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PASMINCO EXPLORATION

TULLAH EL 22/90

ANNUAL REPORT  
FOR THE PERIOD ENDING 19<sup>th</sup> SEPTEMBER 1999

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## SUMMARY

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Exploration activities undertaken on EL 22/90 Tullah during the 1998-99 reporting period were focused on geological mapping, partial leach geochemical sampling, diamond drilling and airborne electromagnetics. A review of existing drilling on the license has also been completed. Specific areas of focus and work completed include:

- Partial leach soil sampling, diamond drilling and geological mapping within the Bruce Creek Prospect area.
- Geological mapping and Airborne Electromagnetic Survey over the North Murchison Prospect area.
- Geological mapping over the East Stitt grid
- Compilation of historic drill hole data

No field based exploration was undertaken on Moxon Saddle EL6/98 during the reporting period.

## 1. INTRODUCTION

This report details exploration undertaken on Tullah EL 22/90, between September 1998 and September 1999. EL 22/90 now incorporates both Sterling River EL 24/91 and Mount Farrell EL 13/96 and covers an area of 70km<sup>2</sup> (Figure 1). In addition, this report incorporates the Moxon Saddle part of EL 6/98 (Queenstown), an area of just under 2km<sup>2</sup> which abuts EL22/90 to the south.

The Tullah license is located east of the township of Rosebery, in western Tasmania, and covers units of the Cambrian Mt Read Volcanics. It is centred on a 16km long section of the Henty Fault, the ground is well mineralised, with numerous showings and sub-economic deposits of base and precious metals (Figure 2).

The area has a long history of previous mining (mainly small-scale Pb-Ag) and is one of the more heavily explored parts of the Mt Read Volcanics. There have been more than one hundred and thirty (130) diamond and reverse circulation drill holes collared on the tenement at a range of geophysical, geochemical and geological targets. As well as several vintages of stream, soil and rock geochemistry, electrical geophysics (primarily IP & EM) and geological mapping. Most of the work has been concentrated along the Henty Fault while less accessible zones, such as the southern and eastern parts of the Sterling River and east of the Farrell Mines, have received minimal attention.

Between 1889 and 1973 several small Pb-Ag mines operated in the Tullah area. The largest and most successful of these were the New North Mt Farrell and North Mt Farrell mines, which were operated continuously between 1899 & 1973. Both mines were established on a series of narrow (1.6m average mining width) lead-silver-zinc lodes and veins within zones of structural disruption in the Farrell Slates. Ore grades in these deposits were modest (typically 8-12% Pb, 2% Zn and 300-500g/t Ag) and the mined tonnages low. The only other discoveries of any significance, which have been made on the tenement by previous exploration effort, are two small (<400,000t) arsenic/gold resources (Lakeside Prospect & Lorrigans Luck Prospect – formally Arsenic Resource). Both of these deposits straddle the Henty Fault and are concealed below glacial overburden. No significant base metal discoveries have been made.

Despite the intensity of past exploration efforts and the presence of numerous base metal prospects, mineral occurrences and historic mines which occur in the license area, it is a concern that no new base metal discoveries have been made. There is no shortage of “smoke” in the area and one can not help think that there may be larger deposits lurking within the tenement. The problem remains - how do we find them? Techniques employed by previous explorers, including Pasminco, perhaps with the exception of electrical geophysics (IP and EM) and drilling, have essentially been

restricted to looking for mineralisation (or associated alteration) within a depth range of 100-200m across the tenement. In most instances these techniques have been best suited to testing  $\leq 100\text{m}$  below surface, particularly in areas of thick glacial cover and in the vicinity of black shale horizons. Remaining potential for discovering significant economic mineralisation ( $>2\text{Mt}$ ) on the tenement appears to be within the 200 to 500m depth range. Pasmaenco's current exploration limit for economic targets in the Mt Read Belt is 500m for a stand-alone base metal deposit  $<10\text{Mt}$ .

The problem we are faced with however, is how do we effectively explore the 100-500m depth interval?

One approach Pasmaenco Exploration has embarked on is to utilise partial extraction geochemistry. Studies conducted in Australia and overseas have indicated that partial extraction geochemistry can potentially detect concealed mineralisation through thick transported overburden (including glacial deposits) and at significant depths of burial (eg  $\leq 500\text{m}$ ). To date Pasmaenco has completed partial leach orientation studies over several prospects in the Mt Read Belt, including the Rosebery mine. Results of this work have been very encouraging and significant success has been achieved on one project area using this approach. Perhaps one of the most encouraging aspects of Partial leach geochemistry is its cost effectiveness, particularly in covering large tracts of ground.

During 1998-99 exploration has been carried out in the Bruce Creek, East Stitt and North Murchison prospect areas. Exploration activities undertaken within these prospect areas were:

- Partial leach soil sampling, diamond drilling and geological mapping within the Bruce Creek Prospect.
- Geological mapping and Airborne Electromagnetic Survey over the North Murchison Prospect area.
- Geological mapping, soil geochemical sampling and geochemistry interpretation over the East Stitt grid.
- Compilation of historic drill hole data across the tenement.

No field based exploration was undertaken on Moxon Saddle EL6/98 during the reporting period.

## 2. TENURE

Tullah EL 22/90 covers an area of 70 km<sup>2</sup>, and now incorporates Sterling River EL 24/91 and Mt. Farrell EL 13/96 following amalgamation of the three titles in June 1997. EL6/98 (Queenstown) was granted to Pasminco in December 1997. In February 1998 Pasminco was granted permission to combine reporting of the Moxon Saddle part of EL 6/98 with Tullah EL 22/90.

The Tullah EL was applied for in August 1990 by Peko Exploration Limited, a subsidiary of North Broken Hill Limited. In September 1990 the EL application was transferred to Pasminco Australia Limited (of which NBH then owned 45%) and the EL was granted on 20 October 1990.

Sterling River EL 24/91 originally covered 48km<sup>2</sup> around Mt Murchison, south of the original Tullah EL. The granted area covered 42km<sup>2</sup>, with 2.7km<sup>2</sup> of Pasminco's Rosebery Mine Lease and 2.4km<sup>2</sup> vested in the HEC, being excluded from the licence.

Sterling River was originally applied for by Pasminco Exploration as 42km<sup>2</sup> in August 1991, but an area 6km<sup>2</sup> to the SE of Mt Murchison was added to the application in October 1991. The EL was granted on 10 January 1992 and the renewal and reporting date for Sterling River were made the same as that for Tullah EL 22/90.

Mount Farrell EL 13/96 comprises two square kilometres south of the summit of Mt. Farrell and was a portion of the ground relinquished on 20 October 1995 (as part of a statutory reduction of EL 22/90). The EL covers the Owen Conglomerate/Murchison Volcanics contact just south of Mount Farrell and the Osborne alteration zone. This licence contained a small zone vested in the HEC in the Lake Rosebery dam area and approximately 75% of the original EL 24/91 is covered by the Mt Murchison RAP (Crown Land).

In June 1997 Tullah EL 22/90, Sterling River EL 24/91 and Mount Farrell EL 13/96 were amalgamated and are now collectively reported, with the Moxon Saddle block of EL 6/98, under Tullah EL 22/90.

## 1. GEOLOGY

The Tullah licence covers units of the Cambrian Mt Read Volcanics extending either side of a 16km section of the Henty Fault. The latter is a major NNE-trending and steeply west-dipping structure located towards the eastern margin of the Mt Read Volcanic belt (Figure 2).

Within the EL volcanics range from rhyolitic to basaltic in composition, but are mainly rhyolite and dacite. Rock types include lavas, intrusives, volcanoclastics, minor pyroclastics and epiclastic sediments (Figure 3).

West of the Henty Fault are the Mt Black Volcanics, a sequence of dacitic to andesitic volcanics, mainly lavas and intercalated reworked volcanoclastics. Underlying the Mt Black Volcanics and separating them from the Henty Fault on the western side of the Sterling Valley are the Sterling Valley Volcanics, a wedge of andesitic and basaltic lavas, sills and clastic sediments.

Lying along the eastern side of the Henty Fault is an extensive unit of west-dipping and facing, fine grained interbedded clastic sediments including black shales – known as the Farrell Slates. The term Slates is in fact a misnomer as the Farrell Slates include a significant portion of felsic volcanoclastic material intercalated with horizons of dark grey to black shale and siltstone. East of and stratigraphically below the Farrell Slates are the rhyolitic to dacitic Murchison Volcanics which form part of the Eastern Quartz Phyrlic Sequence (EQS). The Murchison Volcanics include lavas, intrusives and volcanoclastics and are intruded by the chemically-similar Murchison Granite (Cambrian) and unconformably overlain by Cambro-Ordovician Owen Conglomerate.

Most of the volcanics are hydrothermally altered to some degree. In particular, the Murchison Volcanics contain intensely altered zones, most significantly and extensively along their upper contact with the overlying Farrell Slates.

Pb, Zn, Cu, Ag, Au, Sn and As mineralisation is widespread in the Farrell Slates and the Murchison Volcanics, particularly east of the Henty Fault. The only significant mineralisation known west of the Henty Fault is Lorrigans Luck (Au-As-Cu-Sn) deposit. This deposit was formerly known as the 'Arsenic Resource' and is hosted within the mafic Sterling Valley Volcanics.

Most of the known mineralisation in the tenement is of a structurally-controlled lode and vein style. Many lodes are semi-conformable with primary layering in the enclosing rocks. Both the mineralisation and bedding tend to parallel the steep west dip of the Henty Fault close to this structure but tend to cross cut bedding with increasing distance away from the fault.

The presence of Au-Sn mineralisation, as well as evidence from lead and sulphur isotopes, has suggested that much of the mineralisation in the Tullah-Sterling River area is a Cambrian-Devonian hybrid (Purvis, 1992). The gold, as well as some of the base metals and silver, have been attributed to a Cambrian volcanogenic origin. These metals are thought to have been remobilised during Devonian deformation, largely due to the thermal influence of granite intrusion, with inputs of Sn, As, further base metals and silver at that time. Gold is a notable absentee from the Devonian age Pb-Zn-Ag Farrell orebodies at Tullah - the largest (now 80% mined out) of the known resources within the current tenement.

The significant mineral occurrences on the license are shown on Figure 3. Two of the larger mineralised bodies (the Lakeside gold deposit with 750,000 @ 2.1g/t Au and the Lorrigans Luck deposit with 480,000t @ 5% As & 1g/t Au), are not exposed at surface and were found by drilling in the 1980s (Weber *et al.*, 1997).

## 2. PREVIOUS EXPLORATION

Previous exploration has been conducted across the Tullah tenement area by various companies, dating back to the early 1950's (Lorrigan, 1991; Purvis, 1992). The majority of existing geophysical work completed across the three amalgamated tenement areas has been reviewed by Pasmenco over the past two years. Details of this data review, covering the Tullah and Sterling Valley areas, were presented in the 1997 Annual Report (Weber *et al.*, 1997).

Table 1 presents a summary of previous exploration completed across the area now covered Tullah (EL 22/90).

**Table 1. Previous Exploration conducted across the Tullah tenement area.**

YEAR	COMPANY	EL	WORK CONDUCTED
1950's	-	-	Dominantly geophysics - IP, ground mag & fixed loop EM
1973/74	Asarco (Aust) Pty Ltd	4/73	Stream sediment survey - identified Sn & base-metal anomalies
1973 - 78	Asarco-Cominco JV	4/73	Bedrock auger sampling, mag, EM, IP & 3 DDH.
1979	EZ	1/62	Review of past work
1979/80	EZ	1/62	Murchison River area, ground mag IP & drilling
1979/80	EZ	4/73	Work focused on Henty Fault Zone - mapping, soil geochem, IP, ground mag, stream sed and rock sampling.
1980/81	EZ	1/62	Stream sed survey, soil sampling, grid mapping ground mag, drilling
1980/81	EZ	4/73	DDH to test coincident ground mag & IP anomalies; minor sulphides & Sn mineralisation intersected.
1981	EZ	1/62	Drilling, data review & lineament analysis
1982	EZ	4/73	Soil geochem survey over Mt Black Volcanics, close to Henty Fault. Anomalous Sn resulted in costeaning and rock chip sampling with resultant high Au, however mineralisation style (vein) unattractive and work discontinued. One DDH drilled under costean in 1985 (low resistivity zone) - minor sulphides intersected.
1983	EZ	4/73	Data review, costean sample analysis
1983/84	EZ	1/62	DIGHEM survey, gridding, ground mag, mapping, rock chip geochem, EM, costeaning & soil sampling.
1984	EZ	1/62	Gold study, core sampling.
1984	EZ	4/73	High As intersections resulted in shift away from Sn to As. Informal ore reserve calculation - 4 sulphide lenses within 4 holes est. 480 000t @ 5% As ("Arsenic Resource"), with mineralisation open to north, south & at depth. Core analysed for Au using aqua regia/AAS - Au masked by presence of sulphides.
1984/85	EZ	4/73	DIGHEM, grid mapping, core from Arsenic Resource area re-assayed for Au using Fire Assay analysis. 12 samples returned >1g/t Au. Fire Assay analysis consistently gave a higher assay than the previously employed aqua regia/AAS method. A gold content for the Arsenic Resource area was calculated using the As ore reserve intersections, resulting in an est. ore content of 480,000t @ 5.02% As, 0.84 g/t Au.
1985/86	EZ	4/73	Additional drilling to test geophysical targets, Henty Fault Zone & interpreted cross-structures.

**Table 1. Previous Exploration conducted across the Tullah tenement area.(cont.)**

YEAR	COMPANY	EL	WORK CONDUCTED
1986	EZ	4/73	Review of work undertaken to date.
1986/87	EZ	1/62	Target Model - Henty Fault Zone, core sampling, UTEM, compilation of Farrell Mines Data.
1986/87	EZ	4/73	Metallurgical testing of As zones, re-assay of core (fire assay), rock chip analysis.
1987/88	EZ	1/62	Drilling, down-hole IP & resistivity (Lakeside), BCL survey, drill core re-assays, gravity, EM, ground mag (Duttons), mapping, rock chip sampling, drill core re-assay (Farrell-Mackintosh), drill core re-assay, IP, rock chip & BCL sampling (Murchison Mine)
1987/88	EZ	4/73	Gravity & IP surveys, re-assay of core, metallurgical testing
1988	EZ	1/62	UTEM, down hole EM, resource est (Lakeside), ground mag & EM (Tullah Flats), gridding, mapping, soil sampling ground mag, IP & EM (Murchison Mine)
1989	EZ	1/62	Indicated resources for Lakeside.

Pasminco began exploration activities within Tullah EL 22/90 during 1990 and on Sterling River EL 24/91 (now part of EL 22/90) in 1991. Table 2 presents a summary of work conducted by Pasminco between 1990 and 1997 across the amalgamated tenement area (Purvis, 1994; Purvis, 1995; McGunnigle, 1996; Weber *et al.*, 1997).

**Table 2. Previous Exploration conducted by Pasminco within the Tullah tenement area.**

YEAR	AREA(S)	WORK CONDUCTED
1990 - 93	Tullah/Sterling River	Aeromag & radiometric helicopter-borne surveys, gravity survey, evaluation of Murchison Mine & DDH (MM1a), relogging of 12 underground drillholes from old Farrell Mines, geol. mapping & geochem rock sampling (Sterling Valley, Murchison Gorge, Farrell Range, Henty Fault), EM survey, down hole EM,
1993/94	Tullah Flat/Mackintosh Dam/South Stitt	DDH & DHEM (Mackintosh Dam & Tullah Flat), MALM & IP (Mackintosh Dam), interp of 1991-93 gravity & aeromag surveys, mapping & rock sampling (Mackintosh Dam & South Stitt), resurveying of old drillhole collars & completion of drillhole survey database for all surface exploration holes, computerisation of full geochem records for approx. half of surface exploration holes, review of mineral potential of tenement area.
1994/95	Sterling Valley/Farrell Mines	4 DDH, DHEM, relogging & sampling of old core (1400m), mapping of alteration zone along Farrell Slates/Murchison Volcanics contact (rock sampling & struct/aeromag interp), ground mag, mapping & rock sampling over mag anomaly (Sterling Valley Volcs), initial evaluation of Farrell Mines, geol. mapping across Sterling Valley incl. relogging of old core, Hons Thesis on Structure & Mineralisation of Farrell Slates & Murchison Volcanics
1995/96	Lakeside/Farrell Mines/Lorrigans Luck/Sterling Valley	12 DDH, rock chip sampling (Murchison Gorge Alteration Zone), geol mapping & rock chip sampling (Sterling Valley), geophysics review (Lakeside), review of previous exploration (Lakeside & Lorrigans Luck)
1996/97	Tullah/Sterling River/Mount Farrell	Exploration for Au mineralisation associated with Henty Fault Zone, review of prior exploration in Sterling Valley area, study of paragenesis of mineralisation at Lorrigan's Luck Prospect (previously Arsenic Prospect), Lakeside & Sterling Valley, soil orientation surveys (Lakeside Prospect & Sterling Valley), mapping and rock chip sampling (Sterling Valley area), review of existing geophysical data across Tullah licence area, recommendation for drilling IP target (nth of Lakeside), review of past exploration in South Stitt area (EL 24/91) & prospecting review using Pasminco GIS system of past exploration data, drilling of 7 RC holes (567.5m) and 3 DDHs (204.0m) which intersected significant but low grade gold mineralisation in the Lakeside Prospect.
1997/98	Mackintosh Dam/Spillway, East Stitt, Sterling Valley Mine, Bruce Creek & Anthony Rd	Review & re-interp of existing IP data, gridding, geol mapping, soil & rock chip sampling & IP surveys.

## 5. WORK COMPLETED 1998-99 REPORTING PERIOD

Work completed during the September 1998-September 1999 reporting period focused principally on the Bruce Creek, East Stitt and Murchison Prospect areas. Exploration completed over these areas consisted of:

- Partial leach soil sampling, diamond drilling and geological mapping within the Bruce Creek Prospect area.
- Geological mapping and Airborne Electromagnetics over the North Murchison area.
- Geological mapping and soil geochemistry over the East Stitt grid.
- Compilation of historic geological and drill hole data over the entire tenement area.

A review past exploration over the Tullah license, in particular the Tullah Flats, Sterling Valley and Murchison Mine areas was also initiated as part of a data review of the tenement. This work is ongoing and will be reported in full in the 10<sup>th</sup> Annual report.

Details and results of exploration undertaken during the reporting period on the above mentioned areas are outlined in the following sections.

### 5.1. Details of Work Completed

#### *Partial Leach Sampling - Bruce Creek Prospect*

Infill partial leach soil sampling was completed along four lines of the Bruce Creek prospect grid to delineate the extent of several previously identified partial leach soil anomalies. Two line kilometres of grid cutting were completed and 139 partial leach soil samples collected as part of this work. Soil samples were taken from the "B" soil horizon immediately below the matted root zone, at 25m spacing along each line. Amdel completed the analyses using proprietary method IC8/40 ("Deepleach 40") and analysed for Ag, As, Ba, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, Sb and Zn by ICP-MS. Analytical results and sample locations are presented in Appendix 1.

Results from infill sampling between lines 2600N and 3200N did not indicate any additional anomalism outside the previously identified areas. Instead this sampling showed that anomalous responses are restricted to a 200m zone of influence around the Murchison Highway and Bruce Creek. The most elevated responses on these lines are observed closest to the highway on all lines sampled and decrease in intensity away from it. This implies that these responses are probably due to cultural contamination around the highway rather than from concealed mineralisation. Consequently no further work is planned in this area.

### 5.1.2. *Diamond Drilling - Bruce Creek Prospect*

Two diamond drill holes were completed on the tenement during the year. Both holes were collared on the Bruce Creek Prospect.

Diamond drill hole BCD1 was drilled to test an IP anomaly on line 2800N identified by the 1997 survey. This anomaly occurs close to the interpreted mafic-felsic transition between the Sterling Valley Volcanics and the Mt Black Volcanics. The anomaly lies on the south western margin of magnetic anomaly "C" as described in Purvis (1995) and to the south of a prominent west north west trending structure visible in the regional aeromagnetic data.

Drill hole BCD2 was collared approximately 150m to the west of the Sterling River, in the Sterling Valley. The hole was designed to test a partial leach Au-As geochemical anomaly which is located within the Sterling Valley Volcanics and interpreted to lie immediately west of the Henty Fault. Rock chip samples collected from the vicinity of this anomaly returned assay values of 1.16g/t Au, 17% As (sample 274016) and 0.5% Cu (sample 274017) from arsenopyrite veined and strongly weathered siliceous and goethitic andesite. The anomaly is located within the same host rock sequence and is at a similar structural position to the Lorigans Luck Prospect, which is situated 1.2km to the north.

The drilling was completed by Low Impact Diamond Drilling Specialists (L.I.D.D.S) using a highly portable Hydra Core 28 drill rig. The Hydra Core rig consists of a skid mounded drill head and a separate skid mounted power pack driven by a Volkswagen motor. The rig is narrow, extremely light and can be transported along hand cut grid lines with minimal disturbance. By using the Hydra Core drill rig no earth works were required for drill site preparation. Instead access was established by hand, using a chainsaw to clear minor fallen timber and undergrowth.

#### **Drill Hole BCD1**

BCD1 was collared at 383155.8mE, 5372839mN (3125E, 2800N), beside an old access track to the Sterling Valley, approximately 180m from its junction with the Murchison Highway. The hole was drilled at -60° towards AMG east. Drilling commenced on 16 November 1998 and was finished on 1 December at 156m.

#### ***Results***

The target IP anomaly is situated several hundred metres south of the Murchison Highway on steep east-facing slope overlooking the Sterling Valley. The geology is interpreted to young and dip steeply west, although there are very few

reliable facing indicators (mainly structural vergence data and minor graded bedding). Outcrop consists of altered monomict andesitic breccia, medium grained feldspar porphyritic andesite lava, occasional lenses of dark green-grey siltstone and numerous basalt dykes or sills. These rocks are strongly chloritised and cut by numerous milky white quartz veins, quartz  $\pm$  chlorite, carbonate and limonite veins. Most of the quartz-chlorite veining contain some visible sulphide (pyrite or arsenopyrite). Partial leach soil samples taken on line 2800N indicated only a weak to moderately elevated Zn and Cd response on a very steep east dipping slope leading into Bruce Creek. No other traces of base metals were detected in outcrop or rock chip sampling.

Diamond drill hole BCD1 intersected feldspar-phyrlic andesite lava and numerous fine grained basalt dykes or sills. The andesite lava was variably silicified and contained zones of weak-moderate silica-albite alteration probably after devitrified glass. The hole passed through the projected IP target zone between 90m and 130m. Two narrow annealed fault zones containing veins of sphalerite, galena and pyrite mineralisation were intersected in the hole (at 123-125m and 138-141m) near the approximate position of the IP anomaly. The mineralisation was associated with moderate to strong sericite, carbonate, silica alteration which formed a bleached halo. The mineralisation style and silica-carbonate alteration shows some similarity to mineralisation observed at the Murchison Mine. The best base metal assay interval was 138.7-140.2m, 1.5m @ 0.12% Pb & 0.43% Zn. A drill log and section of BCD1 is included in Appendix 3. Assay results from drill core sampling are given in Appendix 2.

A DHEM survey was conducted on hole BCD1, however no anomalous response was recorded. Profiles from this DHEM survey are presented in Appendix 3.

### **Drill Hole BCD 2**

Hole BCD2 was collared beside the Sterling River at 384101.9mE / 5373201mN and angled at  $-60^{\circ}$  to AMG east. The hole was designed to test beneath an Au-As partial leach anomaly on grid line 3200N of the Bruce Creek grid, 1.1km south and along strike of the Lorrigan's Luck prospect (an inferred 480,000t As-Au resource).

Hole BCD2 commenced on 7 December 1998 and was terminated at 80m on 11 December. The hole was designed to test both sides of the Henty Fault but was stopped short of its target depth due to poor ground conditions and an absence of sulphide mineralisation.

## ***Results***

The drill hole intersected an alternating sequence of strong silica-carbonate altered, andesite, mafic volcanoclastic breccia, sandstone and siltstone. As with BCD1 the sequence was punctuated by numerous basalt sills or dykes. Only traces of base metal sulphides were intersected in the hole, with most sulphide mineralisation being fracture controlled and associated with silica  $\pm$  carbonate veining. Pyrite, arsenopyrite and trace chalcopyrite were the dominant sulphide phases and generally occurred in narrow (0.5-5cm) fractures and veins. No significant gold mineralisation was observed or reported in the samples assayed.

A drill log and section of BCD2 is included in Appendix 3 and analytical results are included in Appendix 2.

### ***5.1.3. HEM Survey - North Murchison Area***

A high resolution helicopter-borne frequency domain electromagnetic (HEM) and magnetic survey was conducted by Geo Instruments Pty Ltd over the North Murchison region of the Tullah tenement during April 1999. The aim of the survey was to detect anomalous conductive response in the EM data that could be directly targeted for base-metal mineralisation. An additional aim of the survey was to facilitate geological mapping of the area and to assist with defining prospective horizons on which to focus more detailed exploration.

A suite of anomalous EM responses were delineated in the images produced of the computed resistivity data. These anomalies were checked against stacked profiles of the actual located line data. Analysis of stacked profiles provided the most suitable means of anomaly prioritisation.

A majority of the low resistivity responses were determined to be dominantly high frequency quadrature responses (poor conductors). Comparison of the coplaner coil responses with the coaxial coil responses gave good indication that many of these poorly conductive responses were due to glacial overburden. Several anomalous EM zones have been recommended for ground testing. Some of these are identified in the Sterling Valley and are interpreted to be associated with pyritic or strongly sheared Farrell Slates below thin glacial cover.

