V31, and V35), soil geochemical anomalies (V28 and V29), favourable geology (V32, V33 and V35) and multidisciplinary anomalies (V4, V9, V14, V19, V20 and V29).

Further work included variously covering prospects with systematic gridding, soil geochemical sampling including C – horizon sampling (Figure 6), ground magnetics, VLF – EM and drilling. A total of 32 holes (3,573m) were drilled on 9 prospects. Between 1978 and 1981, drilling focussed on the prospectivity of the V2 (Lewis River), V3, V9, V12 (North Lewis) and V24 (Sassy Creek) /V30 (Pleiades) prospects. In 1981, regional geochemical sampling and follow up mapping resulted in the discovery of the V19 (Wart Hill) prospect where small zones of massive sulphide were discovered with highly anomalous rock chip geochemical sampling results. Trenching and drilling of this prospect was followed by more regional work (IP and C - horizon soil geochemical sampling) in the Mt Osmond syncline. This work led to the

identification of the V22, V29 (East Camp), V33 (Copper Creek and North Wart) and V34 (Aldebaran) anomalies. Subsequently V33 was drill tested.

Geopeko withdrew from the area in 1984 for a number of reasons, they had concluded that potential to locate 'an economic high-grade VHMS deposit' within 100m of surface was low, exploration projects were being rationalised Australia wide and they were unable to attract a joint venture partner on favourable terms.

Cyprus Gold Australia Corporation (Cyprus) acquired the exploration rights in 1985 and undertook exploration between 1985 and 1990 targeting VHMS style massive sulphide deposits and Au. After a complete review of the Geopeko work, Cyprus undertook a helicopter borne Dighem – EM and magnetic geophysical survey as well as additional C – horizon soil and rock chip geochemical sampling and geological mapping. Anomalous areas were followed up with priority on V12 (North Lewis), V24 (Sassy Creek), V29 (East Camp) and V19 (Wart Hill).

At North Lewis (V12) Cyprus drilled 5 diamond core holes (349.6 m). Follow up geochemical soil sampling at Sassy Creek (V24) led to a recommendation to drill, but this was not undertaken. Cyprus drilled 3 diamond core holes (409 m) at East Camp (V29). Cyprus also drilled 12 diamond core holes (1,962.3 m) at Wart Hill (V19). Down the hole EM was completed on the majority of the drill holes.

In 1989 – 1990 Cyprus joint ventured the area with Aberfoyle Resources Limited (Aberfoyle). They undertook an airborne QUESTEM geophysical survey covering a large part of the area. This survey identified 9 anomalies (EB1 – EB9) that warranted ground follow up. Ground EM and soil geochemical sampling was undertaken over some of the anomalies. Drilling was attempted at anomaly EB1, located adjacent to V3 prospect but its effectiveness was limited owing to difficult ground conditions. Further work was recommended at EB4 that had gossanous outcrops associated with it, only 600m along strike from North Lewis (V12) but was not undertaken. Aberfoyle also supported lead and sulphur isotopes work at the CSIRO and CODES (University of Tasmania).

Plutonic Operations Ltd (Plutonic) successfully tendered for the area in 1994 and carried out work from 1994 – 1995. Plutonic reviewed data and geologically mapped core and outcrop at V3, Wart Hill (V19) and East Camp (V29), reviewed various geophysical surveys and undertook a moving loop SROTEM and ground magnetic survey at Wart Hill (V19). They undertook a detailed geological re-evaluation of Wart Hill attempting to define vectors to mineralisation but decided not to undertake any further drilling at Wart Hill for massive sulphides although drilling targets on geophysical anomalies were recommended. Plutonic geologists recommended work in the Eastern Elliott Bay area at V12/Lewis River (Hermann, Plutonic, 96/3841), but given disappointing results for Wart Hill Plutonic decided to relinquish the tenement in 1996.

Macmin applied for an exploration license surrounding the Cyprus / Aberfoyle license in 1994. This was targeted on 3 geochemically anomalous areas; the margins of the Low Rocky Point granite, the Three Creeks and Upper Hudson River areas. Macmin undertook field reconnaissance and soil (auger samples) and pan concentrate geochemical sampling.

Exploration & Management Consultants Pty Ltd (EMC) successfully tendered for the exploration rights to the SMRV area after Plutonic relinquished it and undertook a review of all the past work. In 1998 they joint ventured the area with Fimiston Mining NL (Fimiston).

Fimiston conducted a review and reprocessing of geophysical data then drilled two diamond core drillholes (752 m). One hole was drilled at Wart Hill (V19) and the other was drilled 500m to the south towards the East Camp prospect targeted on anomalous geochemical analyses and geophysics. Fimiston withdrew from the area in 1999. EMC has since focussed on digitising the large body of technical data.

TasGold, subsequently Frontier Resources, held ground in the Elliott Bay region under several licences, including; EL20/2006 Lewis River, EL21/1999 Wanderer River and EL20/1996 Elliott Bay. EL 20/1996 still exists as an exclave within Paragons EL18/2010 and includes the Wart Hill and Sassy Creek prospects.

Frontier acquired the ground with the aim of following up on multiple prospects, including adopting a Henty-style model for exploring for Au, but ultimately focussed on looking for extensions to base metal mineralisation at Wart Hill. Exploration was focussed within the Wart Hill area and along strike to the east and north and included drilling and geophysical (IP) surveys.

In 2012, Frontier spun out its Tasmanian assets into Torque Mining. This included Wart Hill.

Exploration at Wart Hill has almost universally focussed attention away from the many other geochemical anomalies in the Elliott bay area. Au anomalism is widespread yet the sources of the Au in the eastern parts of the Elliott Bay licence area have not been satisfactorily explained. This Au is the target of work by the current tenement holder, Paragon Resources.

This report presents findings that show that Au in eastern Elliott Bay is not of a VHMS style as sought by previous workers but is instead associated with previously unmapped ductile faults and/or shear zones.

The style of mineralisation, age, tectonic setting, and association with VHMS mineralisation in eastern Elliott Bay are all consistent with a shear-zone model for Au mineralisation. Although of vastly different age, shear zone mineralisation is perhaps exemplified by goldfields style mineralisation in Western Australia, the largest deposit being the Super Pit at Kalgoorlie (>83Moz; for description of deposit styles and associations with other deposit types, see Groves 2003).

## **8. PARAGON RESOURCES: RESULTS OF WORK TO YEAR 3**

Work to date developed on the basis that past exploration (reviewed in Reed, 2011) in the Elliott Bay licence area had focussed almost solely on identifying sources of VHMS-style Pb-Zn-Ag -dominated mineralisation. By contrast, little thought had been given to explaining extensive Au anomalism evident in earlier regional stream sediment surveys.

Previous work by Paragon found that high Au values in historic stream sediment surveys were associated with an extensive zone of high strain and chlorite-sericite alteration in eastern Elliott Bay region. This continuous (ductile) zone of high strain crops out over a strike length of greater than 5km, but has not previously been documented on any regional geological map.

Free Au has been found in sheared and altered volcanic rocks upstream of stream sediment results yielding up to 688 g/t Au. These highly anomalous panned concentrate results were disregarded by previous explorers (without checking) as 'spurious'.

Paragon Resources has corroborated an association noted elsewhere in Australia between VHMS style mineralisation and shear-related Au. Much of the Elliott Bay licence area is anomalous in Au. However, a review of historic Lead isotope studies shows vein-style Au in the western parts of the licence to be of probable Devonian age, not Cambrian age mineralisation being sought by Paragon. Devonian age mineralisation at Elliott Bay is unlikely to yield a deposit of economic size and so this ground is to be relinquished.

Results of exploration to date are extremely positive, highlighting flaws in earlier exploration models and interpretations of exploration data, but reinforcing the value of existing data in context of a better understanding of the geology and setting of Au-related mineralisation.