Images of the EM and magnetic data have been produced and will provide a basis for future structural and lithological interpretation (Appendix 4, Figs 7 - 13).

#### 5.1.4. *Geological Mapping - North Murchison Area*

North Murchison encompasses an area of approximately 16km<sup>2</sup> extending from the north face of Mt Murchison to the southern flanks of Mt Farrell. To the west the area is bounded by the Sterling Valley and to the east by Lake Murchison. The Murchison area has received minimal attention by modern explorers, despite the occurrence of numerous base metal and gold workings or prospects. The majority of exploration in the area was conducted by Billiton Australia between 1987-1989, Randell (1989).

Billiton completed 54.3 line kilometres of gridding during their first year of tenure, as well as 1:5,000 scale geological mapping, rock-chip sampling, 50 line kilometres of ground magnetics and a fixed loop UTEM survey (47.6 line km) over the North Murchison area. Details of this work are summarised in Randell (1989) and Purvis (1994). Billiton's main area of focus was the Cambrian Murchison Volcanics, a sequence of rhyolitic to dacitic quartz-feldspar-phyric lavas, porphyritic intrusions, volcanoclastics and minor epiclastic sandstones and siltstones. These rocks were interpreted, at the time, to be correlates of the Tyndall Group. Mapping completed by Billiton identified a strike extensive horizon (>2.4km) of siliceous ashy volcanoclastics, chert and epiclastic siltstone with anomalous base metals (to 2250ppm Pb & 1040ppm Zn). This horizon was interpreted to represent a period of volcanic and tectonic quiescence, which was regarded highly as a favourable position for VHMS mineralisation.

The UTEM survey completed by Billiton is now considered to have been, at least in part, ineffective; loops were designed with little regard for geology, there by leaving large areas of the survey with less than optimal coupling with the primary EM field. No EM responses were identified by Billiton in the main area of interest, although two very subtle late time responses were identified at the northern end of the survey area (at 5374,000N, 385,400E and 5374400N, 385320E). These responses were located near a major NNW trending fault and were recommended for follow up; there is no mention in available reports as to whether any further work was done.

Work completed by Pasminco in the North Murchison area has to date been limited. Ground work has included a semi-regional gravity survey and several phases of mapping and rock chip sampling along the Anthony road and the Murchison Dam access road (Purvis, 1995, McGunnigle, 1996, Parfrey and Murphy, 1998), other than this the area has been largely ignored.

### *Mapping*

A total of 10 days geological mapping was completed in the North Murchison area by O. Parfrey and A. McNeill during April-July 1999. The primary aim of mapping was to identify dominant facies variations in the Murchison Volcanics and confirm the overall distribution and geometry of stratigraphic units in the area. A secondary aim of the mapping program was to determine whether there were any distinct stratigraphic units within the Murchison Volcanics which could be confirmed the proposed correlation with the Tyndall Group. Due to limited access into the area mapping traverses were generally restricted to existing roads, vehicle tracks and grid lines

Mapping traverses were completed along the Murchison Dam road, the Murchison Highway, the access track to Lake Mackintosh and several old grid lines and access tracks off the Anthony road and Sterling Valley track. Reconnaissance mapping was also completed in the Murchison Mine area. More detailed mapping is currently in progress (see section 6) and the completed geological map of this area will be presented in the next annual report.

### *Geology*

The North Murchison area is dominated by the Murchison Volcanics, an enigmatic sequence of quartz  $\pm$  feldspar-phyric rhyolite to dacite lavas, porphyritic intrusions, ashy and occasionally pumiceous volcanoclastics and minor epiclastic rocks, including conglomerates and local breccias. Overall the Murchison Volcanics generally dip (60-80°) and face west. Several outcrops observed on the Anthony Road suggest stratigraphy may dip shallower (approx 30°) close to the Murchison Granite contact, but, steepening to 60-70° with proximity to the Henty Fault. The sequence contains abundant sub-volcanic quartz $\pm$ biotite-phyric, magnetite-veined intrusive bodies which show sill or dome like geometry. These sills vary from being fine grained, siliceous massive and aphyric to strongly quartz  $\pm$  feldspar porphyritic with phenocrysts to 5mm. The boundaries of these sills are often difficult to identify due either to local structural complication or insufficient outcrop, however, in two localities peperitic contacts with the enclosing volcanoclastics can be observed. Generally the margins to these sills are marked by an increase in sericite-chlorite alteration, cleavage development and a rapid decrease in crystal content. Occasionally narrow basalt dykes cut the margins of these units, particularly near mappable structures. Moderate to locally intense hydrothermal sericite/chlorite alteration is present throughout the Murchison Volcanics, but is particularly intense along the western contact with the Farrell Slates.

The depositional relationship between the Murchison Volcanics and Farrell Slates remains enigmatic. All contacts observed in outcrop are faulted between these two units. Randell (1989) and Allen (1995) have interpreted a gradational

contact between the Farrell Slates-Murchison Volcanics, however, there are few areas where outcrop is sufficiently continuous for this transition to be observed. Structural vergence data (cleavage/bedding relationships), graded bedding and erosional contacts in both the Murchison Volcanics and Farrell Slates indicates both units face and young to the west. The composition and depositional environment of the upper Murchison Volcanics and the lower units of the Farrell Slates are very similar. There are significant lenses of poorly sorted pumiceous, quartz, crystal±lithic, sericitic volcanoclastic siltstone and sandstone within the lower Farrell Slates. These units often have erosional crystal-rich bases, are poorly graded and commonly contain abundant rip up clasts. They are interbedded with fine, diffusely laminated, tuffaceous, siltstone horizons, indicating a low energy subaqueous depositional environment. These units probably represent eruption driven mass flow deposits and minor reworked pyroclastic debris, intercalated with ambient terrigenous turbiditic siltstone and shale sedimentation. It is possible that the volcanic horizons within the Farrell Slates represent interfingering with the upper Murchison Volcanics. However, drilling (eg holes MM1a and SVD89-3) indicate that the current contact between these units is a fault in the vicinity of the Murchison Mine and in the Sterling Valley.

A traverse through the Farrell Slates and Murchison Volcanics was completed along the Murchison Dam road, between the Murchison Mine and Murchison Dam. This traverse is summarised from west to east and provides an excellent window into the stratigraphy of the Murchison Volcanics. The first visible outcrop on the road consists of strongly cleaved, dark grey-black, fine grained, laminated shales and minor sandy siltstones belonging to the Farrell Slate sequence. These rocks consistently dip ( $50-70^{\circ}$ ) and face west, with cleavage ( $46^{\circ}-65^{\circ}$  west) slightly shallower than bedding. The siltstone and sandstone beds in this unit contain variable amounts of detrital muscovite and were probably deposited as small turbiditic mass flows. The contact between the Farrell Slates and Murchison Volcanics on the Murchison Dam road is obscured by a small creek, however, it has been interpreted as a fault ("the Farrell Fault") by Purvis (1994). In the immediate footwall to the Farrell Fault is a fine to medium grained quartz+feldspar crystal sandstone belonging to the Murchison Volcanics. This unit is moderately silica-sericite altered, well cleaved and contains numerous dark wisps of chlorite, probably after devitrified glass shards or pumice. Below this unit is a massive green pyritic and strongly altered sericite±chlorite-silica schist, one of the more altered volcanic units in the gorge which is cut by abundant quartz veins and narrow veinlets of pyrite or galena. The eastern margin of this outcrop is in faulted contact with a coarse grained quartz-feldspar ± lithic rich reworked volcanoclastic or epiclastic sandstone, which outcrops on a sharp right horse shoe bend in the road. The sandstone is characterised by large quartz & feldspar crystals to 6mm and numerous lithic clasts of pale siliceous volcanic, red hematitic chert and strongly flattened chlorite altered pumice. Towards its eastern margin the rock contains diffuse

domains of pink albite or k-feldspar alteration, which appear to be selectively replacing large quartz & feldspar crystal rich lava clasts. Intruding into this unit is a feldspar, biotite and lesser hornblende-, quartz-phyric rhyolite sill. The sill is weakly foliated, less crystal rich near its centre and may exhibit weakly developed sheeted shrinking cracks. The pink clastic alteration observed near the margin of this unit may represent a brecciated intrusive (peperitic) contact rather than lava clasts in the overlying sandstone. Below this sill are more quartz-feldspar ± lithic rich volcanoclastic sandstones and grits of similar appearance to those outcropping on the sharp right hand bend.

The Murchison Volcanics continue to dip and face west for another 250m before stratigraphy rolls over across an interpreted anticlinal closure and dips steeply east towards the contact with the Owen Conglomerate at the Murchison gorge lookout. The final 100m of stratigraphy leading up to the Owen Conglomerate contact is polymict epiclastic conglomerate. The conglomerate contains abundant quartzite pebbles, altered volcanic clasts, chert and volcanic quartz crystals and is interpreted to belong to the upper Murchison Volcanics rather than the base of the Owen Conglomerate. Previously this unit has been referred to as the Jukes Breccia (McNeill and Corbett, 1992) a correlate of the Zig Zag Hill Formation. The contact between the Owen Conglomerate and Murchison Volcanics is clearly unconformable on the Murchison Dam road.

The Murchison Volcanics are intruded along their eastern margin by the Murchison Granite, an interpreted Cambrian syn-volcanic pluton. The Murchison granite is quartz-feldspar-biotite-hornblende-phyric and has been interpreted to be shallow level I-type, magnetite series granite (Davidson, 1998). Using  $^{40}\text{Ar}/^{39}\text{Ar}$  dating of hornblende, it has been dated at  $501 \pm 5.7$  Ma by Perkins and Walshe (1993), which gives a similar age to the Anthony Road Andesite which immediately underlies the Tyndall Group. The margins of this granite vary from strongly porphyritic to granophyric, to subgranitic in texture. Zones of strong to intense silica, k-feldspar, chlorite ± magnetite and pyrite alteration are present within the Granite and surrounding Murchison Volcanics. The margin between the granite and volcanics is often intensely chlorite ± pyrite altered for at least 10m either side contact.

The Murchison Granite-Owen Conglomerate contact was examined on the Mackintosh Dam access road and at the Sophia Tunnel outlet on western shore of Lake Mackintosh. This contact was also mapped on the Murchison Dam access road. Outcrops on the dam road are well exposed in several cuttings and clearly structural, with semi-ductile sheared contacts between the conglomerate and granite. In general the Murchison Granite is present in the footwall to these faults, where it is highly strained (possibly mylonitic) and takes on a crystal sandstone like appearance. The Owen Conglomerate is nearly always strongly siliceous for 1-10m away from the fault planes and occasionally shows potassic

alteration. The granite-conglomerate contact on the shore of Lake Mackintosh is more complicated. Within 1m of the contact there are small rafts of highly siliceous conglomerate floating within relatively unstrained granite. There is little direct evidence of faulting or mylonitic shearing at this contact and in several places it could be interpreted that the granite is intruding into and stoping out the conglomerate. Approximately 1-3m above this contact there is a well developed shear zone, where the conglomerate and a mafic dyke are strongly deformed and moderately mineralised (abundant pyrite, sphalerite and galena). In a number of other localities on Mt Murchison, the Murchison granite is in direct contact with the Owen Conglomerate along faulted contacts, however, at one locality on Return Ridge this contact may be erosional (Davidson, 1998).

### *Geochemistry*

Thirty two (32) rock chip samples were collected during the mapping program and were submitted to Analabs for multi-element analysis. Analytical results and sample locations are included in Appendix 5.

Perhaps the most interesting result obtained from the rock chip sampling came from the contact between the Murchison granite and the Owen Conglomerate on the shore of Lake Mackintosh. A single rock chip sample (330541) collected from the strong chlorite and pyrite altered margin of the granite returned 5.6% Zn, 0.46% Pb, 0.72% Cu & 285g/t Ag, but little gold. The alteration zone at this contact is approximately 3-5m wide and is bound to the west by a significant shear zone. Alteration is particularly strong along virtually all the granite contacts observed to date, however, this contact is the most altered and mineralised observed within the prospect area. Other significant mineralisation included:

- A previously un-mapped mineralised (sphalerite±galena veined) fault zone separating sheared volcanics from sericitic rhyolitic lavas, on the transmission line track, approximately 300m west of the Anthony road. Samples from this zone returned up to 1.8% Zn, 1.0% Pb and 32.7g/t Ag and 0.45 g/t Au.
- An old working (previously sampled by Billiton) in a creek on line 5373200mN, where samples of galena and sphalerite veined, fine grained, chlorite+sericite altered volcanoclastic returned up to 1.96% Zn and 3.3% Pb (sample 272695). The interpreted strike extension of this unit, outcropping on the transmission line track 200m north of the old workings, was also weakly anomalous with results of 0.16% Pb and 390 ppm Zn.
- Patchy disseminated and vein pyrite and galena in volcanoclastic sandstone units close to the Anthony Road returned up to 0.1% Pb and 49 g/t Ag (sample 331950).

With the exception of the one high value from the mineralised fault zone, described above, Au assays are low, <0.1 g/t. Generally the quartz-feldspar porphyries and lavas are less strongly base metal mineralised than the volcanoclastics ( best assay; 0.16% Pb and 0.53% Zn [331954]) but may have higher Cu (to 0.23%) and, in one pyrite-chlorite veined sample, high Co (490 ppm - 0.2%).

Randell (1989) reported a geochemically anomalous finely laminated, cherty-ash unit with patchy disseminated pyrite and galena mineralisation (rock chip values to 2250 ppm Pb & 1040 ppm Zn). This unit was described as approximately 150-200m thick and was mapped over 2.4km of strike length. The interpreted southern extension of this unit was sampled during this program, however, base metal values were low (<135 ppm Zn and <100 ppm Pb). Additional mapping is required to firmly identify and evaluate this horizon.

### *Discussion*

Mapping in the Murchison area has confirmed that the Farrell Slates structurally overlie the Murchison Volcanics, with both units dipping and facing west. The actual contact between these two units is a ductile cleavage sub-parallel fault (Farrell Fault) in drill hole MM1, drilled below the Murchison Mine and in the Sterling Valley, south of the Sterling Valley Mine. Immediately below the Farrell Fault, the Murchison Volcanics show strong hydrothermal alteration consisting of sericite, silica, chlorite and pyrite. This contact has previously been recognised as a potential VHMS horizon, however, no significant indicators of mineralisation other than widespread alteration have been identified to date. Additional exploration is warranted in these rocks along this contact, particularly in the vicinity of the Murchison Mine and immediately south of the Sterling Valley Mine.

The Murchison Volcanics have been mapped by MRT as part of the Tyndall Group. Although there does not yet appear to be any reliable marker horizons within the Murchison volcanics, to firmly establish this correlation, it remains reasonable. Geological similarities, including potential time equivalent stratigraphic position and lithofacies composition (eg quartz+feldspar-phyric, rhyolitic volcanoclastics, epiclastics, hornblende-phyric intrusives) also exist between the Murchison Volcanics, Tyndall Group and White Spur Formation. It is possible that the Murchison Volcanics are at least in part, time equivalent with both the Tyndall Group and White Spur Formation. Both the Tyndall Group and White Spur Formation directly over lie the CVC south of Rosebery. In the Hercules area, the White Spur Formation immediately over lies the Hercules orebody and is considered time equivalent of the Rosebery Mine Hangingwall sequence, with the mineralisation located at the sequence boundary between the CVC and White Spur Formation. At the Henty Gold Mine the Tyndall Group is host to the mineralisation and marks the same sequence boundary with the CVC.

One important implication of this correlation, if correct, is the potential for the Farrell Slates being time equivalents of either of the Rosebery host/black slate package or the shale dominated portions of the White Spur Formation (ie Chamberlain Shale equivalent). This possibility has been surmised for some time, however, no firm evidence has been forthcoming. Detailed mapping and lithogeochemical comparison of the Farrell Slates, Rosebery/Que River shales and White Spur shales are currently under way and may assist in clarifying this interpretation.

The Murchison Volcanics are strongly altered throughout. Alteration within the Murchison Gorge has been extensively described by Polya (1981) and is implied to have similar characteristics to proximal VHMS alteration zones. While the sequence is almost ubiquitously chlorite, sericite, and silica altered it appears to be overprinted by later (syn deformation) K-feldspar, chlorite, quartz and magnetite  $\pm$  pyrite alteration. This overprinting alteration is interpreted to be associated with shallow level intrusion of the Murchison Granite.

While alteration is visibly strong throughout the volcanics, systematic rock chip sampling by Pasminco in the Murchison Gorge (1994) and on the Anthony Road (1998), have failed to identify significant zones of elevated base metal anomalism. Despite the numerous mineral occurrences occurring throughout the area, the most significant occurrence remains the Murchison Mine deposit at >30,000t @ 15% Zn, 10%Pb, 350g/t Ag & 2g/t Au).

Conclusions drawn by Allan (1995) from a transect through the Murchison Volcanics and Farrell Slates, suggest alteration and facies variations within the Murchison Volcanics represent a "classic" VHMS setting. His interpretation of alteration intensity increasing towards the "top" of the felsic volcanic sequence (Murchison Volcanics-Farrell Slates contact) is valid and occurs elsewhere in the MRV belt (eg, at Rosebery, Hercules).

### ***Geological Mapping - Bruce Creek and East Stitt Prospects***

Geological mapping were completed over the East Stitt and Bruce Creek grids, to ground check partial leach soil geochemical anomalies. Mapping on the East Stitt grid concentrated north of line 5369200N, where a moderate partial leach Au anomaly had been identified. The anomaly straddles the contact between the Sterling Valley Volcanics and CVC (Mt Black Volcanics), and trends south towards Moxon Saddle. The area is covered by a thin veneer of fluvio-glacial gravels and boulders with intermittent float of andesite lava, monomict andesite breccia and dacite lava or intrusions. To confirm the presence and tenor of this Au anomaly and to determine an appropriate follow up work program lines 5369200N and 5369600N were re-sampled by partial leach and conventional

“C” horizon soil sampling. Sample locations are illustrated in figure 4 and results are tabulated and included as Appendix 6.

Results from conventional soil sampling returned low gold values (<0.02 ppm) over both lines sampled. From this it can be interpreted that the source of the original partial leach anomaly is not related to surficial gold in either bedrock or the overlying glacial gravels. The partial leach sampling confirmed elevated gold responses on line 5369600N but failed to repeat the original responses observed on line 5369200N (Figure 4). Results from the second phase of sampling (on 5369600N) were an order of magnitude higher than the first survey results (ie maximum value of 0.0076 in the second survey vs 0.004 in the first) but repeated the overall trend of the anomaly well. The remainder of results along this line were very similar to those of the original sampling. It is a little concerning that line 5369200N did not repeat as well. The results from this line are considerably lower than the peak responses observed on 5369600N and may show more chemistry and(or) instrument noise. Overall the re-sampling confirmed the presence moderately elevated gold in this area (on line 5369600N) but reduced the strike extent of the original anomaly. Considering that this gold anomaly is located at the approximate junction between the Henty Fault and the inflection point between the NNW Henty-Red Hills structural trend and the NNE Tullah trend it remains an interesting target position.

Eight (8) rock chip samples were collected from the Bruce Creek grid during follow up mapping. These samples were submitted to Analabs for multi-element analysis. Analytical results and sample locations are presented in Appendix 7.

### ***Compilation of Historic Drilling Data***

The Sterling Valley is one of the more intensely and continuously explored areas within the Mt Read Volcanics. Modern exploration commenced in the Valley in earnest in the mid 1950's and since then, the area has been covered repeatedly by geophysical and geochemical surveys. To date 132 diamond and reverse circulation drill holes have been collared in the valley, bringing the total metres drilled to greater than 20,000m.

Given the Tullah licence was in its ninth year of tenure, a decision was made to re-evaluate all the historic drilling data, with the aim of producing a series of geological cross sections and a three dimensional geological model of the tenement area.

In order to complete this modeling project the Pasmenco geoscientific database (GDB) required updating with all available geological data. historic diamond drill holes currently housed at the Tullah Core Compound have been checked

against available geological logs and where discrepancies were identified the holes re-logged. This information (including lithology, alteration, mineralisation and structure) was then standardised using a consistent four letter code system and entered into Pasmaenco's GDB. The standardised data is currently being used to produce a series of 32 geological cross-sections spaced at 500m through the tenement, to gain a better understanding of the 3-D geology of the area. It is anticipated that a summary of this compilation work, the geological cross-sections and a 3-D geological model will be completed and presented in the next annual report.

## CONCLUSIONS AND RECOMMENDATIONS

Exploration completed during the 1998-99 reporting period has focused on Bruce Creek and East Stitt Prospects and the North Murchison area. In addition a large geochemical sampling program was commissioned over the license. Conclusions and recommendations arising from completed work programs are summarised below.

### *Bruce Creek*

- Drill testing of the Au/As partial leach soil anomaly on grid line 5373200N (hole BCD2) did not identify any significant mineralisation in this area. While drilling has not tested the Henty Fault proper, only minor sulphide mineralisation was encountered. No anomalous gold was detected by assaying and no additional work is proposed in this area.
- Drill testing of the IP anomaly on line 5372800N (hole BCD1) identified minor base metal mineralisation in a sequence of andesite and dacite volcanics close to the Sterling Valley Volcanics / Mt Black Volcanics contact. This mineralisation (consisting of pyrite, galena & minor sphalerite) is associated with sericite-carbonate alteration around a late brittle fault zone. Mineralisation of the style is similar to other small Devonian mineral occurrences in the tenement and offers little encouragement for VHMS mineralisation in this area. No further work is recommended.
- Remaining significant partial leach anomalies on the Bruce Creek grid can be attributed to cultural contamination around the Murchison Highway and Bruce Creek. Other responses on the grid are low in tenure compared with results obtained on other prospect areas that Pasminco is currently exploring. At this stage no further work is recommended on the Bruce Creek prospect area.

### *North Murchison Area*

- Additional mapping is required in the North Murchison area to constrain the distribution of geological units and characterise variations in alteration styles and intensities in this area. The most promising VHMS potential within this sequence appears to be in the upper 200m, immediately below the contact with overlying Farrell Slates (but should also include the potential "VHMS" horizon reported by Billiton 1987). The southern end of the Sterling Valley Alteration Zone currently holds the most interest for Cambrian style mineralisation.
- Base metal mineralisation in the Murchison Volcanics is mainly structurally controlled. Lead isotope work on several mineralised prospects in the sequence indicates that there is a significant Devonian lead contribution. These isotope signatures are, however, generally less radiogenic than the known Devonian systems, suggesting a degree of mixing between Cambrian and Devonian Lead in

this area. Systematic use of lead isotopes in combination with alteration mapping, litho-geochemistry and metal ratios may assist in screening potentially fertile Cambrian mineralisation from Devonian remobilised mineralisation.

- Anomalous AEM signatures located below glacial cover in the Sterling Valley are interpreted to be associated with strongly sheared and(or) mineralised shales within the Farrell Slates sequence close to the Henty Fault. These responses are weak, possibly due to the glacial cover, but further evaluation is recommended. In addition a fully integrated geological interpretation of the AEM data is considered a priority.

### *East Stitt*

- Infill partial leach sampling and mapping over an elevated Au anomaly along the contact between the Sterling Valley Volcanics and Mt Black Volcanics (south of grid line 5369200N) has added little encouragement in this area. Gold exploration is not a current focus of Pasminco Exploration and given the results to date no further work is recommended in the area at this stage.
- Other outstanding partial leach anomalies on the East Stitt grid should be ranked and assessed in context with partial leach results generated on other prospects in the MRV. Providing these anomalies stand up against other projects in the belt then additional work (including drilling) should be planned.

### *Other*

- Compilation of all existing drill hole data, geological mapping and geochemical sampling over the tenement requires completion, to identify any outstanding target areas prior to the license expiry in October 2000. This review should be centred around detailed geological sections through the tenement and incorporate available geophysical and geochemical information to identify potential deep drill targets.
- Partial leach sampling over favourable stratigraphy within the license area is required to test for concealed mineralisation. A sampling program involving the collection of 2000 samples over 50 line kilometres of grid commenced in August 1999. The survey is designed to cover areas of interest outlined in this report (e.g., the AEM anomalies in the North Murchison Area and the "prospective" horizon at the base of the Farrell Slates) and will be coupled with geological mapping of all new lines and compilation of this data with existing mapping. This program is ongoing and results will be reported when complete.

## 7. EXPENDITURE

Total expenditure for all work undertaken by Pasminco Exploration within Tullah EL 22/90 for the eleven month period to the end of August 1999 was \$276,301. A summary of the expenditure breakdown is given below.