### Prospect based exploration activities

#### *Discovery Creek Shear Zone*

The Discovery Creek Shear Zone (DCSZ) was originally targeted on the basis of significant Au anomalism in panned concentrates (up to 688 g/t Au), a weak aeromagnetic linear in WTRMP data and sericite-pyrite alteration shown on Geopeko maps. South- southeast-plunging stretching lineation's are also shown in the vicinity of the target on Mount read Volcanic regional geological maps.

The DCSZ is a newly identified structure or structural corridor. It was not documented prior to Year 2 work by Paragon geologists and does not appear on regional geological maps.

The DCSZ remains a priority target area for Paragon. The importance of Year 2 mapping of the DCSZ structure and panning of Au in nearby streams has been strengthened as a result of laboratory analysis of rock chips (see below). Some of these rock chips were observed in field to contain free Au.

The DCSZ was observed at a number of locations over a north-south strike length of about 6km from about 385500mE 5247000mN (GDA).

The DCSZ is not a brittle fault. There is no discrete planar structure in outcrop that can be labelled as the DCSZ. Rather, the DCSZ east of the Hudson River was observed as a steeply west -dipping zone of at least 300m wide comprising progressively strong to intense but variably sericite-chlorite-(pyrite) alteration, fine laminated mylonite with tails to remnant quartz (probably phenocrysts), and a prominent and consistently steeply southwest-plunging stretching lineation. These features are beautifully exposed in the Hudson River in the vicinity of 385000mE, 5250500mN (Figure 8.1)

Field-checking of sites along the Discovery Creek structure was accompanied by panning for Au in streams draining zones of high strain. Panning was not for the purpose of collecting samples, but rather to;

- a) confirm the presence of Au in panned concentrates, and
- b) collect enough grains to observe Au grain morphology and infer a distance from source.

All checked streams produced very fine Au (<0.5mm diameter grains; Figure 8.2), along with varying quantities of dark heavy minerals (ilmenite, rutile, cassiterite with subordinate sphalerite and galena), fine-grained zircon and a fine-grained elongate rose coloured mineral (possibly corundum?).

Of the approximately 10 sites panned, grain counts (in pan) varied between about 2 and 15 grains per 400 grams of sediment panned.

Au varied from sub-angular and flaky to angular (wiry), with a maximum size of about 0.5mm (Figure 8.3). Studies of alluvial Au from around the world (Townley, 2003) indicate that a distance from a source can be estimated from the extent to which an Au grain has been rounded and 'beaten' during transport. Only a small sample size has been collected from the vicinity of the Discover Creek Shear Zone at Elliott Bay (~10). However, the sub-angular grain morphology consistently indicates a distance to source of less than about 300m. This distance is consistent with the panned concentrate results of the early 1990's (Aberfoyle) being distributed in a fairly tight linear corridor approximately coinciding with the presence of high strain rocks and associated aeromagnetic feature(s) in WTRMP data.

The margins of the DCSZ are not clear. The western margin of the DCSZ is characterised by a progressive increase in strain state and intensity of sericite and chlorite alteration in volcanoclastics. An traverse from the Hudson River east up Discovery Creek (366000mE, 5252500mN) attempted to map the eastern margin of the DCSZ but was cut-short after about 600m by the thick vegetation.

The intersection of Discovery Creek with the Hudson River coincides with the 'mapped' western margin of the Elliott Bay porphyry on regional geological maps. These maps are incorrect and do little justice to the complexity of the area and/or contact. Rather, the geology east of the Hudson River is characterised by alternating assemblages of variably altered, mineralised (including free Au; see below) and deformed intercalations of granite, feldspar-phyric diorite (~55% SiO<sub>2</sub>), quartz-porphyry, volcanoclastic rocks and graphitic schist.

The eastern-most rocks encountered were not porphyry but volcanoclastic. Similarly feldspar-rich porphyry-like (but almost mafic) diorite rock extends well west of the mapped contact (Figures 8.4 and 8.5).

Free Au was observed insitu in deformed quartz-sericite-altered rocks from near the intersection of Discovery Creek with the Hudson River. The presence of free Au at this location is consistent with historic panned concentrates samples (Aberfoyle) yielding 456 and 688 g/t Au. Microscopic examination using a specially purchased Leica S8 stereozoom microscope revealed the Au to be in fine veinlets and/or clots accompanied by chlorite, pyrite and possible chalcocopyrite (Figure 8.6).

Assay results of rock chips collected this last year contain Au at levels which can be considered anomalous to highly anomalous. Background levels of Au estimated at about 10ppb compare to Au results up to 160 grams per tonne (g/t) from rocks along Discovery Creek.

Discovery Creek has been highlighted to have high Au values with little other common associated elements. The V12 prospect has high Au, Cu, Bi and As, whereas V2 has elevated Au, Cu and As as well as very high levels of Bi and Mn. These results are summarised in table 8.1 and presented in detail in an appendix to this report.

The DCSZ is a priority target for Paragon. Work planned for the 2013/14 field season includes drilling, mapping, rock and stream sediment sampling, and IP. The IP will aim to identify discrete structures that may be related to Au mineralisation at surface. Survey lines will extend over several kilometres from west of the Hudson River east to the Proterozoic/Palaeozoic contact.

One rock chip from Discovery Creek (sample 129935) has a result of 160 g/t Au, with two other samples 129929 and 129931, around 150m apart, grade 20 g/t and 29 g/t Au respectively. Visible Au has been identified in rocks in the field as well as in panned concentrates. The eastern extent of the anomalous zone of Au mineralisation has not yet been determined.

It is intended that the following years program will follow up this anomalous trend, additional mapping, rock chips and stream sampling of the area is of up most priority for the future development of this project.

Sample location	Sample No.	GpsE MGA	GpsN MGA	Notes	Au ppm	As ppm	Bi ppm	Mo ppm	Pb ppm	Zn ppm	Cu ppm	Ag ppm	W ppm	Mn ppm
Discovery Creek	129929	385878	5252590	Very chlorite altered quartz-feldspar clastic (?). Strongly foliated. Sulphide with chlorite. Possible free Au. Foliation 86-255. Fracturing or compositional layering trending 120-300 (possible cross-faulting)	20	17.4	7.5	0.61	514	377	39.9		1.5	1060
Discovery Creek	129931	386018	5252612	Abundant grey rounded to red to yellow resinous cleaved mineral in heavies. Rock here is crystal-rich sandstone, variably to strongly foliated, silicified with chlorite and pyrite.	29	9.3	1.3	1.24	1260	444	71.9		2.6	1060
Discovery Creek	129930	385960	5252610	Strong foliation in very chlorite-pyrite altered clastic. Segregation banding (?) with southward plunging stretching lineation.	<0.2	6.8	0.77	0.92	279	99.6	55.3	0.6	0.17	784
DC Porphyry	129932	386026	5252621	Crystal-rich rock, possibly porphyry contact. Equigranular, moderately foliated. Chlorite overprinted by Kspar alteration (first indications of Kspar in system - hooting up). Biotite. Lack of rounded quartz so probable clastic (requires confirmation).		6.8	1.49	1	44	83			1	
DC Porphyry	129933A	386130	5252610	Highly strained (sheared) crystal-rich, strongly chlorite altered with chlorite in alteration and as tails to quartz and biotite (possibly hornblende. Possibly highly strained porphyry but more like very altered recrystallised volcanoclastic sandstone.		0.9	0.15	<1	52	77			1	
Discovery Creek	129935	385878	5252590	As per 129929	160	3.8	1.36	0.61	262	272	25.1		1.2	1380

Table 8.1 Basic Assay results for DCSZ rock chips of 2012 field program, locations and field notes provided. Detailed assay in appendix.