Personnel	127,430
Travel and Accommodation	9,067
Geological Consultants	878
Geochemical Consultants & Assays	24,588
Geophysical Surveys & Contractors	27,816
Other Contractors	8,003
Drilling Contractors	21,951
Stores & Supplies	6,955
Vehicles Plant & Equipment	3,772
Land	3,301
Computing	1,378
Office	16,044
Administration Fee 10%	25,118
<hr/>	
<b>Total Tenement Expenditure</b>	<b>276,301</b>

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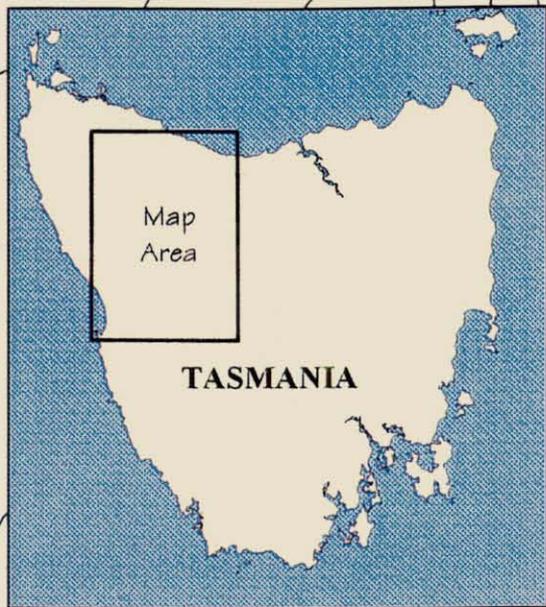
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**9. KEYWORDS AND LOCALITY**Keywords

ZINC, LEAD, GOLD, SILVER, ARSENIC, TIN, VOLCANOGENIC, ALTERATION, STRUCTURE, GEOCHEMISTRY, GRANITE, GIS, IP, GRIDING, MMI, STERLING VALLEY, TULLAH, FARRELL, MACKINTOSH DAM, EAST STITT, BRUCE CREEK, ANTHONY ROAD, MOXON SADDLE

Location

BURNIE SK55-3 & QUEENSTOWN SK55-5:  
TULLAH, STERLING RIVER, MT MURCHISON



Map Area

TASMANIA

490000 mE  
Somerset  
Burnie  
Penguin  
Ulverstone  
Forth  
5450000 mN

BASS STRAIT

Waratah  
Savage River  
5400000 mN

Bulgobac River EL19/94  
Mount Charter EL10/98  
Burns Peak EL44/88  
Bulgobac Hill EL37/89  
Mount Sale EL14/98  
Tullah  
Rosebery  
Tullah EL22/90  
Moxon Saddle EL6/98  
Walford Peak EL24/96  
Dundas EL21/96  
Zeehan

Lake Barrington EL3/98

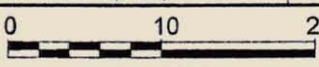
**Legend to Tenements**

- Tullah EL 22/90
- Other Pasminco EL's
- Rosebery Mine Lease

5 cm

5350000 mN

168032

	PASMINGO EXPLORATION EXPLORATION PROJECTS - TASMANIA	
	<b>MT READ BELT</b>	
<b>LOCATION MAP</b> <b>TULLAH EL22/90</b>		
Date: 24/09/1998	<b>FIG 1</b>	
Author:		
Drawn: ETS		
Ref:		
Revisions:	Projection: AMG Zone 55 (AGD86)	
Scale: 1:500,000	 0                      10                      20 KILOMETRES	

Strahan

Queenstown EL6/98  
Queenstown

COMPILED: P.G.R.  
DATE: July 1997  
DRAWN:  
REVISIONS  
FILE:  
DRAWING No.

E.L. 22/90 - TULLAH  
**REGIONAL GEOLOGY**  
FROM MAP 6 OF THE  
MT. READ VOLCANICS PROJECT

SCALE 0 2 4 km FIG. No 2

**ACKNOWLEDGMENT**  
Mt. Read Volcanics Project adopted from Map 6 - Geological  
Compilation Map of the Mt. Read Volcanics & Associated Rocks,  
from Hellyer to South Darwin Peak.  
K.D. Corbett B Sc (HON) PhD and A.W. McNeill B Sc (HON) 1988.

- QUATERNARY**  
Q Glacial deposits, alluvium, etc.
- TERTIARY**  
T<sub>1</sub> Basalt  
T<sub>2</sub> Sediments - gravel, sand, clays
- JURASSIC**  
J<sub>1</sub> Diorite
- PERMIAN - CARBONIFEROUS**  
P<sub>1</sub> Undifferentiated
- DEVONIAN**  
D<sub>1</sub> Diorite  
D<sub>2</sub> Granite
- DEVONIAN - SILURIAN**  
D<sub>3</sub> Bell Shale  
S<sub>1</sub> Florence Sandstone  
S<sub>2</sub> Silurian
- ORDOVICIAN**  
O<sub>1</sub> GORDON GROUP limestones
- EARLY ORDOVICIAN - LATE CAMBRIAN**  
CO<sub>1</sub> Upper sandstone sequence including Pioneer Beds (CO<sub>1u</sub>)  
CO<sub>2</sub> Undifferentiated conglomerate and sandstone (CO<sub>2</sub>)  
CO<sub>3</sub> Newton Creek Sandstone (CO<sub>3n</sub>) - interbedded sandstone siltstone and conglomerate with marine fossils

168033

5 cm

**MT. READ VOLCANICS**  
NORTH AND WEST OF HENTY FAULT  
DUNDAS GROUP AND CORRELATES

- Q<sub>1</sub> Quartz-feldspar porphyry, mostly intrusive
- Q<sub>2</sub> Mostly sedimentary rocks - greywacke, siltstone, conglomerate
- Q<sub>3</sub> Interbedded tuffs and sedimentary rocks
- Q<sub>4</sub> Quartzwacke-slate-siltstone units, e.g. Silti Quartzite
- Q<sub>5</sub> Mostly felsic volcanics - mainly tuffs
- Q<sub>6</sub> Mixed felsic and mafic volcanics and epiclastic breccias, Que-Hellyer area
- Q<sub>7</sub> Basaltic to andesitic volcanics

**CENTRAL VOLCANIC COMPLEX**

- CV<sub>1</sub> Mainly feldspar-phyric volcanics - dacite, rhyolite, minor andesite (Ccv)
- CV<sub>2</sub> Felsic porphyry, mainly intrusive
- CV<sub>3</sub> Mainly pyroclastic rocks
- CV<sub>4</sub> Sedimentary rocks, mainly shale and sandstone
- CV<sub>5</sub> Andesitic volcanics

**SOUTH AND EAST OF HENTY FAULT**  
LYNDALL GROUP AND CORRELATES

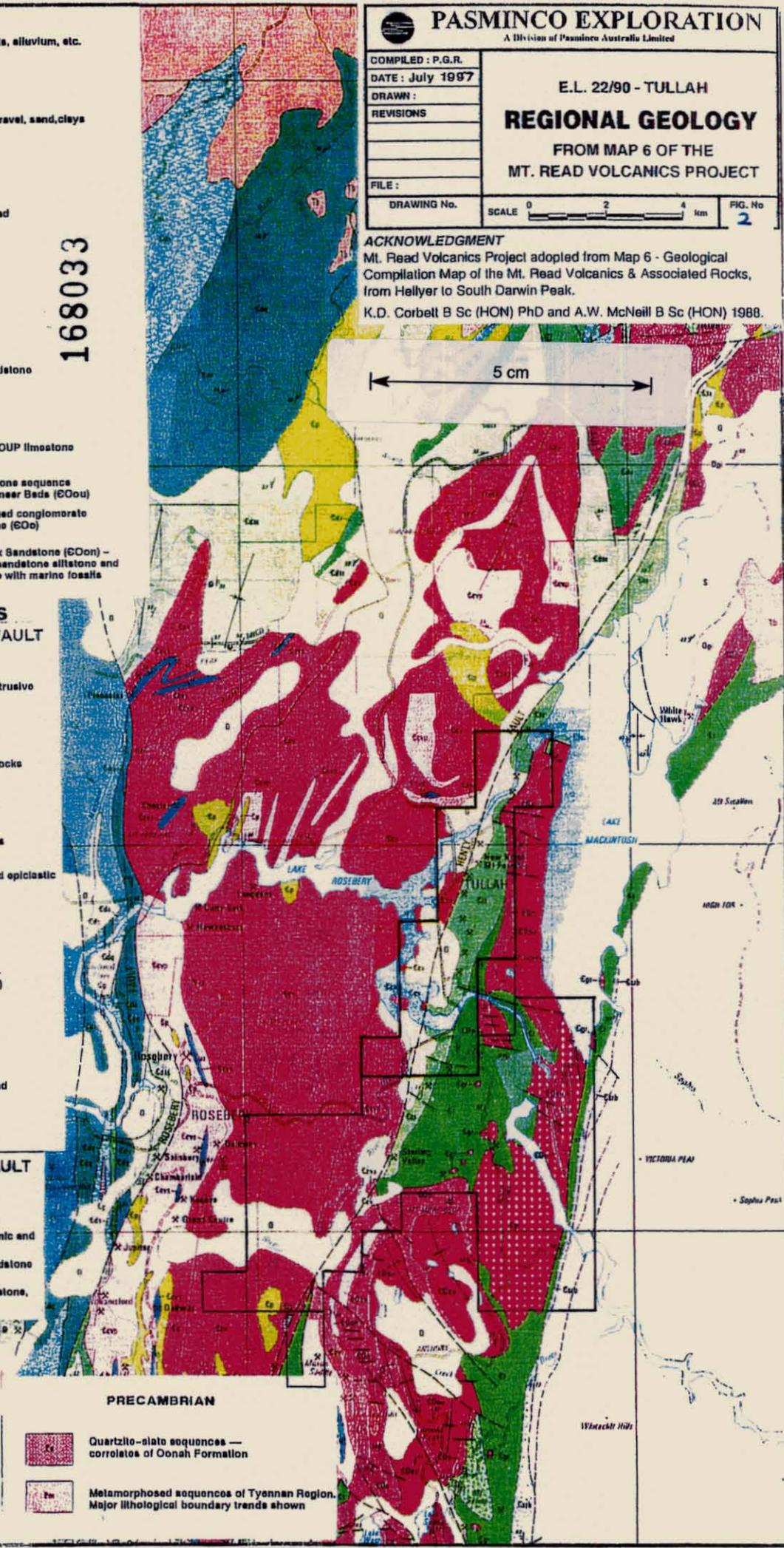
- LY<sub>1</sub> Mainly sed. rocks, incl Farrell Slates
- LY<sub>2</sub> Mainly quartz-feldspar-phyric volcanic and volcanoclastic rocks (L<sub>1</sub>)
- LY<sub>3</sub> Mainly volcanoclastic congl. and sandstone
- LY<sub>4</sub> Stichi Range Beds - sandstone, siltstone, siliciclastic conglomerate

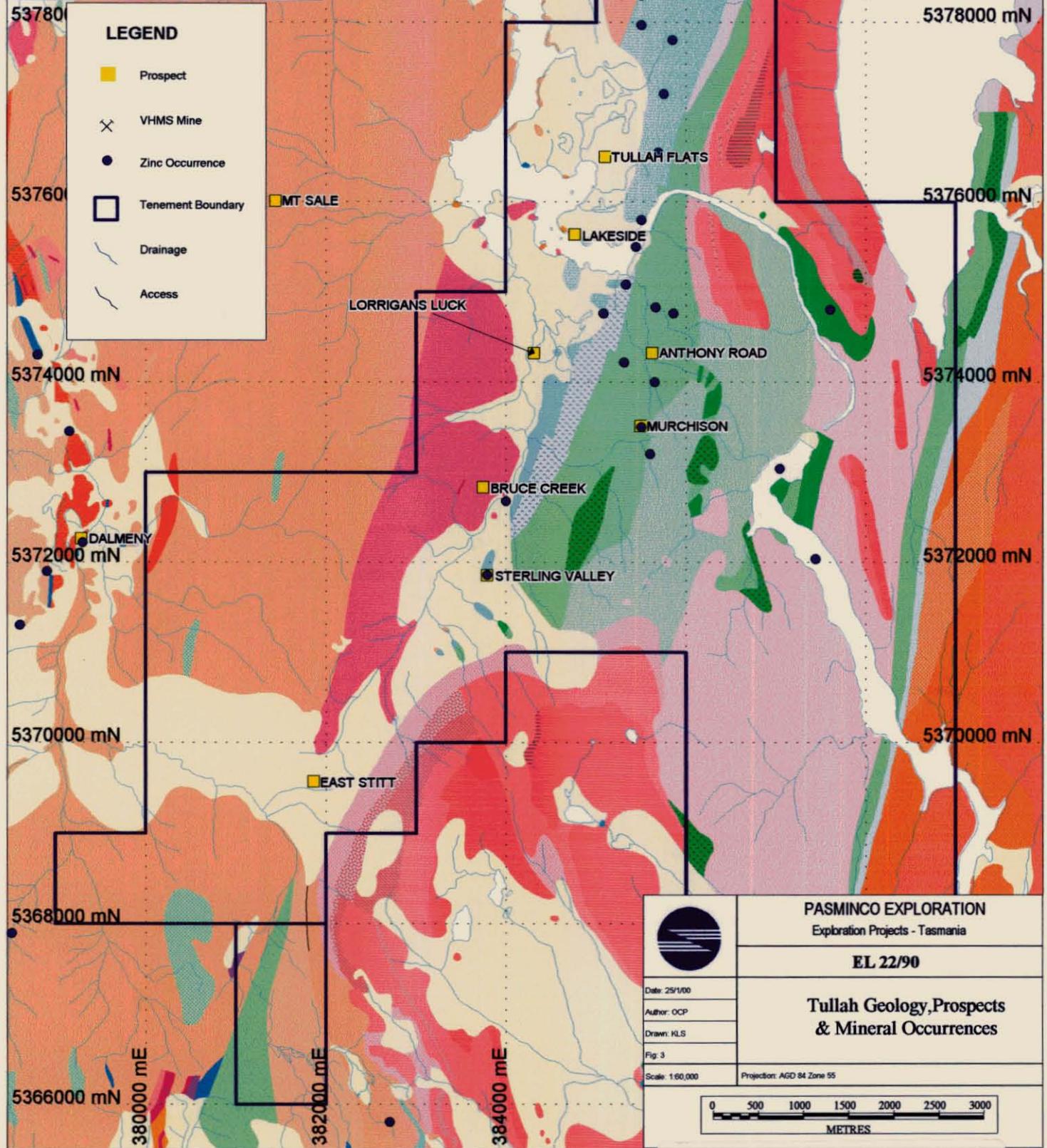
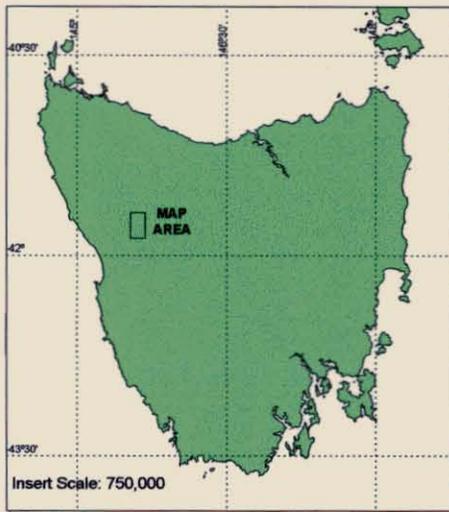
**CAMBRIAN INTRUSIVE ROCKS**

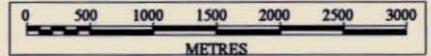
- CI<sub>1</sub> Granite
- CI<sub>2</sub> Felsic porphyry
- CI<sub>3</sub> Gabbro
- CI<sub>4</sub> Ultramafic rocks & serpentinite

**PRECAMBRIAN**

- P<sub>1</sub> Quartzite-slate sequences - correlates of Oonah Formation
- P<sub>2</sub> Metamorphosed sequences of Tyennan Region. Major lithological boundary trends shown

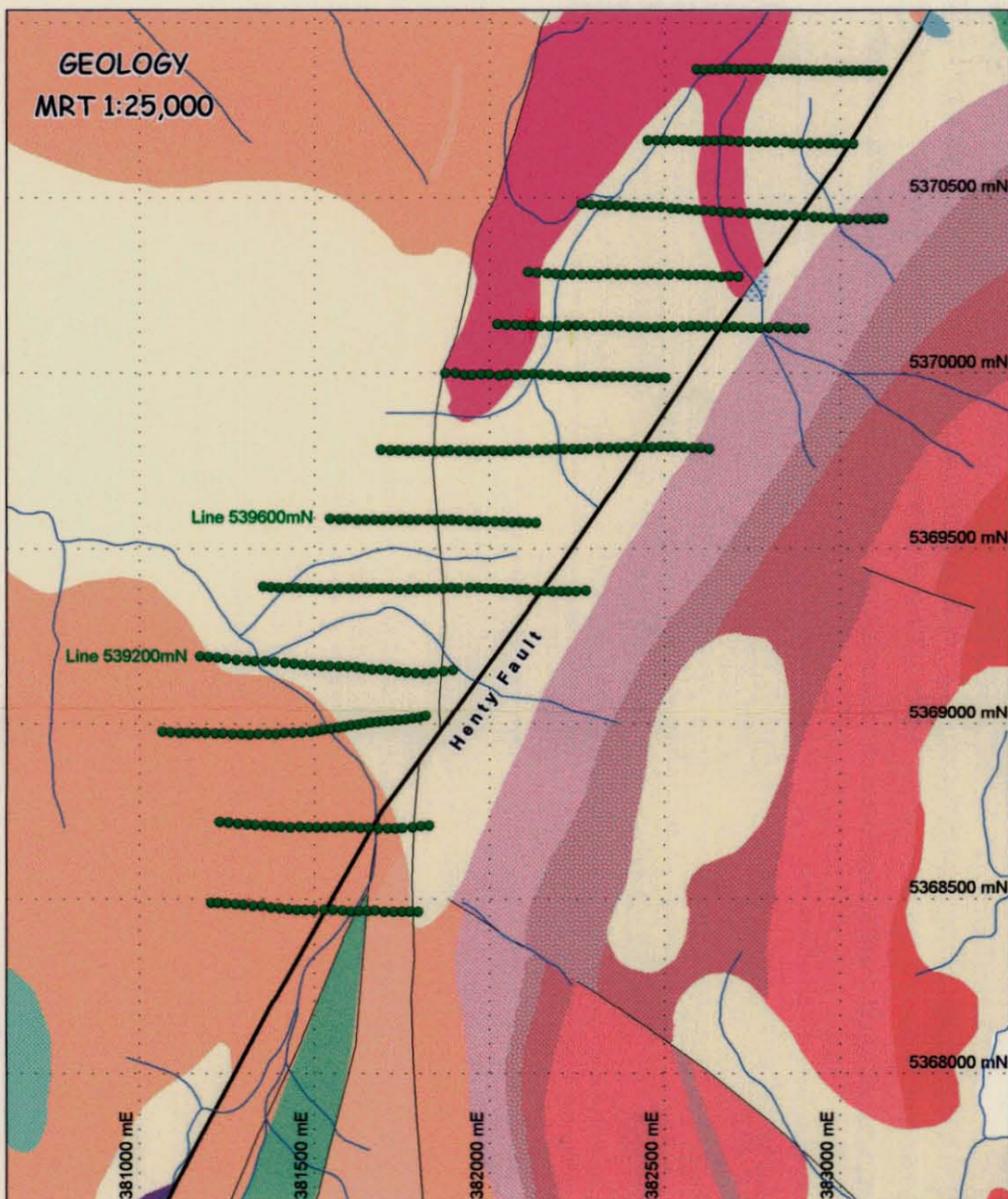
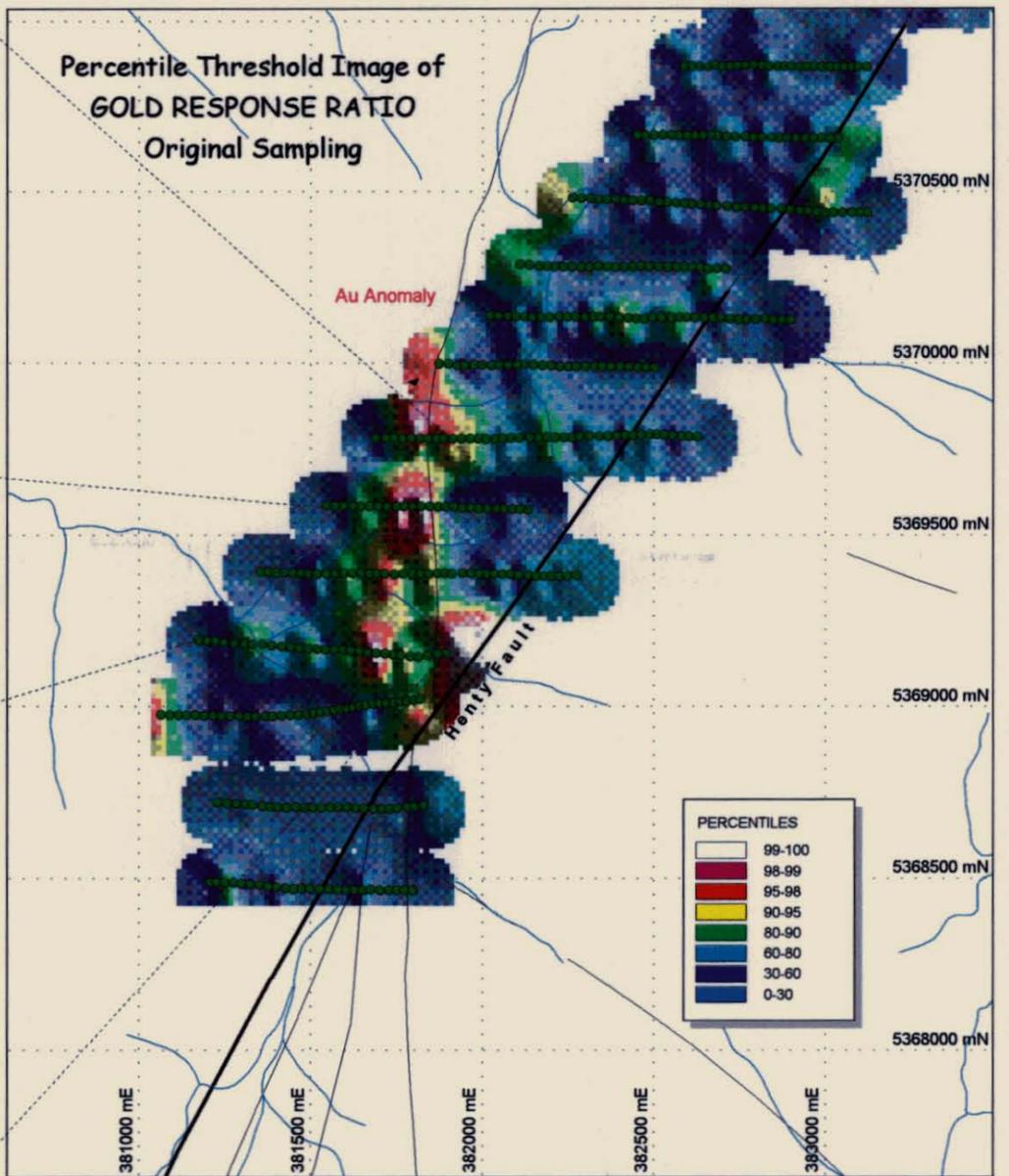
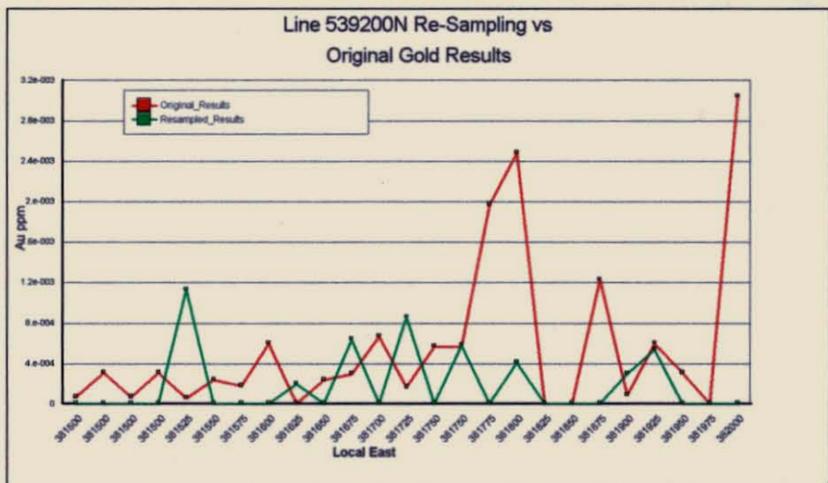
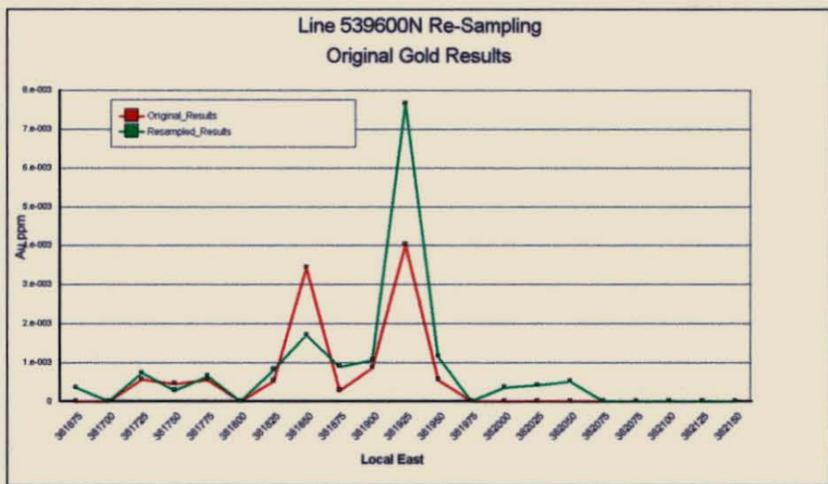




	<b>PASMINCO EXPLORATION</b> Exploration Projects - Tasmania
	<b>EL 22/90</b>
<b>Tullah Geology, Prospects &amp; Mineral Occurrences</b>	Date: 25/1/00 Author: OCP Drawn: KLS Fig. 3 Scale: 1:60,000 Projector: AGD 84 Zone 55
	

168034

5 cm



168035

<p>Author: O. Parthey Date: 19/12/2000 Office: Melbourne Drawn: O. Parthey / F. Brown Ref: GIS_00_011 Projection: AMG Zone 55 (AGD68)</p>	<p>TASMANIA TULLAH EL22/90</p>
	<p>Figure 4 East Stitt Prospect</p>
	<p>Gold Anomaly Resampling</p>
	<p>Scale: 1:20000</p> <p>250 0 250 500 m</p>
	<p>5 cm</p>

**APPENDIX 1**

**Bruce Creek Prospect - MMI Sampling  
Analytical Results**

Appendix 1  
MMI Assay Results  
Bruce Creek Grid

Sample No	Sample Type	UTM East	UTM North	Local East	Local North	Prospect/Local Grid Name	Tenement No	Ag ppm	As ppm	Au ppm	Ba ppm	Ce ppm	Co ppm	Cu ppm	Fe ppm	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm	Colour	SDS	Comments
304401	MMI	384360	5373600	384360	5373600	CREEK	22/90	0.0022	0.051	0.00022	0.422	0.037	0.037	0.244	19	-0.1	0.002	0.121	0.861	0.002	4.8	BROWN	3702	Thick bara; Opening up
304402	MMI	384225	5373301	384225	5373300	CREEK	22/90	0.0015	-0.001	0.00063	1.1	0.018	0.014	0.339	10	0.2	-0.001	0.037	1.3	-0.001	6.5	GREY	3702	
304403	MMI	384200	5373300	384200	5373300	CREEK	22/90	0.0087	3.6	0.0003	3.4	0.07	1.2	0.8	165	19.5	0.015	0.128	9.4	0.011	3.3	LIGHT BROWN	3702	Sampled edge of track
304404	MMI	384175	5373299	384175	5373300	CREEK	22/90	0.015	0.511	0.00047	0.679	0.003	0.094	0.208	50	0.9	0.005	0.028	1.8	-0.001	0.391	ORANGE/GREY	3702	Sampled edge of track
304405	MMI	383900	5373600	383900	5373600	CREEK	22/90	0.0011	1.6	0.00122	1.1	0.012	0.097	0.158	1250	2.1	0.007	0.156	3.8	0.004	0.943	ORANGE/BROWN	3702	Mild scrub
304406	MMI	383921	5373195	383925	5373200	CREEK	22/90	0.0041	0.715	0.00011	1.6	0.02	0.122	0.619	800	8.5	0.011	0.089	2.4	0.006	1.9	BROWN	3702	Mild scrub
304407	MMI	383895	5373198	383900	5373200	CREEK	22/90	-0.00005	1	0.0019	2.6	0.011	0.043	-0.001	2050	2.2	0.005	0.131	4.1	0.003	0.275	BROWN	3702	Start of line; Mild scrub
304408	MMI	384260	5373600	384260	5373600	CREEK	22/90	0.01	2.4	0.00087	1.8	0.025	1.6	1.3	240	19.5	0.012	0.103	8.5	0.008	1.3	BROWN	3702	Sample A taken 1m west of creek; Sample B taken 2m east of creek
304409	MMI	384278	5373300	384275	5373300	CREEK	22/90	0.0029	0.425	-0.00001	0.884	0.028	0.024	0.613	67	0.2	-0.001	0.586	3.1	0.004	2.1	ORANGE/BROWN	3702	
304410	MMI	383874	5373297	383875	5373300	CREEK	22/90	0.0067	0.769	0.00047	8.5	0.182	0.634	5.6	700	27.5	0.239	0.892	1.6	0.005	9.3	BROWN	3702	Open myrtle forest
304411	MMI	384251	5373301	384250	5373300	CREEK	22/90	0.0045	0.032	0.00037	1.4	0.024	0.049	1.4	17.5	0.8	0.006	0.343	3.7	0.001	6.2	BROWN	3702	
304412	MMI	383424	5372707	383425	5372700	CREEK	22/90	-0.00005	0.322	-0.00001	1.8	0.004	0.056	-0.001	550	0.7	0.013	0.107	3.8	0.001	-0.001	BROWN	3702	Thick tall scrub; light horizontal
304413	MMI	384307	5373300	384310	5373300	CREEK	22/90	0.0026	0.959	0.00044	1.7	0.006	0.019	0.325	35	-0.1	0.004	0.171	3.3	0.013	2.3	GREY	3702	Start of line; on edge of road
304415	MMI	383946	5373198	383950	5373200	CREEK	22/90	0.004	0.567	0.0006	3	0.013	0.063	0.315	900	1.7	-0.001	0.133	3.4	0.004	1.5	BROWN	3702	Mild scrub
304416	MMI	383924	5373098	383925	5373100	CREEK	22/90	0.0069	0.879	0.00043	2.8	0.012	0.123	0.648	1300	7	0.01	0.106	3.4	0.004	1.5	LIGHT BROWN	3702	
304417	MMI	383951	5373297	383950	5373300	CREEK	22/90	0.0065	2.2	0.00201	3.5	0.029	0.757	0.357	1900	9	0.016	0.256	9.4	0.006	3.1	LIGHT BROWN	3702	
304418	MMI	384251	5373096	384250	5373100	CREEK	22/90	0.0028	0.588	0.00038	0.665	0.029	0.02	0.319	240	0.1	0.008	0.33	2.4	0.014	1.7	GREY	3702	Start of line. On edge of road
304420	MMI	383925	5373297	383925	5373300	CREEK	22/90	-0.00005	1.8	0.00015	2.1	0.012	0.082	-0.001	1400	2.8	0.01	0.116	4.4	0.001	0.591	LIGHT BROWN	3702	
304421	MMI	384120	5373600	384120	5373600	CREEK	22/90	0.0028	12.5	0.00147	1.5	0.023	0.174	0.57	1450	0.9	0.006	0.346	4.8	0.004	3.4	ORANGE/BROWN	3702	Mild scrub
304422	MMI	383350	5372707	383350	5372700	CREEK	22/90	0.0014	0.483	0.00011	2.4	0.015	0.159	0.184	2100	8	0.016	0.159	5	0.002	0.774	ORANGE	3702	Open tall scrub
304423	MMI	383760	5373600	383760	5373600	CREEK	22/90	0.0055	2.5	0.00008	1.3	0.007	0.033	0.338	900	1.8	0.017	0.125	2.8	0.009	1.2	BROWN	3702	Mild scrub
304424	MMI	384220	5373600	384220	5373600	CREEK	22/90	-0.00005	0.832	0.00018	2.4	0.006	0.106	-0.001	1900	1.2	0.006	0.23	2.7	-0.001	0.257	BROWN	3702	Thick scrub
304425	MMI	384260	5373600	384260	5373600	CREEK	22/90	0.014	1.2	0.00007	8.6	0.03	0.335	0.351	390	2.7	0.02	0.136	6.7	0.005	1.2	BROWN	3702	Thick bush
304426	MMI	383025	5372702	383025	5372700	CREEK	22/90	-0.00005	0.254	-0.00001	1.3	0.006	0.066	-0.001	1300	0.8	0.009	0.126	4.8	-0.001	0.236	ORANGE	3702	Sample B taken on peg; Tall dense scrub
304427	MMI	384200	5373600	384200	5373600	CREEK	22/90	0.0011	2.8	0.00028	4	0.097	0.725	0.748	550	6	0.015	0.55	2.3	0.008	15.5	BROWN	3702	Sample A taken alongside creek; Thick scrub
304428	MMI	384000	5373600	384000	5373600	CREEK	22/90	-0.00005	2.7	0.00061	2.5	0.003	0.094	-0.001	2700	1.7	0.004	0.203	4.8	-0.001	-0.001	BROWN	3702	Mild scrub
304429	MMI	383740	5373600	383740	5373600	CREEK	22/90	0.0089	1.1	0.00001	80.0	0.017	0.097	0.289	1100	2	0.01	0.109	2.2	0.008	1.1	ORANGE/BROWN	3702	Mild scrub
304430	MMI	383801	5373297	383800	5373300	CREEK	22/90	0.015	2.7	0.00003	1.6	0.016	0.106	0.751	850	3.8	0.011	0.088	2.2	0.005	1.3	LIGHT BROWN	3702	End of line.
304431	MMI	384240	5373600	384240	5373600	CREEK	22/90	0.011	1.3	0.00016	4.5	0.019	0.147	0.244	440	0.8	0.007	0.078	6.4	0.004	0.886	ORANGE/GREY	3702	Thick bush
304432	MMI	383000	5372700	383000	5372700	CREEK	22/90	-0.00005	0.371	0.00006	3	0.008	0.161	-0.001	1800	1.8	0.002	0.111	6.4	0.005	0.256	ORANGE	3702	Tall dense bush; Full sample taken at peg. Start of line.
304433	MMI	383901	5373099	383900	5373100	CREEK	22/90	0.0078	1.2	0.00083	1.7	0.015	0.151	1.3	1100	11.5	0.013	0.107	3.1	0.01	1.5	ORANGE	3702	End of line.
304434	MMI	384020	5373600	384020	5373600	CREEK	22/90	0.013	13.5	0.00059	0.587	0.012	0.046	0.553	1650	1.1	0.01	0.185	2.4	0.014	0.228	ORANGE/BROWN	3702	Mild scrub
304435	MMI	384226	5373097	384225	5373100	CREEK	22/90	0.0069	0.21	0.00005	0.587	0.016	0.006	0.035	30.5	-0.1	-0.001	0.252	1.3	0.002	1.2	GREY	3702	
304436	MMI	384150	5373299	384150	5373300	CREEK	22/90	0.01	4.2	0.00139	1.5	0.019	0.464	3.1	800	12	0.009	0.126	6.2	0.006	5.6	ORANGE	3702	
304437	MMI	383899	5373297	383900	5373300	CREEK	22/90	0.0079	3.4	-0.00001	5.9	0.044	0.516	2.3	1100	29.5	0.01	0.206	8.5	0.016	9.1	BROWN	3702	
304438	MMI	384320	5373600	384320	5373600	CREEK	22/90	0.0034	0.307	0.00002	3.4	0.014	0.134	1	72	0.9	-0.001	0.076	5.7	0.004	1	BROWN	3702	Dense scrub
304439	MMI	383300	5372707	383300	5372700	CREEK	22/90	0.0001	0.46	-0.00001	1.9	0.005	0.091	0.733	1600	1.7	0.007	0.106	4.9	0.005	0.039	ORANGE/BROWN	3702	Open tall scrub
304440	MMI	384300	5373600	384300	5373600	CREEK	22/90	0.00095	0.873	0.0001	3	0.007	0.26	-0.001	390	2.6	0.008	0.027	6.2	0.005	0.227	BROWN	3702	Mild scrub
304441	MMI	383499	5372707	383500	5372700	CREEK	22/90	-0.00005	0.395	0.00001	1.5	0.009	0.081	0.101	1800	1.8	0.005	0.155	3.4	0.004	0.197	ORANGE	3702	Thick scrub and thick ground cover; End of line
304442	MMI	383325	5372706	383325	5372700	CREEK	22/90	0.0028	0.407	-0.00001	3.2	0.027	0.301	0.136	2100	9.5	-0.001	0.265	4.3	0.007	2	ORANGE	3702	Open tall scrub
304443	MMI	384200	5373099	384200	5373100	CREEK	22/90	0.0038	0.075	-0.00001	0.797	0.031	0.029	0.377	37	0.1	-0.001	0.291	2.9	0.001	2.2	GREY/BROWN	3702	Medium density myrtle forest.
304444	MMI	384100	5373600	384100	5373600	CREEK	22/90	0.00005	4.6	0.00104	2.4	0.004	0.353	-0.001	1200	3.3	-0.001	0.123	4.3	0.012	-0.001	BROWN	3702	Sample A taken 5m west of 4100E peg; Mild bush
304445	MMI	384050	5373600	384050	5373600	CREEK	22/90	-0.00005	3.8	0.031	0.912	0.003	0.046	-0.001	700	0.4	0.004	0.06	2.4	0.004	-0.001	BROWN	3702	Mild scrub
304446	MMI	383960	5373600	383960	5373600	CREEK	22/90	-0.00005	1.6	0.00034	2	0.004	0.201	-0.001	2800	3.8	-0.001	0.153	4.8	0.003	-0.001	ORANGE/BROWN	3702	Thick fern coverage on ground; Mild scrub
304447	MMI	383940	5373600	383940	5373600	CREEK	22/90	0.0005	5.6	0.00048	2.2	0.013	0.585	0.366	1950									

Appendix 1  
MMI Assay Results  
Bruce Creek Grid

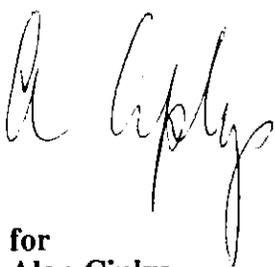
Sample No	Sample Type	UTM East	UTM North	Local East	Local North	Prospect/Local Grid Name	Tenement No	Ag ppm	As ppm	Au ppm	Ba ppm	Cd ppm	Co ppm	Cu ppm	Fe ppm	Mn ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Zn ppm	Colour	SDS	Comments
304458	MMI	383200	5372705	383200	5372700	CREEK	22/90	0.0059	0.069	0.00031	1.3	0.063	0.168	1.1	39.5	0.5	0.004	0.119	1.8	0.001	5.6	GREY	3702	Open tall scrub; thick ground cover.
304459	MMI	384040	5373600	384040	5373600	CREEK	22/90	0.00045	16	0.00059	0.847	0.005	0.035	0.016	1000	0.5	0.015	0.09	2.3	0.01	0.278	BROWN	3702	Mild scrub
304480	MMI	383276	5372705	383275	5372700	CREEK	22/90	0.00015	0.349	-0.00001	1.3	0.013	0.107	0.092	1200	2.1	0.007	0.12	3.3	0.003	0.774	ORANGE	3702	Tall thick scrub
304481	MMI	383125	5372705	383125	5372700	CREEK	22/90	0.004	0.144	0.00001	1.9	0.018	0.042	3.9	440	0.4	0.02	0.278	4.4	0.001	2.8	ORANGE/BROWN	3702	Open tall scrub; thick ground cover.
304482	MMI	384050	5373298	384050	5373300	CREEK	22/90	0.004	1.3	0.00058	1.9	0.014	0.904	0.425	2100	1.0	0.014	0.197	4.6	0.003	2.4	ORANGE	3702	Mild scrub
304483	MMI	384080	5373600	384080	5373600	CREEK	22/90	0.0025	3.2	0.00588	0.90	0.01	0.139	0.103	1700	2.7	0.017	0.124	2.8	0.007	0.723	BROWN	3702	Mild scrub
304484	MMI	383800	5373600	383800	5373600	CREEK	22/90	0.007	0.879	0.00017	3	0.025	1.4	0.918	1550	17.5	0.028	0.466	4.5	0.004	6.1	ORANGE	3702	Open scrub
304485	MMI	384001	5373101	384000	5373100	CREEK	22/90	0.0053	0.4	0.00013	2.7	0.014	0.84	1.1	1600	11	0.014	0.215	2	0.006	2	ORANGE	3702	
304486	MMI	384380	5373600	384380	5373600	CREEK	22/90	0.0009	0.08	0.00002	0.156	0.013	0.028	0.105	47.5	-0.1	-0.001	0.224	1.8	-0.001	0.416	BROWN	3702	Button grass
304487	MMI	383860	5373600	383860	5373600	CREEK	22/90	0.00015	11.5	0.002	1.2	0.008	0.032	-0.001	1050	0.9	0.011	0.082	3.4	0.008	0.269	BROWN	3702	Thick scrub
304488	MMI	383099	5372704	383100	5372700	CREEK	22/90	-0.00005	0.401	-0.00001	2.3	0.005	0.043	-0.001	650	0.4	0.007	0.083	3.3	0.002	0.055	ORANGE/BROWN	3702	Tall scrub; thick ground cover
304489	MMI	383780	5373600	383780	5373600	CREEK	22/90	0.0027	1.8	0.00016	1.8	0.016	0.125	0.199	1300	4.7	0.015	0.15	3.4	0.004	0.714	BROWN	3702	Mild scrub
304490	MMI	383975	5373098	383975	5373100	CREEK	22/90	0.032	0.851	0.00066	4.7	0.055	3.2	5.4	1350	40.5	0.02	0.52	3.5	0.01	8.6	LIGHT BROWN	3702	
304491	MMI	383820	5373600	383820	5373600	CREEK	22/90	0.0031	1.9	0.00011	0.958	0.009	0.138	0.231	1700	3.6	0.014	0.174	3.6	0.005	1.3	ORANGE/BROWN	3702	Fairly open scrub; thick ground cover
304492	MMI	384026	5373101	384025	5373100	CREEK	22/90	0.018	0.357	0.00033	2.1	0.022	1.6	7.8	1650	4.7	0.043	0.344	3.8	0.009	3.4	ORANGE/BROWN	3702	Open myrtle forest.
304493	MMI	383250	5372708	383250	5372700	CREEK	22/90	0.00035	0.382	0.00011	3.2	0.018	0.129	0.29	800	0.9	0.013	0.152	4.6	0.003	0.586	BROWN	3702	Thick tall scrub; thick ground cover
304494	MMI	384050	5373101	384050	5373100	CREEK	22/90	0.047	0.883	0.00021	4.3	0.04	1.8	6.6	1900	100	0.036	0.383	3.2	0.011	4.5	LIGHT BROWN	3702	
304495	MMI	384340	5373600	384340	5373600	CREEK	22/90	0.0062	0.715	0.0002	2.3	0.022	0.131	0.573	150	1.6	0.014	0.111	4.7	0.003	1.6	GREY/BROWN	3702	Sample A taken 3m west of creek
304496	MMI	384400	5373600	384400	5373600	CREEK	22/90	0.0024	0.085	0.00012	0.809	0.023	0.026	0.178	27.5	-0.1	-0.001	0.309	2.7	-0.001	1.4	GREY/BROWN	3702	Button grass and tea tree, End of line
304497	MMI	383880	5373600	383880	5373600	CREEK	22/90	-0.00005	4.2	0.00019	1	0.003	0.037	-0.001	1050	0.7	0.013	0.067	3.4	0.005	0.003	BROWN	3702	Mild scrub
304498	MMI	384025	5373298	384025	5373300	CREEK	22/90	0.017	1.1	0.00031	2.2	0.024	1.9	2.7	3300	42.5	0.014	0.312	6.2	0.008	5.1	ORANGE	3702	
304499	MMI	384001	5373299	384000	5373300	CREEK	22/90	0.005	0.793	0.00026	2.8	0.025	1.5	1.1	2100	26	0.017	0.332	6	0.006	4.6	BROWN	3702	
304500	MMI	383849	5373298	383850	5373300	CREEK	22/90	0.0059	0.505	-0.00001	2.1	0.006	0.03	0.334	490	0.7	0.007	0.106	4.4	0.002	0.64	DARK BROWN	3702	
304501	MMI	383175	5372705	383175	5372700	CREEK	22/90	0.0037	5.1	0.00094	3.5	0.021	0.203	0.228	2050	6.5	0.014	0.141	10	0.012	1.7	ORANGE	3702	Open tall scrub
304502	MMI	384126	5373098	384125	5373100	CREEK	22/90	0.0065	5.1	0.00007	3.9	0.019	1.5	1.5	195	40	0.023	0.308	18	0.014	8	BROWN	3702	Sample taken on edge of Sterling River
304503	MMI	383840	5373600	383840	5373600	CREEK	22/90	0.0001	3.6	0.00483	2.1	0.006	0.086	0.458	1000	2.9	0.02	0.122	8	0.014	0.112	BROWN	3702	Open scrub
304504	MMI	383450	5372708	383450	5372700	CREEK	22/90	-0.00005	0.622	0.00009	4.6	0.022	1.3	0.02	850	13	0.013	0.37	10.5	0.011	1.5	ORANGE/BROWN	3702	Open scrub; light horizontal; Sample A taken in rocky ground - little soil
304505	MMI	383700	5373600	383700	5373600	CREEK	22/90	0.0001	0.806	0.00012	0.978	0.002	0.036	0.005	1350	0.6	0.014	0.129	1.3	0.005	0.029	ORANGE	3702	Full sample taken at peg; Start of line; Thick bush
304506	MMI	383474	5372706	383475	5372700	CREEK	22/90	0.0003	3.41	0.00013	2.5	0.007	0.2	-0.001	1450	2.1	0.002	0.272	3.7	0.005	0.368	ORANGE	3702	Thick tall scrub
304507	MMI	383373	5372707	383375	5372700	CREEK	22/90	0.00025	0.282	0.00012	2.2	0.013	0.082	0.523	1450	2.8	0.004	0.204	4.3	0.004	0.23	ORANGE	3702	Thick tall scrub
304508	MMI	384180	5373600	384180	5373600	CREEK	22/90	0.0006	3.3	0.00235	5.5	0.119	0.737	0.846	125	11.5	0.003	0.679	2	0.013	19	BROWN	3702	Sample A taken 2m east of small creek; Mild scrub
304509	MMI	384140	5373600	384140	5373600	CREEK	22/90	0.0016	6.1	0.00025	5.7	0.087	0.754	0.192	600	10	0.006	0.5	3.2	0.013	3.5	ORANGE/BROWN	3702	Mild scrub
304510	MMI	384160	5373600	384160	5373600	CREEK	22/90	0.00095	3	0.00023	6.1	0.183	0.912	0.278	110	23	-0.001	0.835	2.4	0.004	12.5	BROWN	3702	Thick horizontal (young vegetation); Sample B taken 3m east of 4160E peg.
304511	MMI	383720	5373600	383720	5373600	CREEK	22/90	0.00025	0.758	0.00064	0.619	0.004	0.107	0.003	1700	2.8	0.002	0.117	3.1	0.005	0.053	ORANGE	3702	Thick fern cover on ground
304512	MMI	383824	5373297	383825	5373300	CREEK	22/90	0.0086	0.92	0.00013	1.4	0.01	0.025	0.268	1250	2	0.01	0.119	2.4	0.004	1.2	LIGHT BROWN	3702	
304513	MMI	384150	5373099	384150	5373100	CREEK	22/90	0.0076	2.2	0.00132	2.5	0.024	0.52	0.596	140	19	0.027	0.095	8	0.013	2	GREY/BROWN	3702	
304514	MMI	384078	5373298	384075	5373300	CREEK	22/90	0.0021	3.1	0.00112	2.1	0.016	0.828	0.14	2000	9.5	0.011	0.209	4.9	0.004	1.1	ORANGE	3702	Open myrtle forest
304515	MMI	384175	5373099	384175	5373100	CREEK	22/90	0.0059	0.179	0.00135	1.7	0.005	0.006	0.132	39.5	-0.1	0.008	0.045	1.5	0.001	0.896	GREY	3702	
304516	MMI	384100	5373299	384100	5373300	CREEK	22/90	0.015	4.1	0.00122	1.3	0.013	1.9	2.7	1450	34.5	0.016	0.153	5.8	0.011	2.5	ORANGE	3702	
304517	MMI	384075	5373100	384075	5373100	CREEK	22/90	0.0086	1.2	0.00064	1.3	0.031	0.762	4.6	1900	37.5	0.022	0.301	2.7	0.006	3.3	ORANGE	3702	
304518	MMI	384125	5373298	384125	5373300	CREEK	22/90	0.034	3.6	0.00097	3.6	0.057	2.5	5.2	1150	59	0.011	0.49	15.5	0.011	5.3	LIGHT BROWN	3702	
304519	MMI	384145	5373200	384150	5373200	CREEK	22/90	0.003	122	0.044	1.6	0.026	0.154	0.038	1100	5.5	0.005	0.154	7.7	0.024	0.339	BROWN	3702	Mild scrub
304520	MMI	384197	5373202	384200	5373200	CREEK	22/90	0.0059	2.6	0.00017	1.9	0.022	0.404	0.56	68	4	0.008	0.075	5.3	0.008	1.3	GREY/BROWN	3702	Sample A taken 1m west of river
304521	MMI	384247	5373202	384250	5373200	CREEK	22/90	0.0085	3.4	0.00002	1	0.01	0.024	0.162	280	0.3	0.011	0.172	2.7	0.01	0.379	BROWN	3702	Tall thick tea tree
304522	MMI	384265	5373208	384275	5373200	CREEK	22/90	0.0048	2.3	0.00005	0.428	0.008	0.013	0.314	380	0.1	0.006	0.133	0.973					