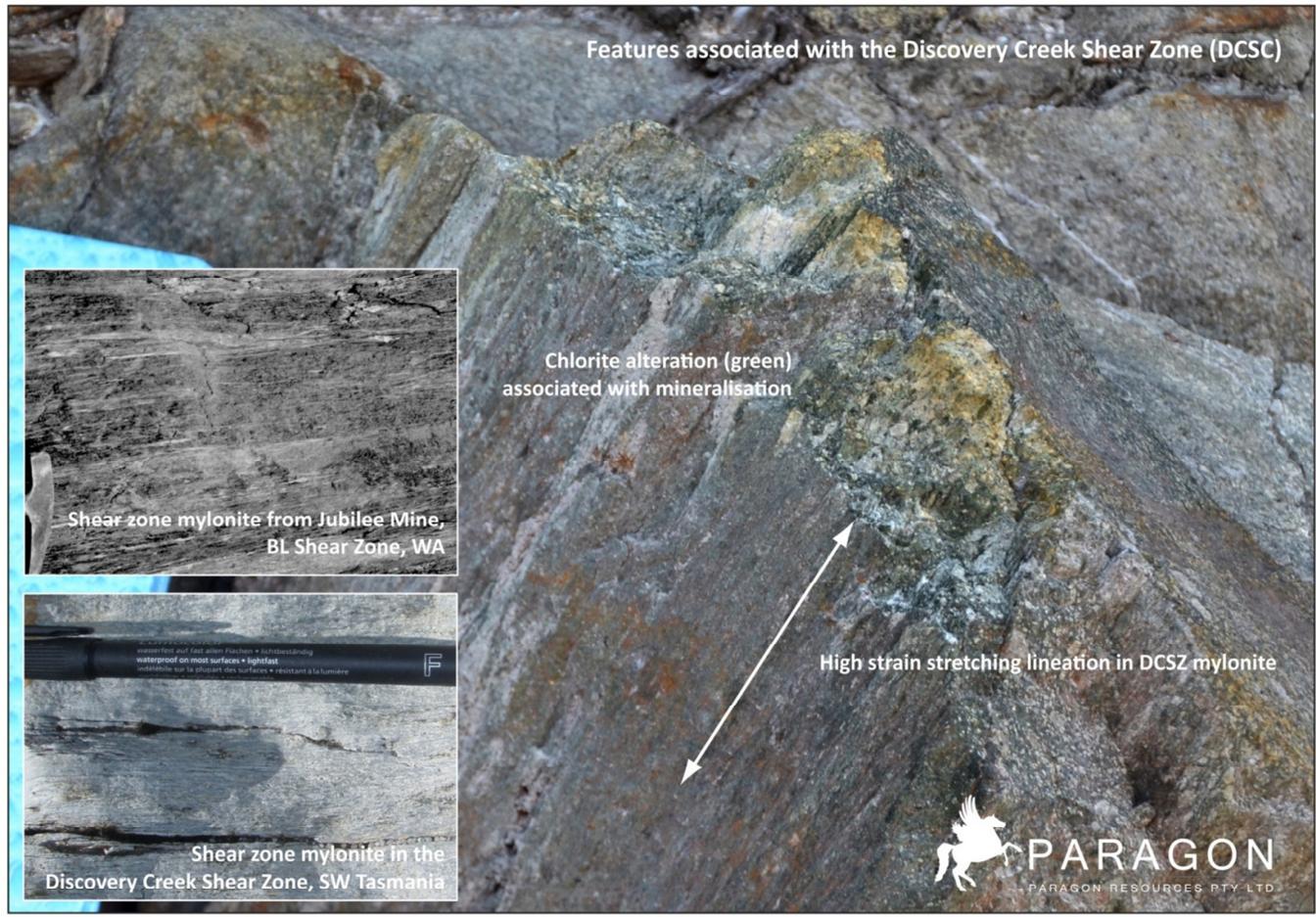
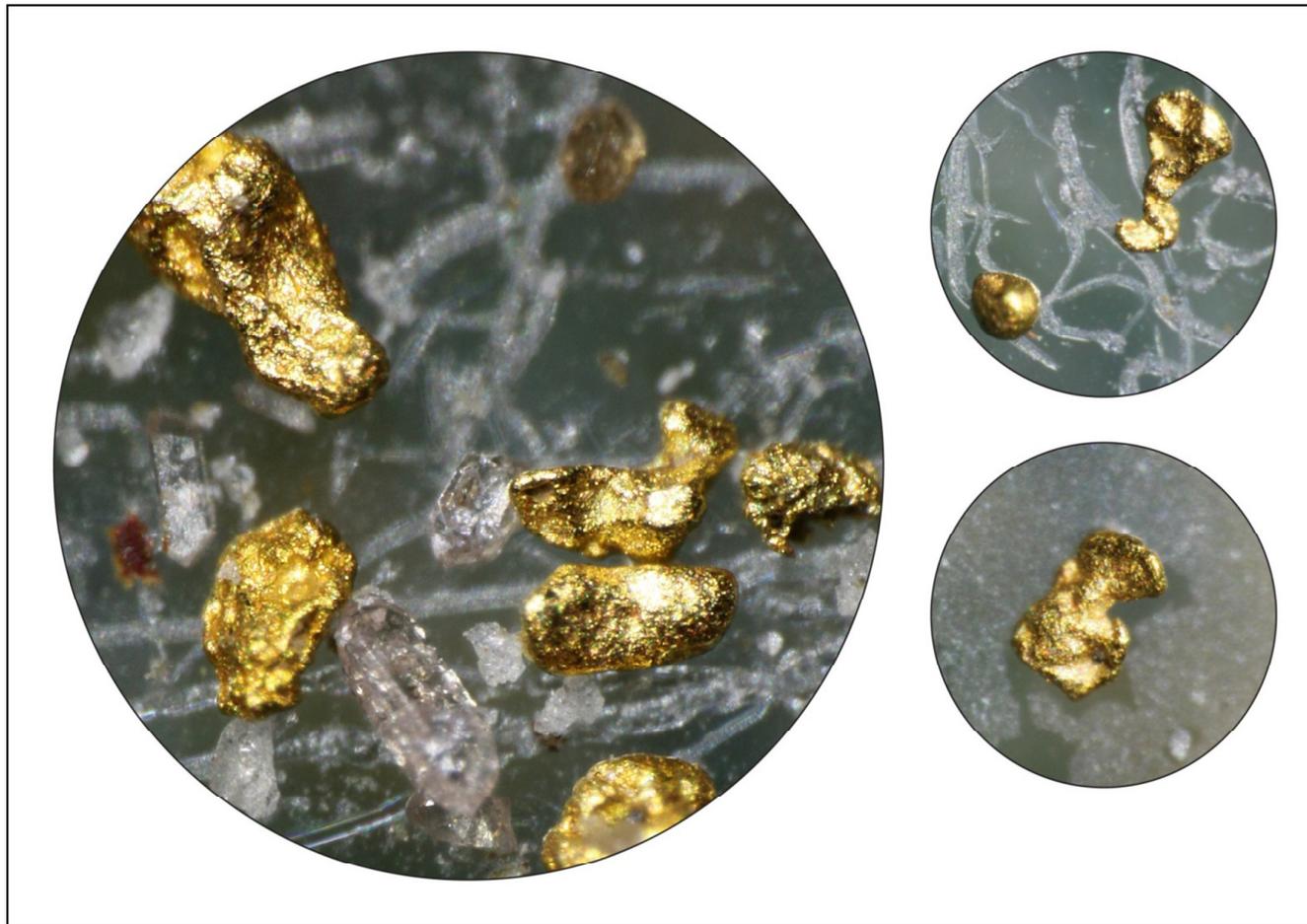


Figure 8.1. A photograph of sericite- and chlorite-altered volcanoclastic rocks from the Hudson River in eastern Elliott Bay. The rocks display a prominent stretching lineation plunging steeply SW in the steeply west-dipping foliation. Fine-grained mylonite is evident in work stream rock, appearing almost identical to similar mylonite's in Au mineralised shear zones in Western Australian goldfields.



*Figure 8.2. Au grains from the vicinity of the Discovery Creek Shear Zone. The Au is typically fine (<0.5mm) and sub-angular with re-entrants / embayments indicating a proximal source. The shape of the Au is inconsistent with secondary transport and deposition in Tertiary gravels as has been proposed in the past.*



Figure 8.3. Studies of alluvial Au from around the world (Townley, 2003) indicate that a distance from a source can be estimated from the extent to which a Au grain has been rounded and 'beaten' during transport. Only a small sample size has been collected from the vicinity of the Discover Creek Shear Zone at Elliott Bay (~10). However, the sub-angular grain morphology consistently indicates a distance to source of less than about 300m. This distance is consistent with the panned concentrate results of the early 1990's (Aberfoyle) being distributed in a fairly tight linear corridor approximately coinciding with the presence of high strain rocks and the aeromagnetic linear in WTRMP data.



Figure 8.4. Feldspar-phyric rocks from near Discovery Creek in eastern Elliott Bay. The geology is mapped as quartz porphyry and overlying quartz-rich volcanics. In reality, it comprises mixed felsic to dioritic (almost mafic; ~55% SiO<sub>2</sub>) intrusives and volcanoclastic rocks that are variably deformed, interleaved, mineralised and altered.



Figure 8.5. Variably deformed quartz-quartz porphyry and/or Cambrian granite. Coherent / competent intervals of undeformed rock appear enclosed within highly strained granite, porphyry and/or quartz- and feldspar-phyric volcanoclastic sediments.



*Figure 8.6 High-magnification photograph of Au on the surface of an exposed fracture in chlorite-sericite-altered rock from Discovery Creek (photograph taken at 80x magnification using Leica S8 Stereozoom microscope and Canon EOS 5D 22Mp camera). The Au was not distributed through the rock but was rather concentrated within an irregular fracture in highly sheared chlorite-sericite-pyrite altered volcaniclastic rock.*

#### *V12 / Lewis River North*

The V12 or Lewis River Prospect was discovered by Geopeko between 1976 and 1984 on the back of anomalous stream sediment data in tributaries flowing into the Lewis River. It was further explored by Cyprus/Aberfoyle between about 1985 and 1990.

Soils and rock chips at surface are up to 265 g/t Au, 0.36% Cu, 440 g/t Ag, 0.7% Zn and 0.68 % Pb (Wallace, Aberfoyle, 91/3320, p358; Torrey & Polltock, Cyprus, 88/2853, p35).

Results of rock chips collected this last season reinforce V12 as being a target for Au mineralisation. Thompson (1999) describes similar associated metal suites linked to Intrusion-Related Au Systems. This includes a combination of elevated levels of Bi, W, As, Cu, Sb and Te. These elements coincided with samples taken (table 8.2). results have also found that quartz tourmaline veins at V12 (sample 129923) are barren, with dissimilar geochemical associations, these veins have been identified in field to pre-exist the mineralising vein system.

V12 continues to be a very prospective area, the system may be much larger than historically given credit for, and efforts will extend mapping and rock chips to the north.

Sample location	Sample No.	GpsE MGA	GpsN MGA	Notes	Au (ppm)	As (ppm)	Bi (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)	Cu (ppm)	Ag (ppm)	W (ppm)	Mn (ppm)
V12	129936	384866	5246484	Chlorite-rich, strongly foliated sheared gossanous volcanoclastic. Tails to quartz.	38.6	12500	592	4.52	6280	2240	27900		50.7	683
V12	129937	384866	5246484	Chlorite-rich, strongly foliated sheared gossanous volcanoclastic. Tails to quartz.	0.83	2840	244	4.63	2550	841	2270		3.8	252
V12	129938	384866	5246484	Chlorite-rich, strongly foliated sheared gossanous volcanoclastic. Tails to quartz.	17.4	6510	174	7.28	3840	810	1490		16.7	454
Spur at southern end of V12	129923	384770	5246260	Gossanous selvedge to quartz- plus tourmaline (?) -veins	<0.2	2920	22.3	3.76	604	1010	571	7.68	3.09	386
V12	129940	384866	5246420	Sheared volcanoclastic with cross-cutting ferruginous veins at 90 degrees to foliation.	16.8	6670	113	11.35	2840	867	517		27.1	363
V12	129941	384828	5246424	Chlorite altered sulphidic pod associated with zone of stretching lineation (53-216)	6.43	89.8	4.66	0.26	212	268	401		3.5	1970

Table 8.2 Basic Assay results for V12 rock chips of 2012 field program, locations and field notes provided. Detailed assay in appendix.

Au mineralisation at V12 is considered to have post-dated intrusion of what appears to be a stratigraphically underlying porphyritic rock to the southeast (Elliott Bay Porphyry outlier). The proximal porphyry will have a large physical influence over the prospect. Although mineralisation postdates the intrusion remobilised fluids from these events could be playing a large role in the mineralogy of the prospect.

Past exploration has focused solely on a stratabound model for massive sulphide mineralisation and has not considered the coincidence of Cambrian faulting at the north-eastern end of the prospect with peak metal values.

Ongoing work at V12 this year includes mapping and stream sediment sampling, as well as reprocessing and inversion of existing good quality IP data. The aim is to refine a 3D target for follow up drilling.

The position of the high south-trending Discovery Creek Shear Zone north of V12 and/or how it interacts with possible feeder structures at or near V12 remains uncertain. Determining the location of the DCSZ at V12 seems important given the proximity to each other and apparent association of both the DCSZ and V12 with Au mineralisation.

#### *V2 / Lewis River South*

The V2 prospect is located on the south side of the Lewis River, about 1km southwest and along the projected strike from V12. Like V12, the V2 prospect was initially explored by Geopeko between 1975 and 1984 for statabound VHMS-style mineralisation.

Rock chips taken have reinforced V2 as being a target for Au mineralisation similar to V12 elevations in Bi, W, As, Cu, and Sb (excluding Te). The highest Au samples come from the Gossanous zone that extends around 100m in strike length. Mullock samples typically showing lower anomalism, although heavy Mn levels of up to 7.4%. It should be noted that samples obtained contain Bi levels that are of economic consideration. A mineral also associated with the Henty mine.

#### *Workings 1km south of V2*

Geochemically V2 and the workings 1km south are very similar elevations in Cu, Pb, Zn and Ag. Unlike V2, samples of economic Au have yet to be identified. Two samples show to be of above detection limit at 5% this area should be sampled again and appropriate assay methods used.

Sample location	Sample No.	GpsE MGA	GpsN MGA	Notes	Au ppm	As ppm	Bi ppm	Mo ppm	Pb ppm	Zn ppm	Cu ppm	Ag ppm	W ppm	Mn ppm
V2 mullock	129942	384317	5245704	Foliated fine-grained volcanoclastic sandstone. Spaced small (to 5cm) bedding parallel veins or breccia zones	1.93	115.5	253	0.85	832	192	727		1.1	21100
V2 mullock	129943	384317	5245704	As per 129942	0.65	193	61.5	0.38	92.3	55	38.3		0.9	13850
V2 pit	129946	384266	5245714	Pits in 100m long by 6-10m wide (true width) gossan zone. Py, cpy (weathering to malachite and azurite) abundant. Zone strikes 140 degrees and is possibly related to swing in strike of nearby foliation. Gossan as pods plunge 25 to 120 within mineralised zone trending 140 degrees.	10.8	526	1170	0.21	519	233	6530		0.4	46200
V2 pit	129944	384279	5245694	Gossan zone. Py, cpy (weathering to malachite and azurite) abundant.	16.4	359	372	0.18	369	316	2970		0.3	74200
V2 pit	129945	384266	5245714	As per 129946	4.43	1420	2750	0.19	1010	142	6250		0.3	51100
Old working 1km south of V2	129947	384437	5244623	Old workings (minor). Pit in chlorite schist. Very strong chg. Chlorite mineralisation / alteration associated with minor cpy and py. Spaced crenulation of primary foliation may indicate a secondary structure nearby.	0.2	193.5	1990	0.44	248	888	5110	4.29	0.23	>5000 0
As per 129947	129948	384437	5244623	As per 129947	0.5	516	680	0.46	181	462	2560	5.2	0.6	>5000 0

Table 8.3 Basic Assay results for V2 rock chips of 2012 field program, locations and field notes provided. Detailed assay in appendix.