Appendix 1  
MMI Assay Results  
Bruce Creek Grid

Sample No.	Sample Type	UTM East	UTM North	Local East	Local North	Prospect/Local Grid Name	Tenement No.	Ag	As	Au	Ba	Cd	Co	Cu	Fe	Mn	Mo	Ni	Pb	Sb	Zn	Colour	SDS	Comments
304519	MMI	384220	5373202	384225	5373200	CREEK	22/90	0.0044	0.136	0.00057	2.7	0.011	0.166	0.443	32.5	2.9	0.001	0.338	5.1	0.003	2.6	BROWN	3702	Mild scrub
304520	MMI	383092	5373003	383100	5373000	CREEK	22/90	0.086	18.5	0.024	7.7	0.158	0.126	0.897	900	2.9	0.093	0.256	220	1.2	12.5	BROWN	3702	Start of line heading east: Sample taken 5m from highway; Full sample taken at peg
304521	MMI	383141	5373002	383150	5373000	CREEK	22/90	0.008	0.764	0.0007	3.7	0.026	0.361	0.495	1800	7	0.012	0.225	26	0.013	4.5	BROWN	3702	Sample A was taken 10m from highway; Thick scrub
304522	MMI	383190	5373003	383200	5373000	CREEK	22/90	0.0068	0.464	0.0008	1.6	0.031	0.391	0.439	1500	9	0.007	0.29	6.1	0.005	4.1	BROWN	3702	Mild scrub
304523	MMI	383241	5373003	383250	5373000	CREEK	22/90	0.035	0.398	0.0001	5.4	0.057	6	6.8	1400	65	0.005	0.695	10.5	0.005	12	BROWN	3702	Open scrub
304525	MMI	383317	5373003	383325	5373000	CREEK	22/90	0.014	0.776	0.00024	2.3	0.07	0.467	2.2	950	27	0.013	0.316	8	0.009	8.5	BROWN	3702	Thick horizontal
304526	MMI	383366	5373002	383375	5373000	CREEK	22/90	0.015	0.189	0.00012	1.2	0.041	0.513	3.2	950	35.5	0.007	0.33	3.1	0.002	5	BROWN	3702	Fairly open scrub
304527	MMI	383400	5373100	383400	5373100	CREEK	22/90	0.018	0.214	0.0002	4.7	0.036	1.7	5.9	2100	60	0.01	0.316	2.7	0.002	7	BROWN	3702	Start of line heading west; Mild horizontal
304528	MMI	383350	5373100	383350	5373100	CREEK	22/90	0.01	0.429	0.0001	4.7	0.073	1.4	1	1100	24	0.008	0.662	7.4	0.007	10	BROWN	3702	Mild scrub
304529	MMI	383971	5373198	383975	5373200	CREEK	22/90	0.0087	0.452	0.00045	3.7	0.016	0.285	0.686	1150	3.4	0.025	0.188	3.3	0.005	2	ORANGE/BROWN	3702	Mild scrub
304530	MMI	383997	5373199	384000	5373200	CREEK	22/90	0.011	0.265	0.00054	2.3	0.013	0.571	2	1250	5.5	0.009	0.292	3.2	0.005	2.5	BROWN	3702	Fairly open scrub
304531	MMI	384048	5373200	384050	5373200	CREEK	22/90	0.019	0.77	0.0008	0.679	0.027	1.6	3.9	1900	32	0.03	0.184	2.9	0.009	3.1	ORANGE/BROWN	3702	Dense scrub
304532	MMI	384096	5373201	384100	5373200	CREEK	22/90	0.011	1	0.00037	0.917	0.017	0.653	2.3	1500	14	0.016	0.185	2.9	0.006	1.5	ORANGE/BROWN	3702	Dense scrub
304533	MMI	383216	5373003	383225	5373000	CREEK	22/90	0.0041	0.307	0.00008	3.8	0.042	0.496	0.208	950	15	-0.001	0.268	5.5	0.003	4.8	BROWN	3702	Mild scrub
304534	MMI	383265	5373003	383275	5373000	CREEK	22/90	0.016	0.429	-0.00001	3.1	0.043	1.7	4.7	1800	51	0.015	0.308	5.2	0.004	5.9	BROWN	3702	Mild scrub
304535	MMI	383292	5373002	383300	5373000	CREEK	22/90	0.013	0.242	0.00041	2.5	0.039	0.477	2.8	1600	26.5	0.01	0.333	3.4	0.003	5.5	BROWN	3702	Mild scrub
304536	MMI	383341	5373002	383350	5373000	CREEK	22/90	0.011	0.55	-0.00001	1.6	0.026	0.564	2.9	1400	26	0.012	0.215	3.2	0.005	4.8	BROWN	3702	Thick bush
304537	MMI	383391	5373003	383400	5373000	CREEK	22/90	0.019	0.311	0.00082	4.1	0.069	1.2	3.3	420	40	-0.001	0.602	4.2	0.002	9	BROWN	3702	End of line; Mild scrub; a little horizontal
304538	MMI	383375	5373100	383375	5373100	CREEK	22/90	0.013	0.382	0.00013	5.5	0.037	1.4	3.5	1350	40	0.007	0.431	5.7	0.005	7.6	BROWN	3702	Open scrub; thick fern cover on ground
304539	MMI	383325	5373100	383325	5373100	CREEK	22/90	0.0035	0.736	0.00026	3.9	0.031	0.587	0.165	1650	9	0.006	0.355	7.5	0.005	2.9	BROWN	3702	Open scrub; thick fern coverage on ground
304540	MMI	383275	5373100	383275	5373100	CREEK	22/90	0.013	0.629	0.00001	3.1	0.049	1.4	2.4	1400	34.5	0.021	0.389	9	0.007	8.9	BROWN	3702	Dense bush
304541	MMI	383250	5373100	383250	5373100	CREEK	22/90	0.0071	0.451	0.00007	2.8	0.03	0.378	0.253	1500	16	0.013	0.248	6.9	0.004	2	BROWN	3702	Mild scrub
304542	MMI	383300	5373100	383300	5373100	CREEK	22/90	0.0094	0.317	-0.00001	2.1	0.029	1.1	2.6	1250	26.5	0.007	0.399	3.9	0.003	3.7	BROWN	3702	Mild scrub
304543	MMI	383225	5373100	383225	5373100	CREEK	22/90	0.0012	0.8	0.00014	1.1	0.003	0.096	0.05	1300	2.3	0.021	0.126	5.5	0.007	0.055	BROWN	3702	Thick scrub
304544	MMI	383200	5373100	383200	5373100	CREEK	22/90	0.0035	0.55	0.00014	1.9	0.016	0.095	0.166	1300	2.2	0.023	0.163	5.8	0.006	0.859	BROWN	3702	Mild scrub
304545	MMI	383175	5373100	383175	5373100	CREEK	22/90	0.013	1.2	0.00014	2.5	0.042	0.303	0.625	1250	13	0.027	0.218	6	0.008	2.8	BROWN	3702	Mild scrub
304546	MMI	383150	5373100	383150	5373100	CREEK	22/90	0.0014	0.284	0.00013	2.5	0.023	0.215	0.078	1050	1.7	0.01	0.276	5.1	0.005	1.3	BROWN	3702	Mild horizontal
304547	MMI	383125	5373100	383125	5373100	CREEK	22/90	0.013	0.386	0.00006	6.7	0.052	0.157	1.6	1100	0.7	0.03	0.313	6.1	0.004	4.4	BROWN	3702	Horizontal forest; fern coverage on ground
304548	MMI	383100	5373100	383100	5373100	CREEK	22/90	0.0013	0.273	0.00002	2.5	0.022	0.171	0.015	2050	5.5	0.006	0.241	5.1	0.004	1.1	BROWN	3702	Mild scrub; Sample B taken on crossover track (383100E)

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Tas  
Tullah  
Bruce ck

**FINAL ANALYSIS REPORT****Your Order No: 3702****Our Job Number : 8AD3284****Sample rec'd : 08/12/98****Results reported : 18/12/98****No. of samples : 148****Report comprises a cover sheet and pages 1 to 9****Approved Signature:****for  
Alan Ciplys  
Manager - Mineral Chemistry****Report Codes:  
N.A. - Not Available.  
L.N.R. - Listed But Not Received.  
I.S. - Insufficient Sample.****Distribution Codes:  
CC - Carbon Copy  
EM - Electronic Media  
MM - Magnetic Media**

Final

## ANALYTICAL REPORT

SAMPLE	Ag	As	Au	Ba	Bi	Cd	Co
304401	2.2	51	0.22	422	5.6	37	37
304402	1.5	<1	0.63	1000	1.0	18	14
304403	8.7	3600	0.30	3400	16	70	1200
304404	15	511	0.47	679	1.3	3	94
304405	1.1	1800	1.22	1100	24	12	97
304406	4.1	715	0.11	1600	14	20	122
304407	<0.05	1000	1.90	2600	38	11	43
304408	10	2400	0.87	1800	2.6	25	1600
304409	2.9	425	<0.01	884	<0.1	28	24
304410	6.7	769	0.47	8500	2.2	182	634
304411	4.5	32	0.37	1400	<0.1	24	49
304412	<0.05	322	<0.01	1800	5.0	4	56
304413	2.6	959	0.44	1700	<0.1	6	19
304414	14	1800	0.32	3600	4.8	31	858
304415	4.0	567	0.60	3000	7.8	13	63
304416	6.9	879	0.43	2800	8.3	12	123
304417	6.5	2200	2.01	3500	13	29	757
304418	2.8	588	0.38	665	<0.1	29	20
304419	<0.05	2500	0.76	2300	21	3	90
304420	<0.05	1800	0.15	2100	11	12	82
304421	2.8	12500	1.47	1500	33	23	174
304422	1.4	483	0.11	2400	8.3	15	159
304423	5.5	2500	0.08	1300	2.4	7	33
304424	<0.05	832	0.18	2400	3.1	6	106
304425	14	1200	0.07	6600	5.4	30	335
304426	<0.05	254	<0.01	1300	0.3	8	66
304427	1.1	2800	0.28	4000	<0.1	97	725
304428	<0.05	2700	0.61	2500	21	3	94
304429	8.9	1100	0.01	801	8.9	17	97
304430	15	2700	0.03	1600	11	16	106
304431	11	1300	0.16	4500	13	19	147
304432	<0.05	371	0.06	3000	13	8	161
304433	7.8	1200	0.83	1700	26	15	151
304434	13	13500	0.59	587	216	12	46
304435	6.9	210	0.05	587	11	16	6
304436	10	4200	1.39	1600	20	19	464
304437	7.9	3400	<0.01	5900	24	44	516
304438	3.4	307	0.02	3400	4.6	14	134
304439	0.10	460	<0.01	1900	17	5	91
304440	0.95	873	0.10	3000	16	7	260
304441	<0.05	395	0.01	1500	17	9	81
304442	2.8	407	<0.01	3200	11	27	301
304443	3.8	75	<0.01	797	1.2	31	29
304444	0.05	4600	1.04	2400	57	4	353
304445	<0.05	3800	31	912	112	3	46
304446	<0.05	1600	0.34	2000	37	4	201
304447	0.50	5600	0.48	2200	43	13	585
304448	9.3	1400	0.26	3500	33	33	3200
304449	27	1900	32	2500	9.2	73	1100
304450	0.05	393	0.01	1700	13	7	46
UNITS	ppb						
DET. LIM	0.05	1	0.01	1	0.1	1	1
SCHEME	IC8/40						
UPPER SCHEME		IC8M					

Final

ANALYTICAL REPORT

SAMPLE	Ag	As	Au	Ba	Bi	Cd	Co
304451	<0.05	382	<0.01	1500	13	6	120
304452	<0.05	3300	5.43	1600	26	4	33
304453	12	2000	0.04	5000	14	35	958
304454	4.1	175	0.03	1800	6.4	29	109
304455	5.1	90	0.09	2300	2.1	49	76
304456	<0.05	309	0.05	1600	9.7	8	47
304457	<0.05	5100	0.69	1600	75	5	245
304458	5.9	69	0.31	1300	5.9	63	168
304459	0.45	16000	0.69	847	108	5	35
304460	0.15	349	<0.01	1300	24	13	107
304461	4.0	144	0.01	1900	5.2	18	42
304462	4.0	1300	0.58	1900	13	14	904
304463	2.5	3200	5.88	930	44	10	139
304464	7.0	879	0.17	3000	6.7	25	1400
304465	5.3	400	0.13	2700	3.0	14	840
304466	0.90	80	0.02	156	<0.1	13	28
304467	0.15	11500	2.00	1200	87	8	32
304468	<0.05	401	<0.01	2300	11	5	43
304469	2.7	1800	0.16	1800	5.2	16	125
304470	32	851	0.66	4700	4.0	55	3200
304471	3.1	1900	0.11	958	<0.1	9	138
304472	18	357	0.33	2100	3.4	22	1600
304473	0.35	382	0.11	3200	6.8	18	129
304474	47	883	0.21	4300	3.2	40	1800
304475	6.2	715	0.20	2300	<0.1	22	131
304476	2.4	85	0.12	809	<0.1	23	28
304477	<0.05	4200	0.19	1000	2.7	3	37
304478	17	1100	0.31	2200	12	24	1900
304479	5.0	793	0.26	2800	9.5	25	1500
304480	5.9	505	<0.01	2100	0.8	6	30
304481	3.7	5100	0.94	3500	2.0	21	203
304482	9.5	5100	0.07	3900	0.5	191	1500
304483	0.10	3600	4.83	2100	4.4	6	86
304484	<0.05	622	0.08	4600	13	22	1300
304485	0.10	806	0.12	978	6.8	2	36
304486	0.30	341	0.13	2500	15	7	200
304487	0.25	282	0.12	2200	11	13	82
304488	0.50	3300	2.35	5500	6.0	119	737
304489	1.6	6100	0.25	5700	19	87	754
304490	0.95	3000	0.23	6100	5.7	183	912
304491	<0.05	411	0.02	1500	14	8	79
304492	0.25	758	0.64	819	6.9	4	107
304493	8.6	920	0.13	1400	14	10	25
304494	7.6	2200	1.32	2500	7.4	24	520
304495	2.1	3100	1.12	2100	10	16	828
304496	5.8	179	1.35	1700	2.0	5	6
304497	15	4100	1.22	1300	21	13	1900
304498	8.6	1200	0.64	1300	10	31	762
304499	19	3900	1.71	1200	20	12	2000
304500	34	3600	0.97	3600	34	57	2500
UNITS	ppb						
DET. LIM	0.05	1	0.01	1	0.1	1	1
SCHEME	IC8/40						
UPPER SCHEME		IC8M					

Final

## ANALYTICAL REPORT

SAMPLE	Ag	As	Au	Ba	Bi	Cd	Co
304501	3.0	122000	44	1600	180	26	154
304502	5.9	2600	0.17	1900	15	22	404
304503	8.5	3400	0.02	1000	20	10	24
304504	4.8	2300	0.05	428	15	8	13
304505	0.20	570	0.08	3200	13	11	227
304506	0.40	848	3.38	2100	15	5	96
304507	7.5	1900	0.51	1500	7.0	22	59
304508	0.20	450	0.64	1400	13	4	102
304509	3.9	609	0.18	1900	13	24	207
304510	8.1	632	0.76	2200	24	31	297
304511	3.6	69	0.67	1200	1.1	78	19
304512	3.8	69	1.16	1200	0.7	77	20
304515	5.0	478	0.95	1300	38	13	271
304516	12	1100	0.64	825	26	15	1400
304517	8.0	6300	1.65	1200	41	10	318
304518	2.7	5100	1.14	3100	35	18	716
304519	4.4	136	0.57	2700	<0.1	11	166
304520	86	16500	24	7700	56	158	126
304521	8.0	764	0.70	3700	12	26	361
304522	6.8	464	0.80	1600	3.5	31	391
304523	35	398	0.10	5400	2.1	57	6000
304524	15	441	0.05	3200	<0.1	46	1700
304525	14	776	0.24	2300	11	70	467
304526	15	189	0.12	1200	1.3	41	513
304527	18	214	0.20	4700	<0.1	36	1700
304528	10.0	429	0.10	4700	8.1	73	1400
304529	8.7	452	0.45	3700	16	16	285
304530	11	265	0.54	2300	7.0	13	571
304531	19	770	0.80	879	12	27	1600
304532	11	1000	0.37	917	16	17	653
304533	4.1	307	0.08	3800	6.2	42	496
304534	16	429	<0.01	3100	<0.1	43	1700
304535	13	242	0.41	2500	<0.1	39	477
304536	11	550	<0.01	1600	<0.1	26	564
304537	19	311	0.82	4100	<0.1	69	1200
304538	13	382	0.13	5500	1.6	37	1400
304539	3.5	736	0.26	3900	3.1	31	587
304540	13	629	0.01	3100	5.9	49	1400
304541	7.1	451	0.07	2800	2.9	30	378
304542	9.4	317	<0.01	2100	0.4	29	1100
304543	1.2	800	0.14	1100	20	3	96
304544	3.5	550	0.14	1900	19	16	95
304545	13	1200	0.14	2500	17	42	303
304546	1.4	284	0.13	2500	11	23	215
304547	13	386	0.06	6700	8.4	52	157
304548	1.3	273	0.02	2500	8.2	22	171
304549	4.2	63	0.82	1400	0.8	75	20
304550	4.0	62	0.82	1400	0.7	80	19

UNITS	ppb						
DET. LIM	0.05	1	0.01	1	0.1	1	1
SCHEME	IC8/40						
UPPER SCHEME		IC8M					

Final

ANALYTICAL REPORT

SAMPLE	Cu	Mo	Ni	Pb	Sb	Zn	Sm
304401	244	2	121	861	2	4800	9
304402	339	<1	37	1300	<1	6500	8
304403	800	15	128	9400	11	3300	31
304404	208	5	28	1800	<1	391	10
304405	158	7	156	3800	4	943	21
304406	619	11	89	2400	6	1900	17
304407	<1	5	131	4100	3	275	8
304408	1300	12	103	8500	8	1300	38
304409	613	<1	586	3100	4	2100	14
304410	5600	238	892	1600	5	9300	221
304411	1400	6	343	3700	1	6200	32
304412	<1	13	107	3800	1	<1	56
304413	325	4	171	3300	13	2300	30
304414	3900	14	248	4000	8	5600	49
304415	315	<1	133	3400	4	1500	22
304416	648	10	106	3400	4	1500	24
304417	357	16	256	9400	6	3100	27
304418	319	6	330	2400	14	1700	8
304419	<1	4	186	4200	1	<1	17
304420	<1	10	116	4400	1	591	19
304421	570	6	346	4800	4	3400	14
304422	184	16	159	5000	2	774	74
304423	338	17	125	2800	9	1200	22
304424	<1	6	230	2700	<1	257	18
304425	351	20	136	6700	5	1200	40
304426	<1	9	126	4600	<1	236	107
304427	748	15	550	2300	8	15500	65
304428	<1	4	203	4800	<1	<1	26
304429	289	10	109	2200	8	1100	33
304430	751	11	88	2200	5	1300	37
304431	244	7	78	6400	4	886	39
304432	<1	2	111	6400	5	256	149
304433	1300	13	107	3100	10	1500	25
304434	553	10	186	2400	14	228	10
304435	35	<1	252	1300	2	1200	17
304436	3100	9	126	6200	6	5600	90
304437	2300	10	206	8500	16	9100	70
304438	1000	<1	76	5700	4	1000	74
304439	733	7	106	4900	5	39	69
304440	<1	8	27	6200	5	227	44
304441	101	5	155	3400	4	197	41
304442	136	<1	265	4300	7	2000	171
304443	377	<1	291	2900	1	2200	28
304444	<1	<1	123	4300	12	<1	14
304445	<1	4	60	2400	4	<1	8
304446	<1	<1	153	4800	3	<1	35
304447	366	<1	247	8400	7	745	45
304448	2600	6	281	11500	8	4000	95
304449	5800	18	283	5400	15	4500	139
304450	164	<1	125	3600	2	<1	75

UNITS	ppb						
DET. LIM	1	1	1	1	1	1	1
SCHEME	IC8/40						
UPPER SCHEME				IC8M		IC8M	

Final

ANALYTICAL REPORT

SAMPLE	Cu	Mo	Ni	Pb	Sb	Zn	Sm
304451	<1	<1	101	3700	4	<1	30
304452	<1	2	84	4900	5	<1	42
304453	3900	7	250	4400	9	6100	50
304454	76	<1	175	2600	2	1200	158
304455	362	9	207	1600	<1	6000	44
304456	<1	<1	83	3800	1	123	55
304457	<1	11	186	4400	8	234	19
304458	1100	4	119	1800	1	5600	15
304459	16	15	90	2300	10	278	11
304460	92	7	120	3300	3	774	104
304461	3900	20	278	4400	1	2800	20
304462	425	14	197	4600	3	2400	26
304463	103	17	124	2800	7	723	24
304464	918	28	466	4500	4	6100	57
304465	1100	14	215	2000	6	2000	17
304466	105	<1	224	1800	<1	416	24
304467	<1	11	82	3400	8	269	27
304468	<1	7	83	3300	2	55	47
304469	199	15	150	3400	4	714	23
304470	5400	20	520	3500	10	8600	41
304471	231	14	174	3600	5	1300	35
304472	7800	43	344	3800	9	3400	47
304473	290	13	152	4600	3	586	24
304474	6600	36	383	3200	11	4900	103
304475	573	14	111	4700	3	1600	31
304476	178	<1	309	2700	<1	1400	16
304477	<1	13	67	3400	5	3	29
304478	2700	14	312	6200	8	5100	56
304479	1100	17	332	6000	6	4600	31
304480	334	7	106	4400	2	640	13
304481	228	14	141	10000	12	1700	78
304482	1500	23	308	18000	14	8000	51
304483	458	20	122	8000	14	112	36
304484	20	13	370	10500	11	1500	119
304485	5	14	129	1300	5	29	6
304486	<1	2	272	3700	5	368	30
304487	523	4	204	4300	4	230	48
304488	846	3	679	2000	13	19000	70
304489	192	6	500	3200	13	3600	76
304490	278	<1	835	2400	4	12500	92
304491	3	6	164	3400	5	153	46
304492	3	2	117	3100	5	53	58
304493	268	10	119	2400	4	1200	30
304494	596	27	95	8000	13	2000	38
304495	140	11	209	4900	4	1100	23
304496	132	8	45	1500	1	896	11
304497	2700	16	153	5800	11	2500	21
304498	4600	22	301	2700	6	3300	38
304499	2600	15	140	5900	12	2100	21
304500	5200	11	490	15500	11	5300	132

UNITS	ppb						
DET. LIM	1	1	1	1	1	1	1
SCHEME	IC8/40						
UPPER SCHEME				IC8M		IC8M	



Final

## ANALYTICAL REPORT

SAMPLE	La	Cr	Fe	Mn	pH
304401	102	0.1	19.0	<0.1	9.6
304402	74	<0.1	10.0	0.2	9.7
304403	211	0.1	165	19.5	10.4
304404	61	<0.1	50.0	0.9	10.7
304405	134	0.8	1250	2.1	9.2
304406	131	0.2	800	8.5	10.0
304407	78	0.4	2050	2.2	9.0
304408	216	0.2	240	19.5	10.5
304409	107	0.3	67	0.2	7.4
304410	1500	0.4	700	27.5	9.8
304411	224	<0.1	17.5	0.8	8.9
304412	414	0.2	550	0.7	9.5
304413	300	0.1	35.0	<0.1	10.0
304414	224	0.4	1050	25.5	9.8
304415	151	0.3	900	1.7	9.1
304416	186	0.4	1300	7.0	9.6
304417	153	0.9	1900	9.0	9.3
304418	63	0.4	240	0.1	9.3
304419	105	1.0	2500	1.5	9.5
304420	136	0.3	1400	2.8	9.6
304421	73	0.5	1450	0.9	8.8
304422	540	0.8	2100	8.0	9.6
304423	134	0.5	900	1.8	9.7
304424	104	1.2	1900	1.2	8.8
304425	280	0.2	390	2.7	9.5
304426	729	0.5	1300	0.8	9.7
304427	322	0.5	550	6.0	10.2
304428	129	1.2	2700	1.7	9.5
304429	172	0.6	1100	2.0	9.8
304430	260	0.3	850	3.8	9.9
304431	229	0.3	440	0.8	9.5
304432	1100	0.7	1800	1.8	9.3
304433	166	0.4	1100	11.5	9.9
304434	70	0.5	1650	1.1	9.5
304435	181	0.1	30.5	<0.1	9.2
304436	318	0.5	800	12.0	10.3
304437	450	0.5	1100	29.5	9.4
304438	588	0.1	72	0.9	9.9
304439	358	0.7	1600	1.7	9.3
304440	285	0.2	390	2.6	9.8
304441	222	1.1	1800	1.8	9.5
304442	750	1.1	2100	9.5	9.5
304443	226	0.1	37.0	0.1	8.4
304444	86	0.4	1200	3.3	9.1
304445	62	0.3	700	0.4	9.4
304446	159	1.5	2800	3.8	9.5
304447	269	1.4	1950	6.5	9.5
304448	653	1.1	2800	35.5	9.1
304449	437	0.4	1050	27.0	10.1
304450	376	0.8	1450	0.8	9.4
UNITS	ppb	ppm	ppm	ppm	
DET. LIM	1	0.1	0.1	0.1	0.1
SCHEME	IC8/40	IC8/40	IC8/40	IC8/40	SIE4

Final

ANALYTICAL REPORT

SAMPLE	La	Cr	Fe	Mn	pH
304451	232	0.4	1050	0.5	9.2
304452	303	0.8	1850	1.3	9.4
304453	231	0.5	1150	32.0	9.7
304454	982	1.0	1900	4.3	9.7
304455	241	<0.1	135	2.2	8.8
304456	409	0.3	900	0.3	8.9
304457	105	0.8	1800	3.5	9.7
304458	96	<0.1	38.5	0.6	9.2
304459	94	0.4	1000	0.5	9.6
304460	658	0.5	1200	2.1	9.8
304461	129	0.2	440	0.4	7.9
304462	104	0.8	2100	10.0	9.5
304463	123	0.6	1700	2.7	9.8
304464	278	1.0	1550	17.5	9.3
304465	85	0.4	1600	11.0	9.5
304466	264	0.1	47.5	<0.1	9.2
304467	220	0.5	1050	0.9	9.5
304468	299	0.3	650	0.4	9.2
304469	145	1.0	1300	4.7	9.5
304470	330	0.7	1350	40.5	9.7
304471	171	1.1	1700	3.6	9.8
304472	181	0.5	1550	47.0	9.7
304473	164	0.3	800	0.9	8.9
304474	449	0.6	1900	100	9.6
304475	183	0.1	150	1.6	9.5
304476	157	0.3	27.5	<0.1	9.3
304477	198	0.5	1050	0.7	9.6
304478	223	1.9	3300	42.5	9.7
304479	157	0.8	2100	26.0	9.6
304480	122	0.2	490	0.7	8.6
304481	359	1.1	2050	6.5	9.8
304482	290	0.1	195	40.0	10.2
304483	263	0.6	1000	2.9	9.6
304484	498	0.7	850	13.0	9.6
304485	44	0.9	1350	0.6	9.6
304486	162	1.1	1450	2.1	9.6
304487	359	0.7	1450	2.8	9.3
304488	395	0.2	125	11.5	10.2
304489	438	0.4	600	10.0	9.8
304490	491	0.2	110	23.0	9.9
304491	255	1.1	1700	2.0	9.6
304492	220	1.1	1700	2.8	9.9
304493	184	0.6	1250	2.0	9.9
304494	267	0.1	140	19.0	10.0
304495	128	3.0	2000	9.5	9.6
304496	78	0.1	39.5	<0.1	10.3
304497	92	0.8	1450	34.5	10.1
304498	66	0.6	1900	37.5	9.9
304499	75	0.8	1350	35.0	10.1
304500	772	0.7	1150	59	9.3
UNITS	ppb	ppm	ppm	ppm	
DET. LIM	1	0.1	0.1	0.1	0.1
SCHEME	IC8/40	IC8/40	IC8/40	IC8/40	SIE4