Mineralisation is evident throughout the V2 area as irregular and discontinuous silica- and oxide-rich (after sulphide) veins. Veins are typically less than 5cm wide, laterally discontinuous, concordant and may show a brecciated appearance (possibly a surficial effect). Mineralisation is localised with only proximal oxide staining of nearby rocks (Figure 8.8).



*Figure 8.7. Alistair Reed examining mineralised mullock adjacent to a small water-filled shaft of unknown depth at V2.*



*Figure 8.8. Iron staining in rocks near concordant but laterally discontinuous oxide veins at V2. Rocks are well exposed and soil development is poor.*

Gossanous mineralisation at V2 is more interesting and is the subject of early prospecting (Figures 8.7, 8.9, 8.10, 8.11). Mineralisation occupies a steeply dipping linear zone. This zone strikes 140 degrees, and is about 100m long by a true width of about 6-10m. The strike of this mineralised zone is clearly discordant to the stratigraphy and is of the same orientation as northwest-striking faults inferred to intersect the V12 prospect.

It has been identified that the gossanous material is very prospective for Au, rock chips shown in figure 8.10 assaying up to 4.4 g/t to 16.4 g/t Au.

Work planned for V2 includes reprocessing and inverting historic IP data (known to be of good quality) with the potential for an additional IP line to check below 100m (the limit of the historic survey). One drill hole is planned but contingent on completing work at Discovery Creek and on the results of geophysics.

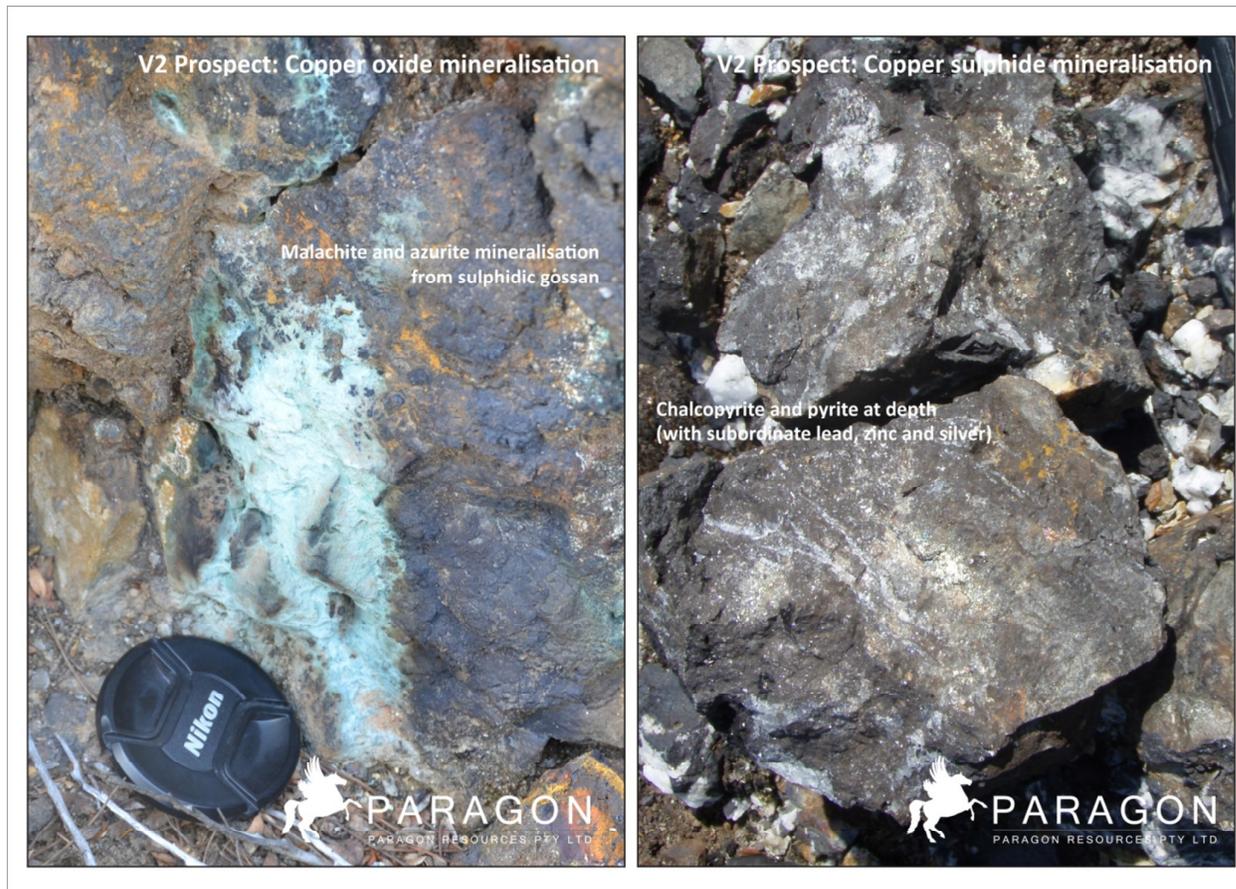


Figure 8.9. Copper carbonate (malachite/azurite) and copper sulphide (chalcopyrite) mineralisation at V2.

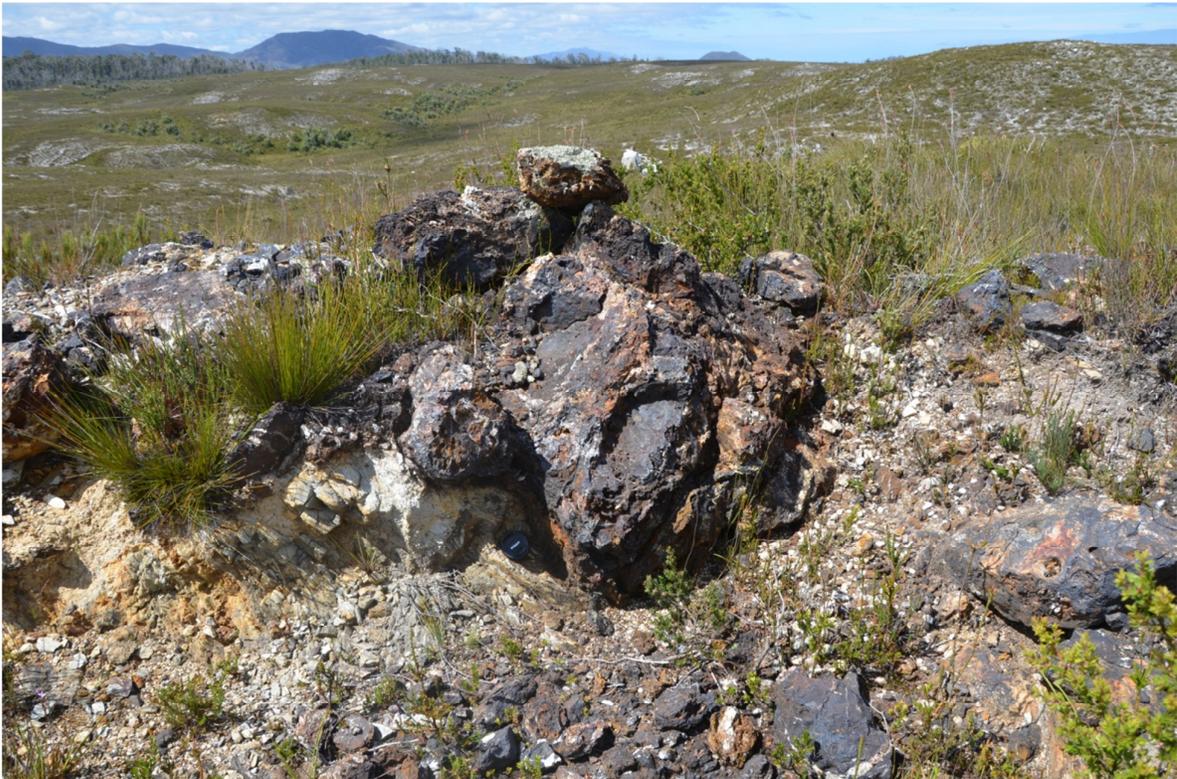


Figure 8.10. Open countryside of the V2 prospect at Elliott Bay showing gossanous shoot-like outcrop in a small break-away.



Figure 8.11. A closer view of surface mineralisation at V2 showing shallow southeast plunge to mineralised lenses. Volcanic rocks enclosing the lenses are strongly foliated and probably sheared.

*The 'bulls-eye' anomaly.*

This target was first identified from WTRMP aeromagnetic data and subsequently correlated with earlier (but as yet unexplained) observations from surface of chlorite alteration and metal anomalism (Geopeko).

A review of historical results has shown a minor Cu anomaly over the bullseye in historic data. The theorised depth of the Bulls Eye anomaly is around 200m.

The bulls-eye remains a valid target and multiple IP survey lines exist over or near the bullseye anomaly. This data is thought by the company geologist Rod Campbell to be of good quality. The device used, a Scintrex IPR-8 receiver is a reliable machine, there is also good transfer of charge to the ground. The limitations are that it has only been designed to 100m depth. To get the most out of the historical data it will be reprocessed into an inversion. Until reinterpretation of the IP survey and recommendations from a Geophysicist, the drill program cannot be Designed. It is possible that additional IP lines may also be collected over the bulls-eye this season.

*V9 Cu- Au Prospect literature review*

Over the V9 prospect the Geopeko exploration company conducted multiple field seasons, and have produced 2 large C horizon soil grids (Strickland 1978 and Large 1981), multiple IP surveys (Strickland 1978 and Wilson et al 1981), a Gravity survey (Wilson et al 1982), a Vtem 3 survey (Herrmann 1985) and 3 Diamond drill holes (1980,81 and 82). Although a significant Cu-Au target, for many years a majority of the work has not been focused on Au. The lithology surrounding V9 comprises a large intrusive Cambrian granite with massive rhyolite quartz feldspar porphyritic lava units and intercalated pyroclastics (Figure 8.12).

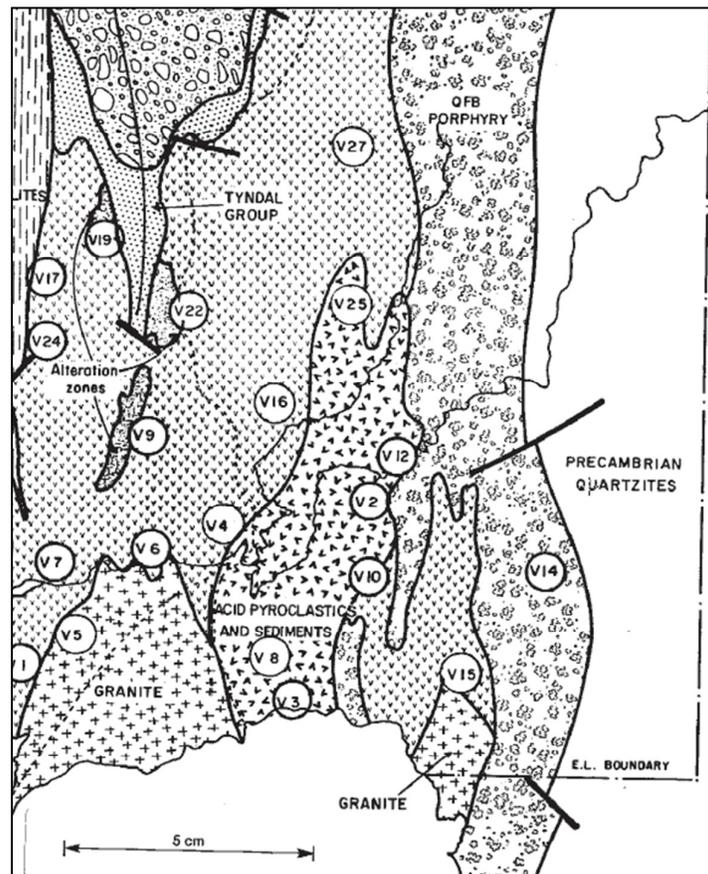


Figure 8.12 location of the V9 Prospect (large 1980)

Large, in 1981 rated V9 as having the highest exploration potential (followed by V24 and V19) as it has multiple attributes of hosting a Cu-Au style deposit. Geopeko mapped outcropping areas of pyrite-sericite and magnetite-chlorite alteration within Felsic volcanic and volcanoclastic units, making V9 a favourable host for a Cu-Au deposit (Large, 1981). V9 is documented to show strong cleavage development and faulting within alteration zones depicting a structurally complex history. And the presence of a hydrothermal fluid source from the large and very strong magnetic anomaly is indicated to be an intrusive magnetite body.

C horizon soil samples and rock chips have been taken over the area. samples were assayed for Cu, Pb Zn, Ag, Mn, Fe, Ba and Sn (Large, 1981), A significant Cu soil anomaly at the Northern portion of the grid, striking WNW over 500m across the grid with values ranging from 200ppm to a peak of 2400ppm (Figure 8.13). Rock chips taken by Anon (BHP) in 1972 peaked at 8000ppm Cu in "Barrel creek".

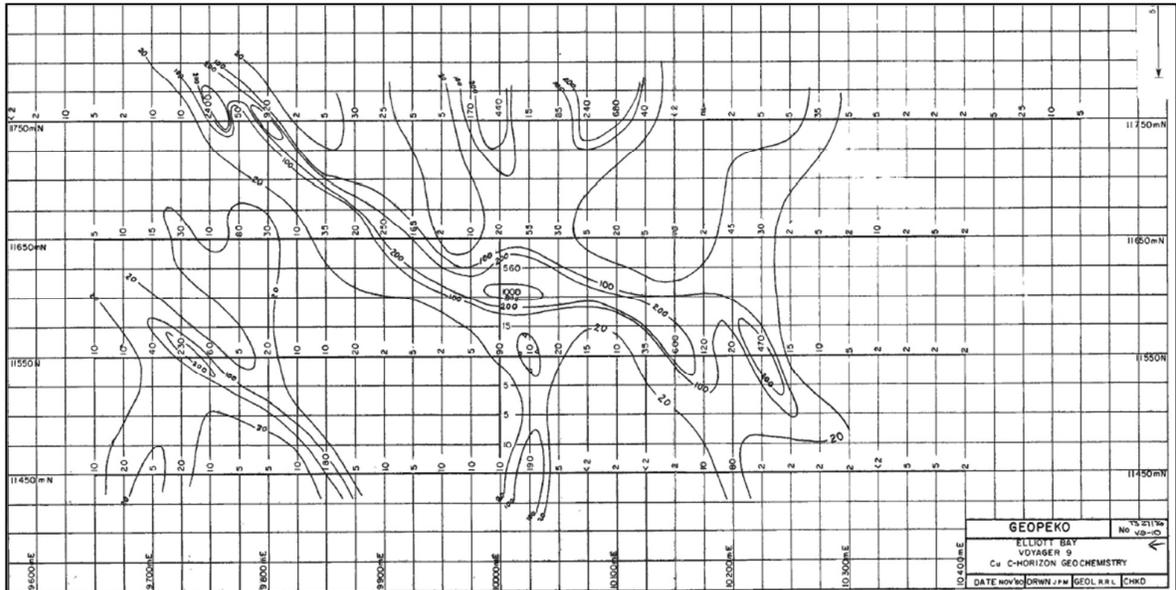


Figure 8.13 WNW striking Cu soil anomaly, northern V9.

During the 1979-1980 camp season, V9/1 was drilled for 60m in AQ. Its target was the peak of magnetic anomaly. The diamond hole successfully intersected magnetite veins explaining the magnetic response. Later in 1982 the anomaly would be complemented with a gravity survey and a geometric modelling study. It was determined by Wilson 1982 that the main magnetic anomaly is correlated with a coincident gravity high. The unit is modelled to be around 500m below the surface and constitutes a large magnetic-gravity target comprising of a theorized 20Vol% magnetite.