Final

## ANALYTICAL REPORT

SAMPLE	La	Cr	Fe	Mn	pH
304501	105	0.4	1100	5.5	9.3
304502	102	<0.1	88	4.0	10.1
304503	143	0.6	280	0.3	9.6
304504	63	0.9	380	0.1	10.0
304505	258	1.1	1800	2.4	9.5
304506	170	0.6	1300	0.9	9.4
304507	200	0.6	1250	1.8	9.1
304508	409	0.6	1150	1.7	9.6
304509	321	1.0	2050	16.0	9.6
304510	288	1.5	2300	37.0	9.6
304511	366	<0.1	14.5	0.2	9.4
304512	388	<0.1	7.0	0.1	9.3
304515	86	0.5	1750	4.8	9.8
304516	42	0.7	1950	24.0	10.0
304517	104	1.4	2100	8.0	10.0
304518	219	0.7	1450	6.5	9.5
304519	137	0.1	32.5	2.9	10.0
304520	423	0.7	900	2.9	10.1
304521	227	1.1	1800	7.0	9.8
304522	67	0.9	1500	9.0	9.6
304523	804	0.8	1400	65	9.2
304524	220	0.9	1650	45.5	9.7
304525	119	0.4	950	27.0	9.6
304526	115	0.3	950	35.5	9.9
304527	307	0.5	2100	60	9.8
304528	139	0.4	1100	24.0	9.1
304529	381	0.4	1150	3.4	8.6
304530	164	0.3	1250	5.5	8.5
304531	148	0.4	1900	32.0	9.9
304532	80	0.6	1500	14.0	9.6
304533	105	0.4	950	15.0	9.0
304534	221	1.0	1800	51	9.6
304535	152	0.8	1600	26.5	9.9
304536	228	0.6	1400	26.0	9.9
304537	96	0.2	420	40.0	8.0
304538	110	0.5	1350	40.0	9.4
304539	104	0.6	1650	9.0	9.1
304540	260	0.6	1400	34.5	9.4
304541	379	0.6	1500	16.0	9.5
304542	150	0.5	1250	26.5	9.5
304543	149	0.5	1300	2.3	9.3
304544	115	0.4	1300	2.2	9.1
304545	181	0.4	1250	13.0	9.5
304546	181	0.3	1050	1.7	9.1
304547	211	0.3	1100	0.7	8.2
304548	484	0.9	2050	5.5	9.3
304549	340	<0.1	14.5	0.2	9.3
304550	337	<0.1	7.0	0.1	9.3

UNITS	ppb	ppm	ppm	ppm	
DET.LIM	1	0.1	0.1	0.1	0.1
SCHEME	IC8/40	IC8/40	IC8/40	IC8/40	SIE4

**APPENDIX 2**

**Bruce Creek Prospect - Diamond Drilling  
Analytical Results - BCD1 & BCD2**

Appendix 2  
Assay Results  
DDH BCD1 BCD2  
Bruce Creek Prospect

Hole ID	Sample No	Sample Type	Depth From	Depth To	Ag	Au	Ba	Br	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Na	Nb	Ni	P	Pb	Fl	Y	Zn	Zr	SDS	Date	Comments
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
BCD1	165901	1/2 CORE	20.25	20.9	-0.1	0	775	1.2	19500	0.4	19	78	7	45000	22000	19200	1560	28000		33	620	6	-0.5		192	3712	1-Mar-99		
BCD1	165902	1/2 CORE	20.9	22.1	0.1	0.01	1230	3	14400	0.4	24	140	40	55500	46500	18500	1260	10400		95	590	11	0.8		165	3712	1-Mar-99		
BCD1	165903	1/2 CORE	55.4	55.6																10				34	225	3713	9-Mar-99		
BCD1	165904	1/2 CORE	70.5	70.7																6				23	175	3713	9-Mar-99		
BCD1	165905	1/2 CORE	75.1	75.8	0.6	0.01	565	0.7	29000	2.6	19	42	9	74000	27500	21000	6520	12800		-10	605	356	1.1		738	3712	1-Mar-99		
BCD1	165906	1/2 CORE	99.2	99.4																8				28	199	3713	9-Mar-99		
BCD1	165907	1/2 CORE	110.2	111.2	0.2	0	53	0.3	37500	0.3	-5	76	12	20500	2750	10600	935	52000		13	510	22	-0.5		76	3712	1-Mar-99		
BCD1	165908	1/2 CORE	111.2	112.2	-0.1	0	52	0.1	41500	0.4	-5	31	-5	21500	1550	11700	1010	58000		-10	555	18	-0.5		91	3712	1-Mar-99		
BCD1	165909	1/2 CORE	112.2	113.2	-0.1	0	83	0.3	42500	0.3	9	44	-5	27500	2650	13000	1120	53500		11	470	6	-0.5		88	3712	1-Mar-99		
BCD1	165910	1/2 CORE	113.2	113.9	0.1	0	34	-0.1	46500	0.2	-5	28	-5	7940	1550	3370	720	59500		-10	365	5	-0.5		15	3712	1-Mar-99		
BCD1	165911	1/2 CORE	113.9	114.9	-0.1	0	84	0.4	41000	0.3	6	52	25	30000	2200	14400	1230	51000		13	450	5	-0.5		95	3712	1-Mar-99		
BCD1	165912	1/2 CORE	121.3	121.5																6				44	129	3713	9-Mar-99		
BCD1	165913	1/2 CORE	123.4	125	11	0.28	145	1.6	17900	2.9	8	77	120	91000	27500	10100	50500	730		-10	360	7200	1.6		5980	3712	1-Mar-99		
BCD1	165914	1/2 CORE	125	125.4	2.5	0	145	0.2	13400	7.9	9	45	20	71500	26500	21500	7480	6670		12	520	606	1.6		1860	3712	1-Mar-99		
BCD1	165915	1/2 CORE	131.6	131.8																3				38	116	3713	9-Mar-99		
BCD1	165916	1/2 CORE	133.6	134.2	4.5	0.05	240	0.8	15700	12	7	100	22	55500	27000	11000	30000	1180		-10	360	791	1.5		2800	3712	1-Mar-99	Intersection on core was marked at 133.6	
BCD1	165917	1/2 CORE	138.7	139.2	6.5	0.01	390	0.5	6300	30	-5	90	89	35500	38500	5850	23000	430		-10	435	441	2.1		6480	3712	1-Mar-99		
BCD1	165918	1/2 CORE	139.2	139.7	3.5	0.01	400	0.2	4990	9.3	-5	86	34	62000	31500	7940	48000	590		-10	360	1080	1.5		2210	3712	1-Mar-99		
BCD1	165919	1/2 CORE	139.7	140.2	8.7	0.01	405	0.5	6100	18	-5	75	42	60000	31000	8960	47000	420		-10	360	2120	1.6		4320	3712	1-Mar-99		
BCD1	165921	1/2 CORE	140.2	140.7	2.7	0.25	385	0.6	5990	16	6	82	30	56000	32500	9370	30000	405		10	385	1675	1.5		3620	3712	1-Mar-99		
BCD1	165922	1/2 CORE	140.7	141.8	7.8	0.02	275	0.5	9950	14	8	50	10	62500	31500	15300	19400	1000		11	460	1625	1.5		3360	3712	1-Mar-99		
BCD1	165923	1/2 CORE	149.3	149.5																10				30	228	3713	9-Mar-99		
BCD2	165924	1/2 CORE	0	3	0.4	0	225	0.3	450	0.5	39	95	46	116000	8800	9710	3910	1300		37	375	111	-0.5		275	3712	1-Mar-99	1-7m of core cut	
BCD2	165925	1/2 CORE	3	4.5	1.4	0	315	0.8	380	0.9	38	100	79	117000	5850	18600	6520	1060		66	515	77	0.5		579	3712	1-Mar-99	1-2m of core cut	
BCD2	165926	1/2 CORE	4.5	6	2.9	0.01	315	1.9	505	1.9	34	420	122	144000	5600	35000	10300	105		105	545	247	-0.5		932	3712	1-Mar-99	80cm of core cut	
BCD2	165927	1/2 CORE	6	8	2.9	0.01	165	1.3	575	2.4	36	470	66	154000	4400	44500	9130	190		135	525	344	-0.5		1600	3712	1-Mar-99		
BCD2	165928	1/2 CORE	8	9	2.8	0	115	1.5	615	5.3	38	500	92	162000	2350	59000	13400	75		155	475	317	-0.5		1060	3712	1-Mar-99		
BCD2	165929	1/2 CORE	15	16	1.8	0	405	0.3	685	4.1	16	60	-5	86500	30500	24000	10200	5870		44	430	898	1		1015	3712	1-Mar-99		
BCD2	165930	1/2 CORE	16.5	17	6.4	0.02	61	11	700	0.5	-5	53	933	198000	3350	16800	7000	110		18	435	58	-0.5		291	3712	1-Mar-99		
BCD2	165931	1/2 CORE	17	18	3.1	0.01	140	16	1190	0.7	16	43	819	168000	11900	13900	5090	325		30	480	66	0.7		299	3712	1-Mar-99		
BCD2	165932	1/2 CORE	18	19	2.5	0	170	22	1630	1.4	18	36	789	136000	15000	19300	5630	4150		33	620	155	0.9		476	3712	1-Mar-99		
BCD2	165933	1/2 CORE	23.5	24	1.0	0.08	69	63	2020	1.2	18	69	4160	183000	4600	21500	7290	1160		29	430	112	-0.5		378	3712	1-Mar-99		
BCD2	165934	1/2 CORE	27.5	28	0.4	0	460	1.9	1330	0.2	24	50	28	76000	23000	25500	2780	15800		37	395	17	0.7		313	3712	1-Mar-99		
BCD2	165935	1/2 CORE	40	41	0.8	0	360	1.1	21500	0.6	18	14	26	50000	20500	19300	2250	18900		-10	635	41	0.7		183	3712	1-Mar-99		
BCD2	165936	1/2 CORE	41	42	0.6	0	385	0.4	7450	0.5	17	23	6	54000	22500	21000	1540	17900		11	615	12	0.6		139	3712	1-Mar-99		
BCD2	165937	1/2 CORE	42.5	44.1	0.4	0	380	0.2	3250	0.3	23	36	-5	68000	18900	24000	2440	20000		31	425	9	0.5		181	3712	1-Mar-99		
BCD2	165938	1/2 CORE	45.2	46.2	1.6	0	340	0.9	2500	2.1	20	79	29	124000	22000	25500	9330	8310		36	335	120	1.2		684	3712	1-Mar-99		
BCD2	165939	1/2 CORE	48	49	3	0	140	2.2	35000	2.1	6	95	119	66000	8350	11300	5420	23000		19	235	182	0.6		541	3712	1-Mar-99		
BCD2	165941	1/2 CORE	50	52	0.5	0	91	0.2	59000	0.2	-5	115	13	32500	3600	9090	2090	29500		18	195	15	-0.5		88	3712	1-Mar-99		
BCD2	165942	1/2 CORE	56	57	0.5	0	110	0.1	37000	0.1	9	110	58	35500	4000	15400	1580	31000		26	230	7	-0.5		106	3712	1-Mar-99		
BCD2	165943	1/2 CORE	57	58	0.2	0	210	0.1	54000	-0.1	21	65	-5	53000	8100	25500	1920	31500		39	300	5	-0.5		151	3712	1-Mar-99		
BCD2	165944	1/2 CORE	60	60.5	1.2	0	230	4.3	33500	1.1	15	62	102	110000	16700	22500	4330	9060		25	310	131	0.7		341	3712	1-Mar-99		
BCD2	165945	1/2 CORE	60.5	61	0.6	0	325	0.4	83500	0.8	10	28	-5	49000	21500	19200	4040	18200		24	390	46	0.6		231	3712	1-Mar-99		
BCD2	165946	1/2 CORE	61	62	0.7	0	295	0.2	81500	0.1	15	28	79	42000	17700	19500	2070	20500		26	325	6	-0.5		93	3712	1-Mar-99		
BCD2	165947	1/2 CORE	62	64	0.2	0	255	0.1	98500	0.1	14	39	8	35500	16700	19100	2000	18900		30	305	4	-0.5		76	3712	1-Mar-99		
BCD2	165948	1/2 CORE	64	66	0.4	0	155	0.1	65500	0.3	19	57	6	60500	9550	28000	2680	23000		39	340	16	-0.5		189	3712	1-Mar-99		
BCD2	165949	1/2 CORE	66	68	0.2	0	135	-0.1	77500	0.1	16	48	-5	39500	7300	19000	1790	28000		37	305	4	-0.5		120	3712	1-Mar-99		
BCD2	165950	1/2 CORE	68	69	0.3	0	330	0.2	60000	0.2	7	47	-5	38000	23000	14500	1910	7400		25	275	18	0.6		93	3712	1-Mar-99		
BCD2	165951	1/2 CORE	69	70	4.9	0.03	175	10	8290	2.8	20	110	519	145000	18000	7800	8530	510		-10	290	70	1.2		672	3712	1-Mar-99		
BCD2	165952	1/2 CORE	70	72	0.5	0	250	0.5	37500	0.2	28	92	92	67500	14800	23000	5650	14600		53	355	26	1		107	3712	1-Mar-99		
BCD2	165953	1/2 CORE	73	74	0.5	0	375	0.3	14800	0.6	20	61	15	94000	15200	25000	4820	4300		25	450	39	0.9		237	3712	1-Mar-99		
BCD2	165954	1/2 CORE	74	75.4	0.5	0	335	2.1	7780	1.1	23	51	51	105000	14400	26500	5700	910		29	425	42	0.9		367	3712	1-Mar-99		



Our reference : BU015997  
 Your reference : **Despatch 3712**  
 Project code : Drill Core  
 Date received : 16/03/99  
 Date reported : 15/04/99

**Analabs Pty. Ltd.**  
 ACN 004 591 664  
 14 Thirkell St, Burnie  
 Tasmania 7320  
 Telephone : (03) 6431 6837  
 Facsimile : (03) 6431 8890

Owen Parfrey

Pasminco Exploration  
 P.O. Box 1291K  
 Melbourne

VIC 3001

*Tas:*  
*Tullah*  
*Burnie*

Number of pages of results : 8  
 Number of Samples : 52  
 First Sample : 165901  
 Last Sample : 165958

Invoice to:  
 Owen Parfrey

Pasminco Exploration  
 P.O. Box 1291K  
 Melbourne

VIC 3001

Electronic Data Transmission :

Modem //  
 Facsimile //  
 Disk Report //

Preliminary Reports :  
 08/04/99 Report

Results to:

Results to:

Remarks :

Authorised by .....  
 On behalf of:

Rob Chapman  
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory  
 for preparation and/or analysis as requested by the client.



Our reference : BU015997  
 Your reference : Despatch 3712  
 Project code : Drill Core  
 Report date : 15/04/99  
 Report status : Final  
 Page : 1 of 8

Analabs Pty. Ltd.  
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 14 Thirkell St, Burnie  
 Tasmania 7320  
 Telephone : (03) 6431 6837  
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### ANALYTICAL DATA

Sample	Co	Cu	Cr	Ni	Fe	Mn
165901	19	7	78	33	4.50%	1560
165902	24	40	140	95	5.55%	1260
165905	19	9	42	<10	7.40%	6520
165907	<5	12	76	13	2.05%	935
165908	<5	<5	31	<10	2.15%	1010
165909	9	<5	44	11	2.75%	1120
165910	<5	<5	28	<10	7940	720
165911	6	25	52	13	3.00%	1230
165913	8	120	77	<10	9.10%	5.05%
165914	9	20	45	12	7.15%	7480
165916	7	22	100	<10	5.55%	3.00%
165917	<5	89	90	<10	3.55%	2.30%
165918	<5	34	86	<10	6.20%	4.80%
165919	<5	42	75	<10	6.00%	4.70%
165920	64	402	1170	500	8.85%	580
165921	6	30	82	10	5.60%	3.00%
165922	8	10	50	11	6.25%	1.94%
165924	39	46	95	37	11.6%	3910
165925	38	79	100	66	11.7%	6520
165926	34	122	420	105	14.4%	1.03%
165927	36	66	470	135	15.4%	9130
165928	38	92	500	155	16.2%	1.34%
165929	16	<5	60	44	8.65%	1.02%
165930	<5	933	53	18	19.8%	7000
165931	16	819	43	30	16.8%	5090
165932	18	789	36	33	13.6%	5630
165933	18	4160	69	29	18.3%	7290
165934	24	28	50	37	7.60%	2780
165935	18	26	14	<10	5.00%	2250
165936	17	6	23	11	5.40%	1540
165937	23	<5	36	31	6.80%	2440
165938	20	29	79	36	12.4%	9330
165939	6	119	95	19	6.60%	5420
165940	34	<5	125	10	2.15%	43
165941	<5	13	115	18	3.25%	2090
165942	9	58	110	26	3.55%	1580
165943	21	<5	65	39	5.30%	1920
165944	15	102	62	25	11.0%	4330
165945	10	<5	28	24	4.90%	4040
165946	15	79	28	26	4.20%	2070
165947	14	8	39	30	3.55%	2000
165948	19	6	57	39	6.05%	2680
165949	16	<5	48	37	3.95%	1790
165950	7	<5	47	25	3.80%	1910
165951	20	519	110	<10	14.5%	8530
165952	28	92	92	53	6.75%	5650
165953	20	15	61	25	9.40%	4820
165954	23	51	51	29	10.5%	5700
165955	30	42	79	21	3.45%	66
165956	<5	37	185	11	1.80%	78
Method	1104	1104	1104	1104	1104	1104
Units	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	5	10	10	100	10
Upper Method						1105

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received





Our reference : BU015997  
 Your reference : Despatch 3712  
 Project code : Drill Core  
 Report date : 15/04/99  
 Report status : Final  
 Page : 3 of 8

Analabs Pty. Ltd.  
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### ANALYTICAL DATA

Sample	Zn	Na	Ca	Mg	K	P
165901	192	2.80%	1.95%	1.92%	2.20%	620
165902	165	1.04%	1.44%	1.85%	4.65%	590
165905	738	1.28%	2.90%	2.10%	2.75%	605
165907	76	5.20%	3.75%	1.06%	2150	510
165908	91	5.80%	4.15%	1.17%	1550	555
165909	88	5.35%	4.25%	1.30%	2650	470
165910	15	5.95%	4.65%	3370	1550	365
165911	95	5.10%	4.10%	1.44%	2200	450
165913	5980	730	1.79%	1.01%	2.75%	360
165914	1860	6670	1.34%	2.15%	2.65%	520
165916	2800	1180	1.57%	1.10%	2.70%	360
165917	6480	430	6300	5850	3.85%	435
165918	2210	590	4990	7940	3.15%	360
165919	4320	420	6100	8960	3.10%	360
165920	719	1260	6090	6860	2.45%	335
165921	3620	405	5990	9370	3.25%	385
165922	3360	1000	9950	1.53%	3.15%	460
165924	275	1300	450	9710	8800	375
165925	579	1060	380	1.86%	5850	515
165926	932	105	505	3.50%	5600	545
165927	1600	190	575	4.45%	4400	525
165928	1060	75	615	5.90%	2350	475
165929	1015	5870	685	2.40%	3.05%	430
165930	291	110	700	1.68%	3350	435
165931	299	325	1190	1.39%	1.19%	480
165932	476	4150	1630	1.93%	1.50%	620
165933	378	1160	2020	2.15%	4600	430
165934	313	1.58%	1330	2.55%	2.30%	395
165935	183	1.89%	2.15%	1.93%	2.05%	635
165936	139	1.79%	7450	2.10%	2.25%	615
165937	181	2.00%	3250	2.40%	1.89%	425
165938	684	8310	2500	2.55%	2.20%	335
165939	541	2.30%	3.50%	1.13%	8350	235
165940	40	1430	210	7240	4.85%	210
165941	88	2.95%	5.90%	9090	3600	195
165942	106	3.10%	3.70%	1.54%	4000	230
165943	151	3.15%	5.40%	2.55%	8100	300
165944	341	9060	3.35%	2.25%	1.67%	310
165945	231	1.82%	8.35%	1.92%	2.15%	390
165946	93	2.05%	8.15%	1.95%	1.77%	325
165947	76	1.89%	9.85%	1.91%	1.67%	305
165948	189	2.30%	6.55%	2.80%	9550	340
165949	120	2.80%	7.75%	1.90%	7300	305
165950	93	7400	6.00%	1.45%	2.30%	275
165951	672	510	8290	7800	1.80%	290
165952	107	1.46%	3.75%	2.30%	1.48%	355
165953	237	4300	1.48%	2.50%	1.52%	450
165954	367	910	7780	2.65%	1.44%	425
165955	134	1160	105	7220	4.80%	370
165956	<5	655	95	3490	2.70%	235
Method	1104	1104	1104	1104	1104	1104
Units	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	5	50	50	20	500	30

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received





Our reference : BU015997  
 Your reference : Despatch 3712  
 Project code : Drill Core  
 Report date : 15/04/99  
 Report status : Final  
 Page : 5 of 8

Analabs Pty. Ltd.  
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### ANALYTICAL DATA

Sample	Au	Au(R)	Ba			
165901	4	--	775			
165902	7	--	1230			
165905	5	--	565			
165907	2	--	53			
165908	2	--	52			
165909	2	--	83			
165910	2	2	34			
165911	3	--	84			
165913	282	288	145			
165914	4	--	145			
165916	45	--	240			
165917	8	--	390			
165918	6	--	400			
165919	7	--	405			
165920	90	--	595			
165921	254	256	385			
165922	17	22	275			
165924	3	--	225			
165925	4	--	315			
165926	7	--	315			
165927	8	--	165			
165928	3	--	115			
165929	3	3	405			
165930	16	--	61			
165931	6	--	140			
165932	4	--	170			
165933	81	72	69			
165934	2	--	460			
165935	3	--	360			
165936	2	--	385			
165937	2	--	380			
165938	1	--	340			
165939	3	--	140			
165940	302	--	1150			
165941	3	--	91			
165942	2	--	110			
165943	2	--	210			
165944	3	--	230			
165945	2	--	325			
165946	3	--	295			
165947	3	--	255			
165948	2	--	155			
165949	1	1	135			
165950	1	--	330			
165951	30	30	175			
165952	2	--	250			
165953	2	--	375			
165954	2	--	335			
165955	276	330	1140			
165956	1110	--	560			
Method	F651	F651	X401			
Units	ppb	ppb	ppm			
Detection Limit	1	1	10			
Upper Method	F652					

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received





Our reference : BU015997  
 Your reference : Despatch 3712  
 Project code : Drill Core  
 Report date : 15/04/99  
 Report status : Final  
 Page : 7 of 8

Analabs Pty. Ltd.  
 ACN 004 591 664  
 14 Thirkell St, Burnie  
 Tasmania 7320  
 Telephone : (03) 6431 6837  
 Facsimile : (03) 6431 8890

### ANALYTICAL DATA

Sample	Ag	Bi	Cd	Pb	Tl
165901	<0.1	1.2	0.4	6	<0.5
165902	0.1	3.0	0.4	11	0.8
165905	0.6	0.7	2.6	356	1.1
165907	0.2	0.3	0.3	22	<0.5
165908	<0.1	0.1	0.4	18	<0.5
165909	<0.1	0.3	0.3	6	<0.5
165910	0.1	<0.1	0.2	5	<0.5
165911	<0.1	0.4	0.3	5	<0.5
165913	10.7	1.6	28.8	7200	1.6
165914	2.5	0.2	7.9	606	1.6
165916	4.5	0.8	12.4	791	1.5
165917	6.5	0.5	30.1	441	2.1
165918	3.5	0.2	9.3	1080	1.5
165919	8.7	0.5	18.4	2120	1.6
165920	1.5	0.5	0.4	180	1.0
165921	2.7	0.6	15.7	1675	1.5
165922	7.8	0.5	14.3	1625	1.5
165924	0.4	0.3	0.5	111	<0.5
165925	1.4	0.8	0.9	77	0.5
165926	2.9	1.9	1.9	247	<0.5
165927	2.9	1.3	2.4	344	<0.5
165928	2.8	1.5	5.3	317	<0.5
165929	1.8	0.3	4.1	898	1.0
165930	6.4	11.0	0.5	58	<0.5
165931	3.1	16.3	0.7	66	0.7
165932	2.5	21.7	1.4	155	0.9
165933	10.0	63.1	1.2	112	<0.5
165934	0.4	1.9	0.2	17	0.7
165935	0.8	1.1	0.6	41	0.7
165936	0.6	0.4	0.5	12	0.6
165937	0.4	0.2	0.3	9	0.5
165938	1.6	0.9	2.1	120	1.2
165939	3.0	2.2	2.1	182	0.6
165940	<0.1	<0.1	<0.1	4	<0.5
165941	0.5	0.2	0.2	15	<0.5
165942	0.6	0.1	0.1	7	<0.5
165943	0.2	0.1	<0.1	5	<0.5
165944	1.2	4.3	1.1	131	0.7
165945	0.6	0.4	0.8	46	0.6
165946	0.7	0.2	0.1	6	<0.5
165947	0.2	0.1	0.1	4	<0.5
165948	0.4	0.1	0.3	16	<0.5
165949	0.2	<0.1	0.1	4	<0.5
165950	0.3	0.2	0.2	18	0.6
165951	4.9	10.2	2.8	70	1.2
165952	0.5	0.5	0.2	26	1.0
165953	0.5	0.3	0.6	39	0.9
165954	0.5	2.1	1.1	42	0.9
165955	<0.1	0.9	0.2	41	1.9
165956	0.2	0.6	0.3	26	1.1
Method Units Detection Limit Upper Method	M104 ppm 0.1	M104 ppm 0.1	M104 ppm 0.1	M104 ppm 1 1104	M104 ppm 0.5

Notes: N.A. = not analysed, - = element not determined, I.S. = insufficient sample, L.N.R. = listed not received





Our reference : BU015998  
Your reference : **Despatch 3713**  
Project code : Drill Core  
Date received : 16/03/99  
Date reported : 24/03/99

**Analabs Pty. Ltd.**  
ACN 004 591 664  
14 Thirkell St, Burnie  
Tasmania 7320  
Telephone : (03) 6431 6837  
Facsimile : (03) 6431 8890

Owen Parfrey  
  
Pasminco Exploration  
P.O.Box 1291K  
Melbourne  
  
VIC 3001

*Tas : Tullah  
Bruce Ck.*

Number of pages of results : 3  
Number of Samples : 6  
First Sample : 165903  
Last Sample : 165923

Invoice to:  
Owen Parfrey  
  
Pasminco Exploration  
P.O.Box 1291K  
Melbourne  
  
VIC 3001

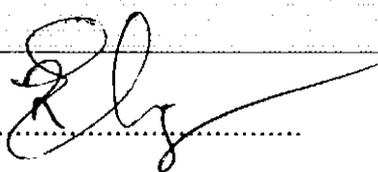
Electronic Data Transmission :  
Modem //  
Facsimile //  
Disk Report //

Preliminary Reports :  
24/03/99 Report

Results to:

Results to:

Remarks :

Authorised by .....  
On behalf of: 

Rob Chapman  
Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.