V9 has been described by Mudge 1978 to have large areas of outcrop across the prospect, with minor button grass and peat cover. Detailed mapping by Large in 1981 identified a considerably long alteration zone of 3km long by 200 to 600m wide running north south within rhyolite to dacite pyroclastics and lavas (Figure 8.14). The alteration assemblage varies from chlorite-magnetite-pyrite in the south to sericite-pyrite in the north. Sizable pods of 1-10% disseminated pyrite occur throughout the prospect. The alteration styles and stratigraphic setting in the area are similar to those at Mt. Lyell: disseminated Cu-Au mineralization (Large, 1981).

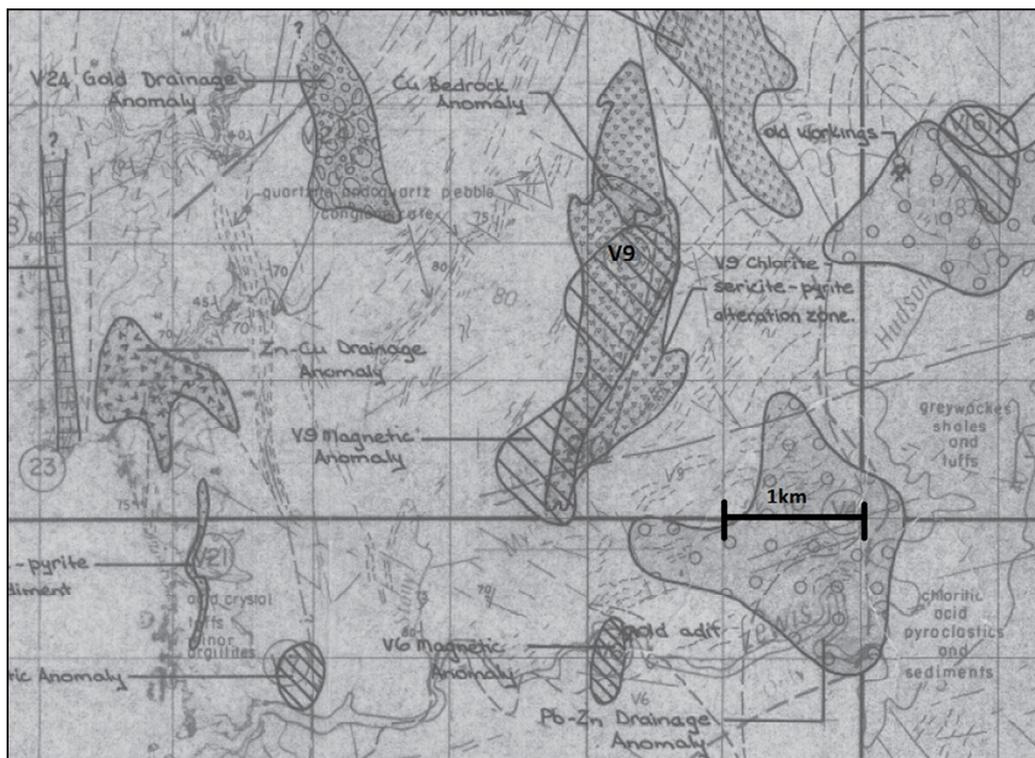


Figure 8.14, from Large et al 1980 V9 Mineralisation and major anomalies map.

V9/2 drilled for 232m during the season of 1980-1981, the second drill hole targeted the linear WNW striking Cu soil anomaly and IP zone. Cu anomalism was identified and fluctuates in a regular cyclic pattern throughout the hole peaking at 1650ppm @ 186m. Interestingly this drill hole has assay results of sub economic Au, mineralisation has been logged as being within two separate lithology's, A flow banded Rhyolite and a volcanoclastic tuff.

The very fine grained siliceous flow banded rhyolite has pink and green bands, possibly sericite/chlorite and hematite alteration. The flow bands are cut by siderite veins and a chlorite + magnetite + Chalcopyrite + pyrite veinlets with red jasperoidal veins @ 90 degrees to L.C.A, Mineralisation peaks at 2g/t Au over this interval. From 171m the average Au grade is 2.42g/t for 12m, and is logged as a lapilli crystal tuff to chloritic crystal tuff. The lapilli crystal tuff has reddish (hematite) alteration, carbonates in the form of minor siderite veins overlies a chloritic fine grained crystal tuff with 1% pyrite and alternating sericitic alteration. The alteration assemblages may represent the contact between oxidized and reduced hydrothermal fluids.

In 1982 Geopeko changed the exploration model at V9 to a strataform Pb-Zn model, aided with the new gravity survey, Wilson (1982) also describes a Cambrian granite stock mapped to the west of V9 and is hypothesized to be a part of a W-Au Skarn. The lower Rocky River Cambrian granitic unit is theorized by Wilson to be responsible for the huge magnetic response (Figure 8.15) at V9 as large magnetite dykes and veins as seen in diamond hole V9/2. During the season of 1981-82 Wilson drilled V9/3, a conductive IP target for 158.55m. This hole was drilled directly into a Dipole-Dipole IP anomaly to the north east of the main magnetic anomaly body. The anomaly was explained by a thick sequence of black pyritic shales, pyrrhotite bearing cherty siltstones-sandstones with inter-bedded quartz chlorite tuffs. The hole was assayed for Cu, Ag, Pb, Zn and Fe, no intervals of any significance occurred.

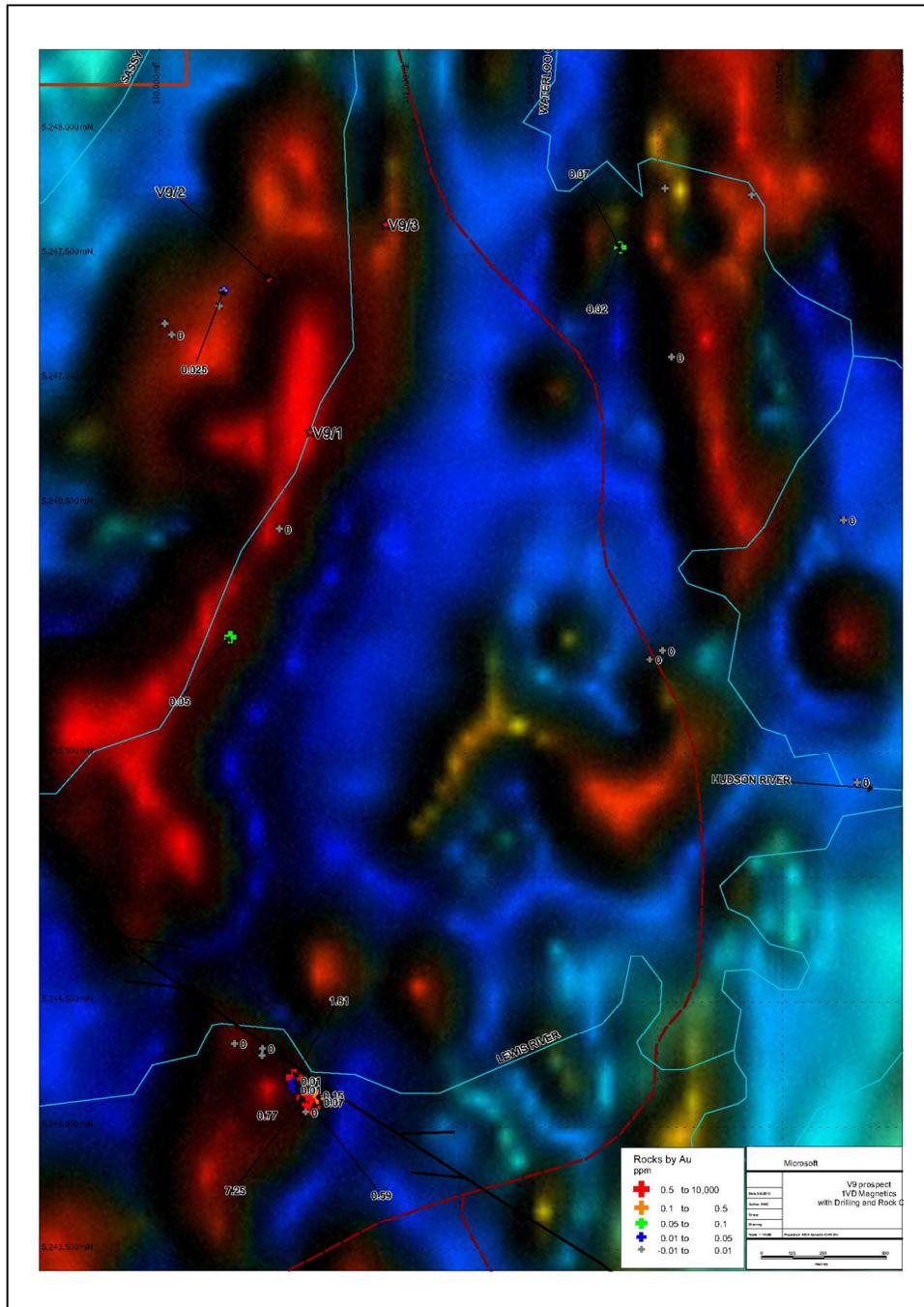


Figure 8.15: Drilling at the V9 prospect, Magnetic highs represent the fringes of the Cambrian Lower Rocky River Granite.

**Other work**

**Literature review (ongoing)**

Work by Paragon Resources in Year 1 of EL18/2010 included commencing a review of the extensive amount of information (>11Gb) spanning almost 50 years of exploration in the Elliott Bay area. This was an ongoing process throughout Year 2 and has continued throughout Year 3.

Review of these data is an ongoing process. New information comes to light which in turn necessitates revisiting reports previously reviewed.

A review of historical literature has identified that V2 and V12 including bulls eye (V10) have all had multiple geophysical surveys conducted over them over the years. The data collected is shallow but of good quality, the V10 surveys have been studied and no outstanding anomaly has been identified. Future plans are to re-interpret the historical information with modern digital processing techniques. An inversion of the data may display new targets; it is only after this we can find if the historical drill holes truly tested there V2 and V12 targets.

***Hylogger***

Holes have been picked with the intent to tie V2 V9 and V12 drill holes to similar VHMS alteration assemblages, information is yet to be received and consolidated into a reportable format and will be reported on next year.

***Field checking***

The DCSZ is confirmed as a valid exploration target for shear zone-hosted Au of Cambrian origin. Future work will aim to extend regional stream sediment surveys to the east to cover the remainder of the Cambrian sequence and parallel first-order structures. This should be accompanied by more detailed mapping of the DCSZ including the structural geology.

## **9. FUTURE WORK**

Future work is discussed in context with the specific areas of interest above. In summary, work for 2013/14 includes:

- Drilling at Discovery Creek and possibly at V2 and or the Bullseye prospect.
- Ongoing mapping, in particular structural mapping placing Au mineralisation in context with the DCSZ.
- New geophysics (IP or SAM) over the Discovery Creek prospect and possibly over the Bulls-eye and V2 prospects. The focus is Discovery Creek, the information obtained should be an additional tool for guiding hole direction and targeting shears.
- Extension of the regional stream sediment sampling program of Geopeko/Cyprus east to the Proterozoic/Palaeozoic contact
- Appraisal, reprocessing and inversion of existing geophysical data. A effort by the company will be to evolve historical prospects by modernising the historical geophysics including IP lines over bullseye, V2 and V12. This will help focus exploration efforts over the coming year.
- Hylogger results are to be consolidated and interoperated,
- Mapping and sampling of prospective areas proximal to planned drilling.

Funding for the above programs has been approved and a work program submitted to MRT in October 2013 for evaluation.

Expenditure for the 2013/14 year is expected to be in the order of \$800,000.

## **10. EXPENDITURE TO DATE**

This section details expenditure by Paragon Resources on EL18/2010. Minimum expenditure for the year as set by MRT \$55,000 actual expenditure was \$76,517.

*Quarter ended December 2012 (quarterly report submitted)*

Geology costs	Annual report preparation and review	\$15,000
General administration		\$1,500
Q4 total		\$16,500
Cumulative expenditure		<b>\$210,098</b>

*Quarter ended March 2013 (quarterly report submitted)*

Geology costs	Sample Submission, processing of results, Hylogger processing of results V9,V2,V12	\$16,500
General administration		\$1,650
Q1 total		\$18,150
Cumulative expenditure		<b>\$228,248</b>

*Quarter ended June 2013 (quarterly report submitted)*

Geology costs	Sample Submission, processing of results, Hylogger processing of results V9,V2,V12	\$9,300
Rental Fees	Helicopter Lease/Hire	\$5,000
General administration		\$1,400
Q2 total		\$15,700
Cumulative expenditure		<b>\$243,948</b>

*Quarter ended September 2013 (quarterly report submitted)*

Geology costs	Second site visit to plan drilling at V2 Bullseye and Discovery Creek prospects	\$7,900
Rental Fees	Helicopter Lease/Hire	\$6,000
General administration		\$1,390
Q2 total		\$15,290
Cumulative expenditure		<b>\$259,238</b>

*Quarter ended December 2013 (quarterly report not submitted – costs to date)*

Geology costs	planning, review of past work, field work and preparing work program for MRT	\$24,977
General administration		\$2,400
Q1 total		\$27,377
Cumulative expenditure		<b>\$286,615</b>

Total year 1 expenditure:	\$53,019
Total year 2 expenditure (minimum required by MRT shown):	\$140,579 (\$36,681)
Total year 3 expenditure (minimum Required by MRT shown):	\$76,517 (55,000)
<b>TOTAL EXPENDITURE TO DATE (Y1 + Y2 + Y3):</b>	<b>\$286,615</b>

## **11. CONCLUSION**

Work to date continues to support the Elliott bay area as being prospective for an economic Au deposit, with additional potential for Cu, Pb, Zn, Bi and Ag.

Assay results collected over the last year have been exceptional, up to 160 g/t Au from rocks here associated with the recently identified Discovery Creek Shear Zone.

Reprocessing of historic IP data has shown the data to be of good quality and suitable for inversion using modern technology. This data will be used to refine targeting over the V2, V12 and bulls-eye targets. New IP will be collected over Discovery Creek, and, depending on cost, over the V2 and bulls-eye targets. New data is not considered any better than the existing surveys but has the advantage of penetrating deeper.

The 2013/14 field seasons includes drilling, geophysics, geochemistry and geological mapping. Proposed expenditure is about \$800,000.

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### **13. METADATA**

Tenement holder: Paragon Resources Pty Ltd

Activities: Hylogging, Assay results, Field checking

Contractor to Paragon Resources: Metalstocks Australia Pty Ltd (Dr Alistair Reed), Schoer, Reed & Associates Pty Ltd.

Keywords: Elliott Bay, Mount Read Volcanics, VHMS, massive sulphide, gold, Henty, structural geology, shear zone, faulting, mylonite, V2 prospect, V12 prospect, geophysics. Aeromagnetic, Discovery Creek

### **14. STATEMENT OF EXPERIENCE**

This report has been prepared by Dr Alistair Reed, BSc (1st), PhD, Consulting Geologist who has had over 20 years' experience in exploring for base metals and Au systems. Dr Reed is a Member of the Australian Institute of Geoscientists (AIG) and is qualified to report under the Joint Ore Reserve Committee (JORC) and VALMIN Codes. Assisted by Rodrick Campbell, BSc consulting geologist with over 5 years' experience.

### **15. DISCALIMER**

The information used to prepare the report is drawn from reports prepared by previous tenement holders, consultants and MRT. I do not doubt the authenticity or substance of previous investigation reports, but have not carried out a total audit of the available information. The statements and opinions contained in this report are given in good faith.

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