**APPENDIX 3**

**Bruce Creek Prospect - Diamond Drilling  
Drill Logs - BCD1 & BCD2**



# Pasminco Exploration

168066

## Drill Hole Summary Sheet

Input

Hole_ID BCD1			Project TULLAH			Cost Code XP13/2/4/11			DBA	Geo		
Hole_Type DIAMOND			Prospect BRUCE CREEK			SDS Nos			Data Entry	Post Data		
Year 199			Tenement_No. EL 22/90						Table	Entry Val		
Wedge/Re-entry			Parent Hole_ID			Depth Wedged			Collar			
UTM E 383155-8			Local E 3125E			Ref System UTM			Init	Init		
UTM N 5372839			Local N 2800N			Ref Method DGPS			Date	Date		
UTM RL 427.2			Local RL 427.2			Ref Accuracy 1m						
UTM Datum AGD 66			Local Grid BRUCE CREEK									
UTM Zone 55			EOH 156m									
Dip -60°			True Az (UTM) 090°			Mag Az 078°			DH Survey <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
Sample No Ranges 165901 - 165923						Interval		DH Type		Diam		
331759 - 331768						0-156		Diamond		NTW		
Assay_Batch						Init		Init				
Date						Date		Date		Date		
Duplicates/Intervals						DH_Type		Init		Init		
								Date		Date		
						NB: Incl Pre-collar type						
Date Collared 16-11-98			Date Completed 1-12-98			Collar						
Logged by O. PARFREY			Sampled By P. CHALLENGER			Init			Init			
Purpose for Hole To test IP chargeability anomaly next to NW trending structure						Date			Date			
Termination Reason Hole exceeded target depth with only minor mineralisation and alteration												
Drilling Company L.I.D.P.S			Casing Depth From 0m			Collar						
Rig Used HYDRACORE 28			Casing Depth To 156m			Init			Init			
Casing Type PVC			Casing Size 40mm			Date			Date			
Orientation Survey <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			Method EASTMAN CAMERA			Collar						
Water Table Depth (m) NA			Quality NA			Collar						
Visible Mineralisation Description Disseminated and veined sphalerite (1-2%), galena (1-2%) and pyrite 2% in silica, sericite, carbonate altered fault/shear zone						Collar						
						DH_Mineralisation		Inits		Inits		
								Dates		Dates		
Interval		Summary of Geology				Rock Code		Formation		DH_Geol_Summary		
0-18m		Mafic Breccia				VMBR		SVV		Init		
18-156m		Andesite cut by numerous basalt sills or dykes.				VNAN		SVV		Date		

Project: TULLAH

Logged by: D. PARFREY

Date: 11-2-98

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

**HOLE No. BCD1**

m	VEINING and ALTERATION (1 = weak, 4 = Intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG BS OE OS N R SE EE	LITHOLOGY	MINERALISATION
0	Strongly weathered Chl (2). Fe, Mn staining on fractures Patchy silica + alkali alteration	Rubbly con to Sn Strongly fractured and broken to 2cm.		<u>MAFIC BRECCIA</u> Green andesitic breccia. Clasts of subangular dacite + andesite. Matrix fine grained variably Feldspar phytic. Clasts matrix supported. Occasional intervals look like hyaloclastite of 17-20. Possibly part andesite autobreccia.	Trace clinopy on fractures
5		Qtz + Carb vns at 40° CA Mn + Fe staining on fractures + vns			
10	Si (2) Chl (2) Some alkali alt. Devitification!	Qtz + carb vns			
15	Carb + sil alt around Qtz vns Qtz + chl + Carb veins	Qtz + Chl vns			
20	Ep (2) assoc with basalt margins Cc (2) Carb + sil rillite around basalt Chl (2) Si (2) Ep (1)	Abundant Mn + Fe stained fractures Contact 80° CA Qtz + Carb vns 45° CA		Contact 60° CA <u>BASALT</u> Fine grained sub-ophitic massive green basalt	Trace py + vns
25	Si (2) Chl (2)	Hydrothermal lvs Qtz + carb vns		<u>BASALT</u> Fine green sub-ophitic basalt. Massive weakly magnetic	Py 1% in micro-ventlets assoc with chl.
25		Qtz + Carb vns 60° CA		<u>ANDESITE</u> Feldspar phytic medium grained andesite. Feldspar xl size variable. Ferromag xls converted to chlorite. Some fine grained feldspar poor intervals	

Project: TULLAH  
 Logged by: O. PARFRET  
 Date: 11-2-98

**PASMINCO EXPLORATION  
 DIAMOND DRILL LOG**

HOLE No. BCD1

m	VEINING and ALTERATION (1 = weak, 4 = Intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG 80° 60° 40° 20° 0° 20° 40° 60° 80° NE EE	LITHOLOGY	MINERALISATION
25	Si (2) Co (2) Qtz + carbonate veins. Chl (3)	Qtz + Co uns 60° CA  Contact 20° CA			Trace py in matrix.
30	Irregular sil/carb veins Chl (2) Si (2) patchy Minor leucoxene spotting	Mixing of carb veins 60° CA Qtz + Carb uns 60° CA 40° CA uns to 3cm		<u>BASALT</u> Fine grained green massive sub ophitic <u>ANDESITE</u> Feldspar phytic green massive, as above. Crystal size and content varies considerably	Trace clinopyroxene
35	Chl (3) Some leucoxene spotting			<u>BASALT</u> Fine grained green massive sub ophitic <u>ANDESITE</u> As above. Feldspar phytic massive andesite. Crystal content varies Feldspars 1-3 mm in size	Trace clinopyroxene Minor clinopyroxene
40	Chl (2), Si (2) Some hor. bleached zones - sil alt Qtz + Carb uns Chl (2) alt of matrix and ferro mag minerals.	Qtz + Carb uns to 3cm wide V. to 60 40° CA 60° CA Fractures at 60°		Patchy silica alt (healed zones)	Trace chlorite
45	Si (1) patchy Leucoxene spots	Mod fractured & brecciated. Qtz + carb + Chl uns Contact 30°		<u>BASALT</u> Fine grained massive as above <u>ANDESITE</u> As above	Minor py trace Gra on fracture surfaces associated with Qtz uns.



Project: TULLAH

Logged by: O. PARFREY

Date: 11-2-98

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

**HOLE No. BCD1**

m	VEINING and ALTERATION (1 = weak, 4 = intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG 80 0 20 40 60 80 100 OC C N S SE EE	LITHOLOGY	MINERALISATION
75	Leucocratic spotting Chl (2) Silica + carb alt around qtz + carb uns. gives bleached appearance pink - kahiki colour	Diffuse foliation fractures 45° CA Mod fractured Qtz + Carb uns		<u>ANDESITE</u> Fine grained feldspar crystal poor. Spotty appearance, mod amount of ferromag minerals. Has some spotty pink alteration as above. Alteration is zoned replacing both matrix and feldspar	
80	Chl (2) Pale ser + carb around qtz uns	Mod fractured 60° CA Qtz + Carb uns 40° CA ~ 10cm int			Trace [?]
85	Chl (2) Sil + allite spotting	Fractures 60° CA		Pink silica + allite spotting	Minor py on fracture surfaces
90	Silica alt as patches (bleaching) and fine veins Some silica alt has pink hue K-spar? allite?	Contacts irregular 25° CA Qtz + carb uns		<u>BASALT</u> Fine grained green matrix.	Py disseminated veinlets along contact
90	Silica alt as patches (bleaching) and fine veins Some silica alt has pink hue K-spar? allite?			<u>ANDESITE</u> Medium grained variably feldspar xl rich massive. Feldspar xls to 6mm, euhedral to bleby in shape, occasionally zoned Matrix chloritic. Variable feldspar content gives rock diffuse banding. Becomes crystal poor with depth.	
95	Patchy sil-allite alt. Deutritified Chl (2)	Qtz + carb uns 2cm wide @ 20-50° CA Fractures 30-50° CA			Tr py
100	Bleached sil + carb ser alt				

Project: TULLAH

Logged by: O. PARFREY

Date: 11-2-99

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

HOLE No. BCD5

Page 5 of 7

m	VEINING and ALTERATION (1 = weak, 4 = intense)	STRUCTURE b = bedding c = cleavage f = fault Angle to LCA	GRAPHIC LOG 0 1 2 3 4 5 6 7 8 9 10 cm	LITHOLOGY	MINERALISATION
100		Mod broken Fractures 10° CA			Minor py
105	Chl (2) pink silica + albite alteration deutritification	Qtz + carb vns 40-60° CA		<u>ANDESITE</u> Matrix to weakly zoned feldspar crystal poor medium grained matrix Patchy zones with xls to 5mm Pink silica + albite alteration of matrix	Trace disse py
110	Si (2), some albite alt	Strongly Fractured			
115	Chl (2) Si (3), Co (2) Mod-strong sil of matrix and some clasts Patchy bleached areas Carb + sil vns	Strongly fractured brecciated & veined - Sil replace matrix & clasts Hydrothermal & primary brecciation Abundant veins		<u>ANDESITE BRECCIA</u> Brecciated feldspar phyric andesite. Pale green - white jig saw fit clasts Matrix fine grained sandy texture Matrix strongly siliceous altered.	Dissem py
115	Chl (2) patchy silica	Veined & brecciated		<u>ANDESITE</u> Medium grained feldspar phyric andesite. Some feldspar xls to 7mm	Dissem py
120	Minor leucocase Spotting	Qtz + Carb vns 30-50° CA		<u>BASALT</u> feldspar phyric med-fine grained green matrix	Qtz carb vns 50° CA
125	Si, Co, Ser (3) amoc with vein silica + albite (2) spotty alt	vein / fault Qtz + Carb vns 50° CA		<u>ANDESITE</u> Dark green feldspar phyric andesite. As above Feldspars to 6mm some zoned, blebby to euhedral shape. Crystal size and shape variable.	Sph (2%) ga (2%) py (5%) in carb ser + silica vein Bleached carb ser alt around margin Small veins of: x ga

Project: TULLAH

Logged by: G. PARFREY

Date: 11-2-99

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

HOLE No. BCD1

m	VEINING and ALTERATION (1 = weak, 4 = Intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG N E S E E	LITHOLOGY	MINERALISATION
125	Chl (2) Silica + albite spotting (2) Patchy devitrification	Fractured veined Qtz + Carb + Sulphide vein 20cm wide Strongly cleaved			Dissim py Sph in small vns.
130	Ser + Carb vns bleached. Sil + albite (2) spotty alt.	Qtz + Carb vns 50° CA 5cm wide		<b>BASALT</b> Fine grained green weakly feldspar phyric basalt - green.	Sph (0.5%) ga (0.5%) py in vns veins amon with ser on sil vns.
135	Chl (2) Siderite vns in bleached zones Minor leuconene spotting Some sil + albite pink spotting	Mud brown & fractured Narrow qtz vns 40° CA Fractured & brecciated		<b>ANDESITE</b> Variably feldspar phyric massive to diffusely banded andesite. Zones with greater concentration of feldspar xls. Some intermits crystal poor. Pink silica + albite spotting throughout (Devitrification)	Tr ga on traces Sph + ga on fracture surfaces and in veins. Dissim py in veins
140	Strongly bleached zone. Ser + carb alt Chl (1)	Strong stockwork qtz + carb vns			Sph + Ga in veinlets on fractures.
145	Patchy sil + carb leuconene spotting Sil + Carb + chl vns	Qtz + Carb + Chl vns 60° CA Prominent fracture at 60° x 10° CA			Trace sph Dissim py
150					

Project: TULLAH

Logged by: O. PARKREY

Date: 11-2-99

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

HOLE No. BCD1

m	VEINING and ALTERATION (1 - weak, 4 - Intense)	STRUCTURE b - bedding c - cleavage f - fault Angles to LCA	GRAPHIC LOG 8 4 0 E 2 N 0 R 0 E 0 0 0 0 0 0 0 0	LITHOLOGY	MINERALISATION
150	Ch1 (2) Leucocratic spots Patchy sil+ alkali alt.	Fractured at 60° CH 10° CH Qtz + Carb vns at 60° CH		ANDESITE Green weakly feldspar phytic matrix andesite.	Minor dissem MS  Trace MS
155				EOH	
160					

OUTER-RIM EXPLORATION SERVICES  
Borehole Pulse EM Survey

Client	: Pasminco Exploration	Hole	: BCD-01
Grid	: Bruce Creek	Tx Loop	: #BCEM1
Date	: Jul 29, 1999	File name	: BCD1Z.PEM
Time Base	: 10.00 ms	# Readings	: 15
Ramp Time	: 0.50 ms	Stn Units	: Metric
# Channels	: 17	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 180m X 200m	Receiver	: Digital #109
Current	: 20 Amps	Operator	: Brett Rankin

Loop Coordinates (X,Y,Z)

- |                               |                                |
|-------------------------------|--------------------------------|
| 1. 383120m, 5.3728e+06m, 425m | 2. 383080m, 5.37299e+06m, 420m |
| 3. 382925m, 5.373e+06m, 435m  | 4. 382930m, 5.3728e+06m, 465m  |

Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

- |                                |                       |
|--------------------------------|-----------------------|
| 1. 383156m, 5.37284e+06m, 427m | 2. 85deg, 60deg, 150m |
|--------------------------------|-----------------------|

Channel Times (usec)

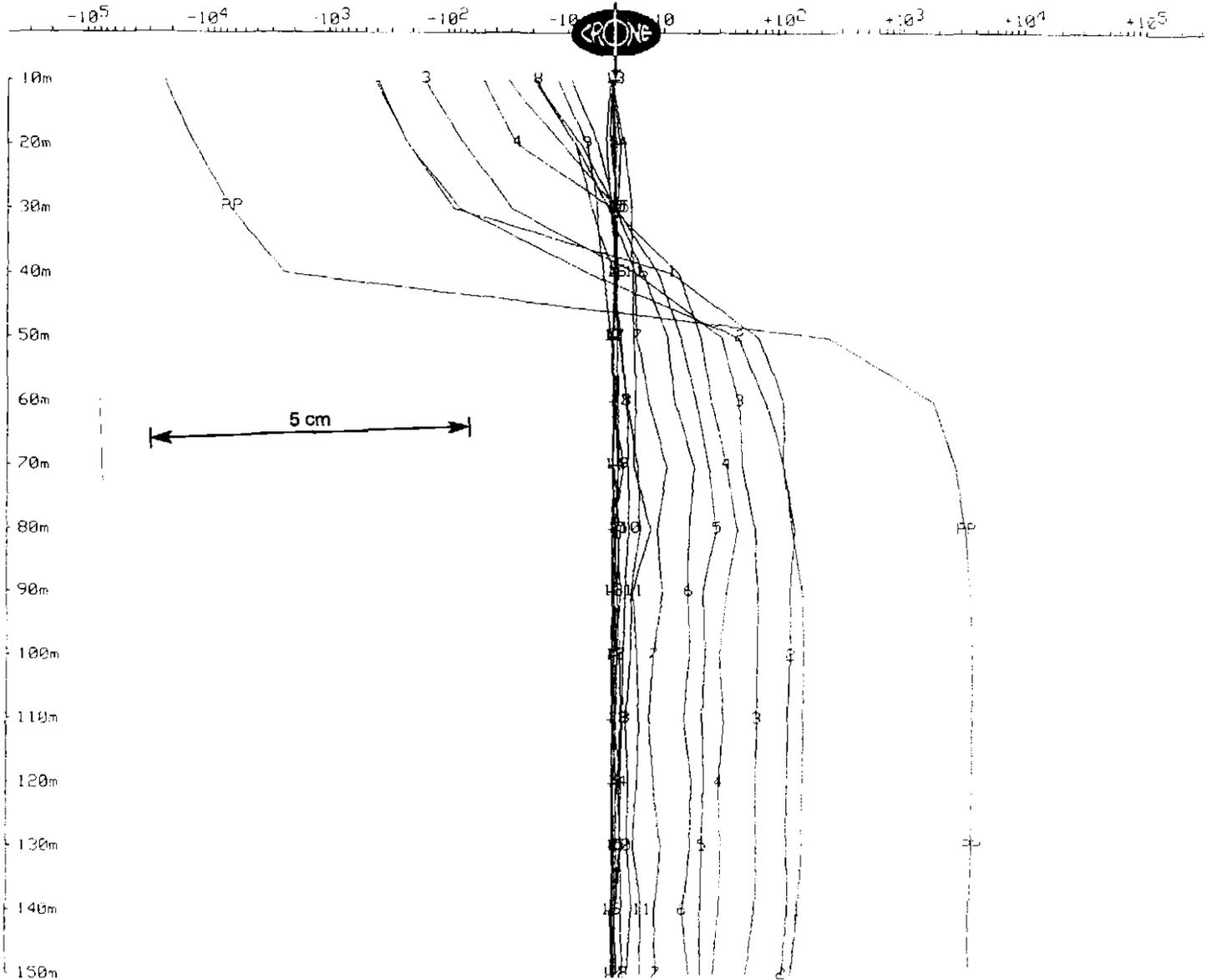
Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-198	-99	-149	1	50	63	56	2	63	86	74
3	86	112	99	4	112	153	133	5	153	203	178
6	203	270	236	7	270	360	315	8	360	482	421
9	482	639	560	10	639	850	745	11	850	1129	990
12	1129	1498	1314	13	1498	1993	1746	14	1993	2646	2320
15	2646	3514	3080	16	3514	4666	4090	17	4666	6192	5429

OUTER-RIM EXPLORATION SERVICES  
Borehole Pulse EM Survey

Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 17 of 17 channels and PP  
Scale: 1:1000

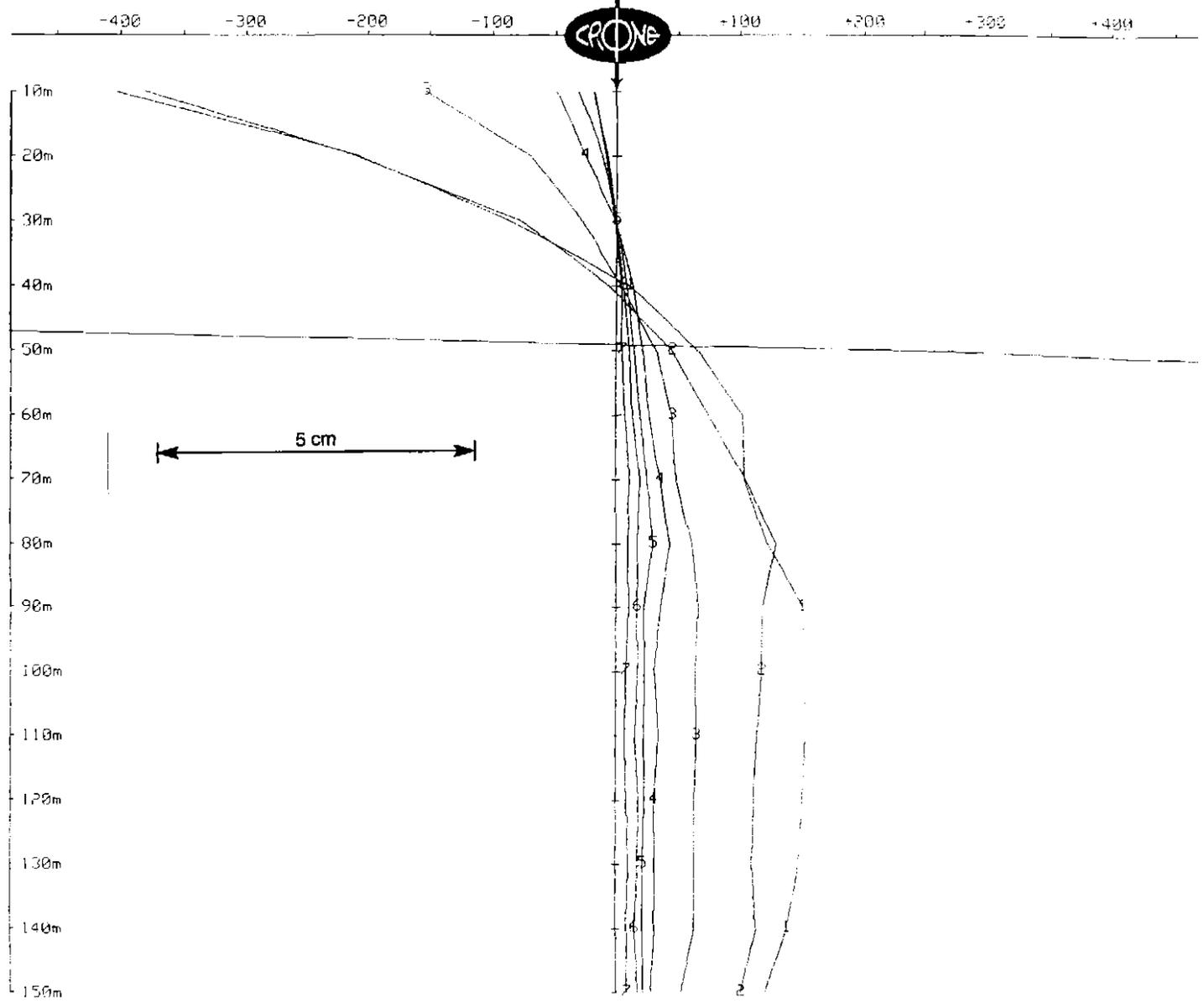


# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 17 channels and PP  
Scale: 1:1000 Unit Scale: 1cm = 50 nT,



# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

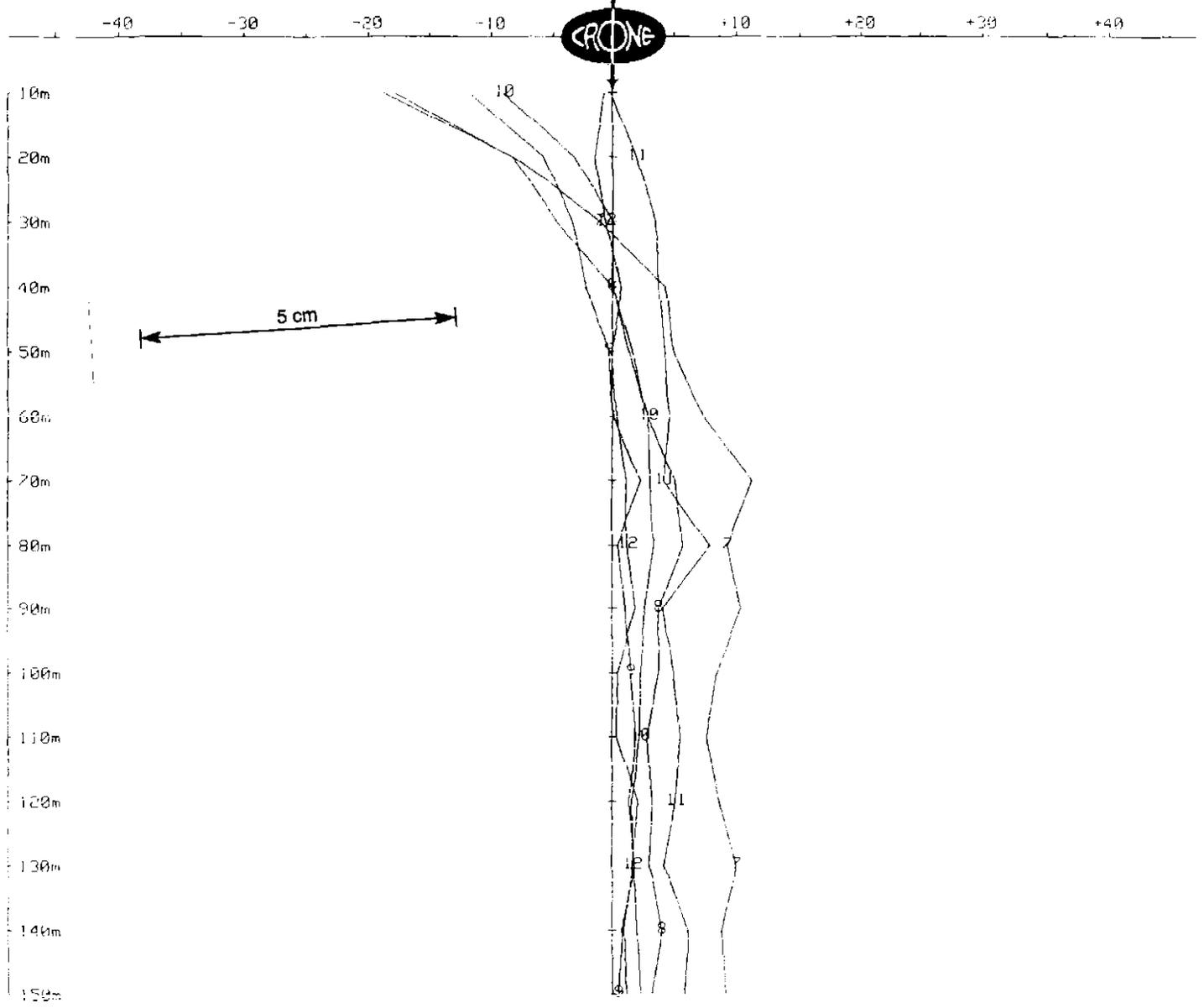
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:1000

Unit Scale: 1cm = 5 nT/



# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

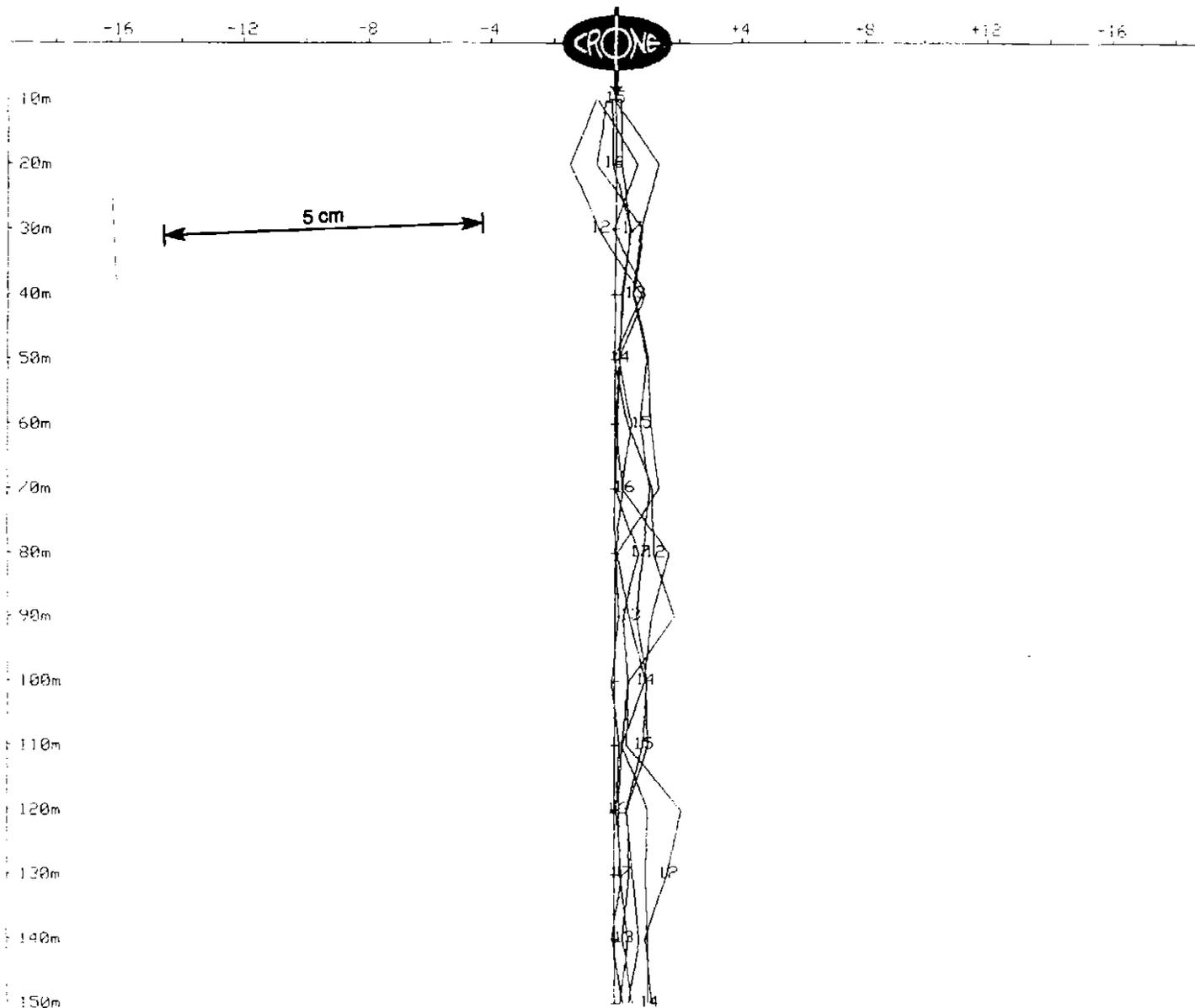
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 17 channels

Scale: 1:1000

Unit Scale: 1cm = 2 nT/



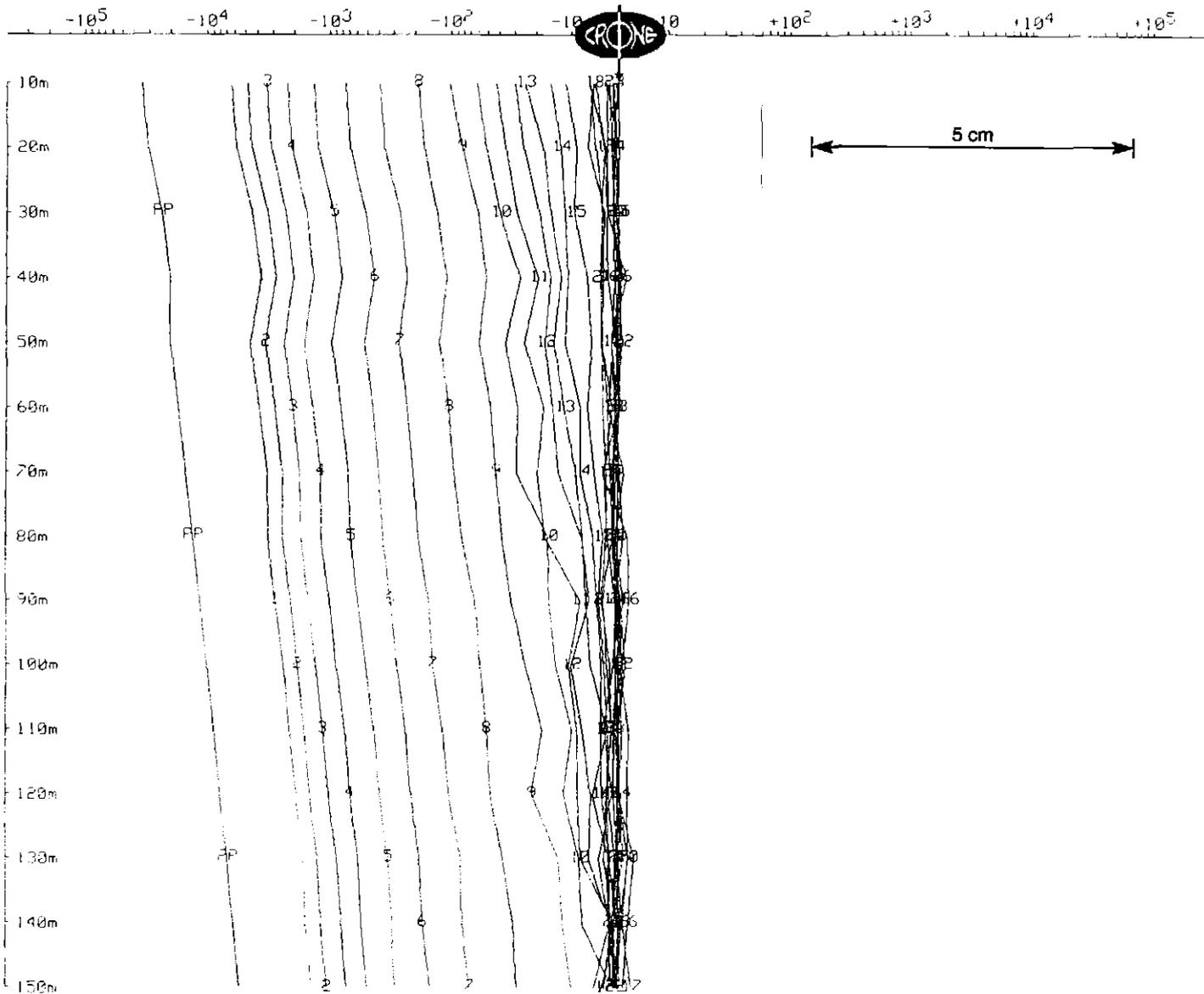
# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
X COMPONENT dBx/dt nanoTesla/sec - 26 of 26 channels and PP

Scale: 1:1000







168082

# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

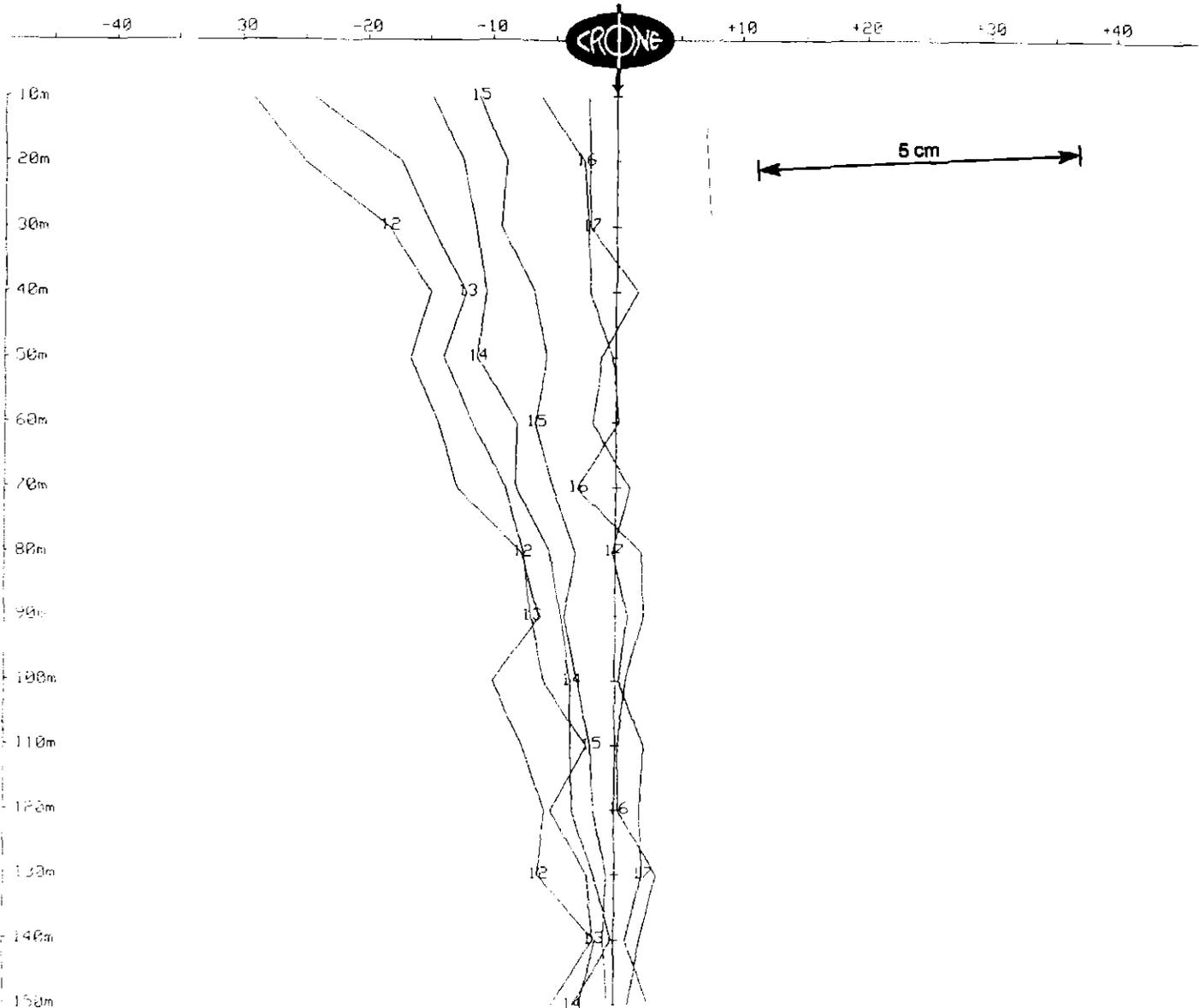
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
X COMPONENT dBx/dt nanoTesla/sec - 6 of 26 channels

Scale: 1:1000

Unit Scale: 1cm = 5 nT



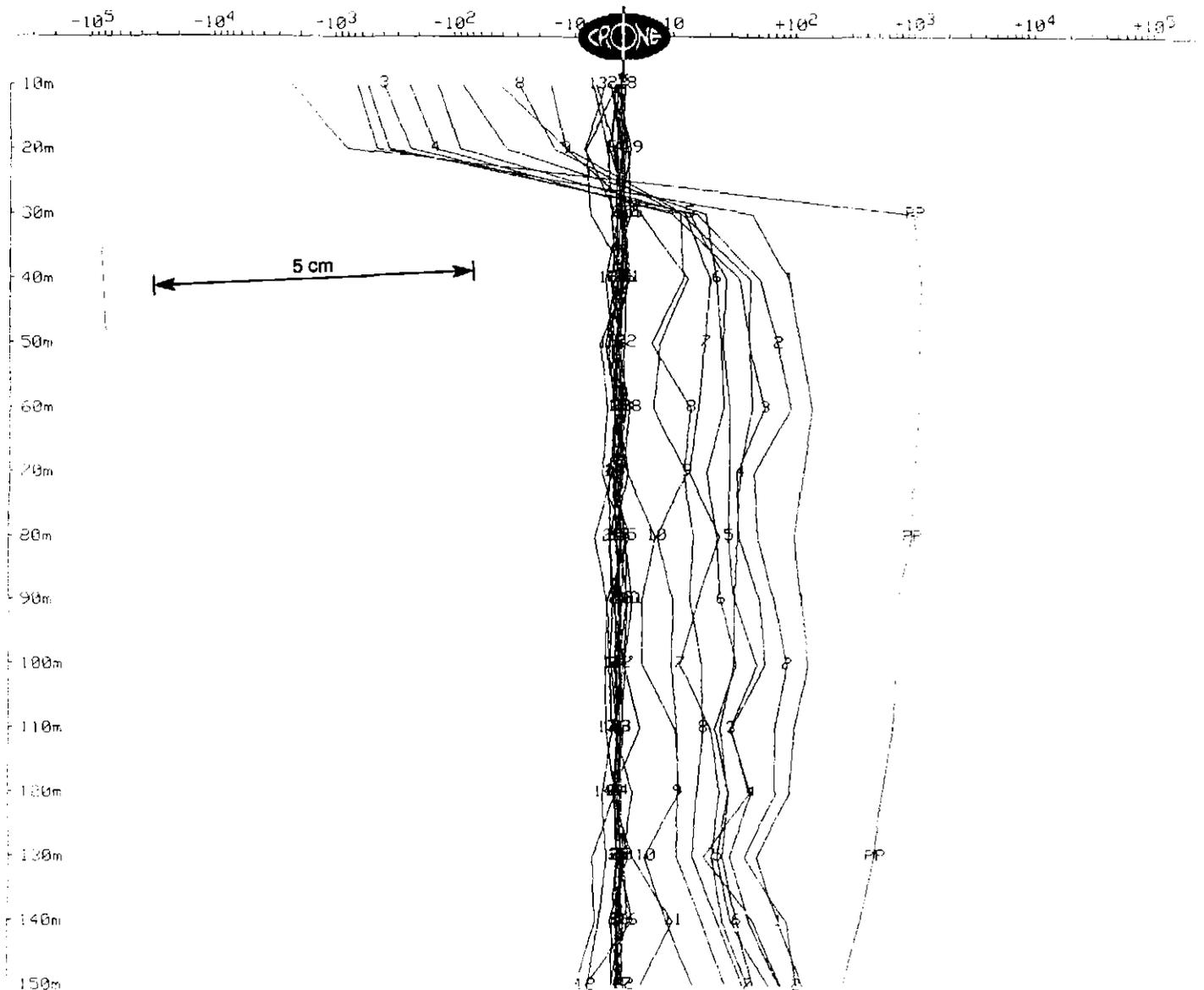
# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
Y COMPONENT dBy/dt nanoTesla/sec - 26 of 26 channels and PP

Scale: 1:1000



OUTER-RIM EXPLORATION SERVICES  
Borehole Pulse EM Survey

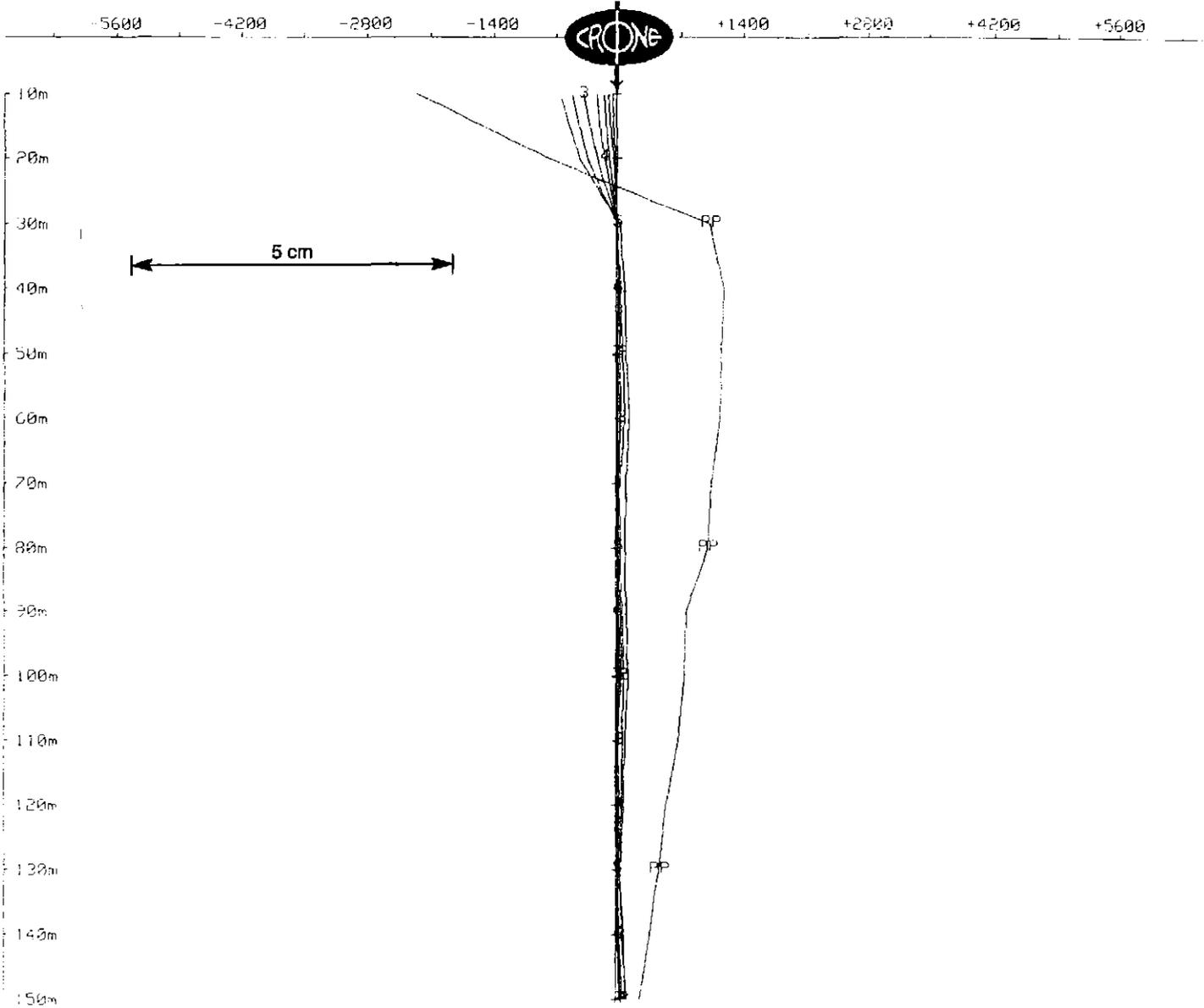
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 26 channels and PP

Scale: 1:1000

Unit Scale: 1cm = 700 nT/



# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

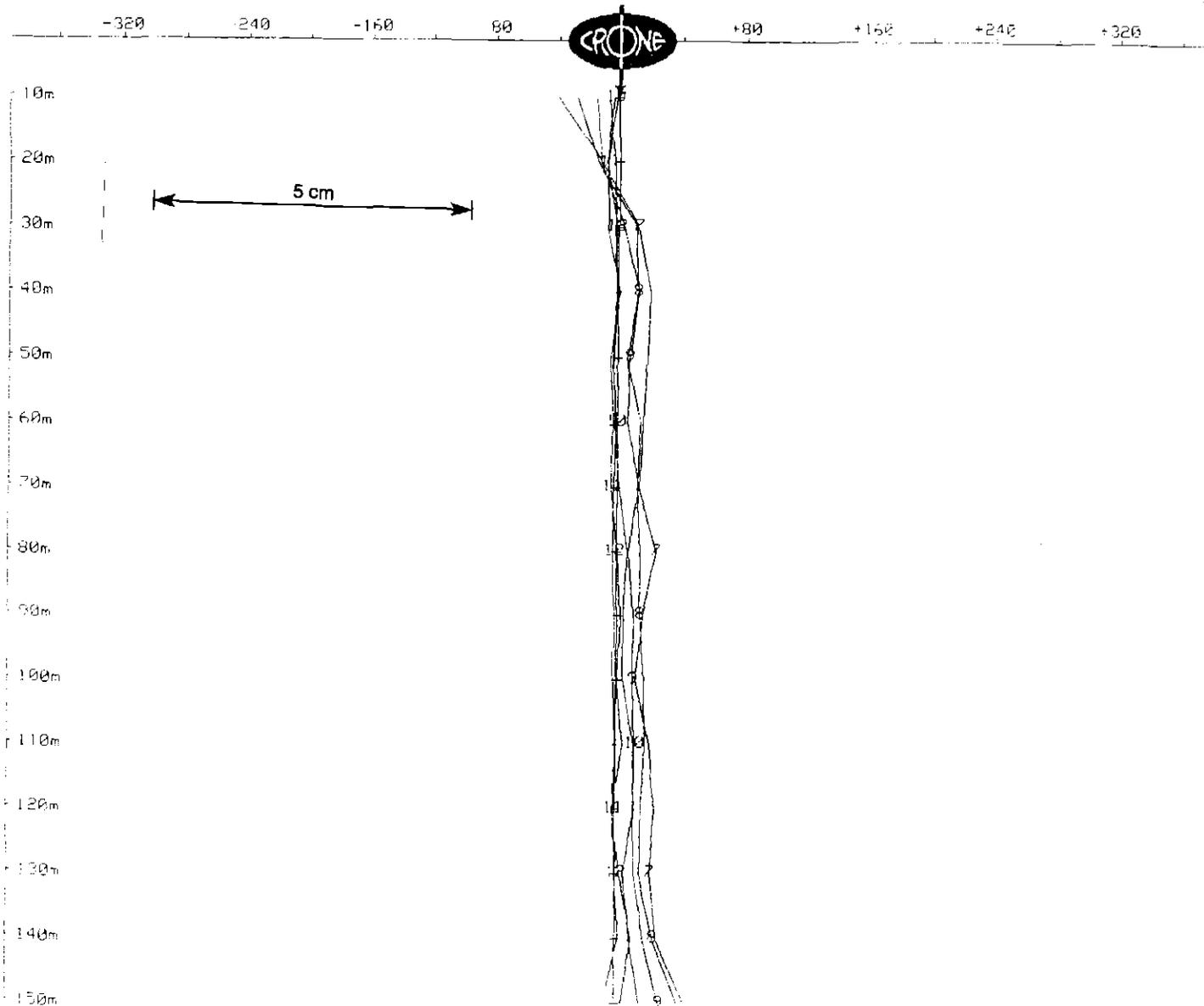
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 26 channels

Scale: 1:1000

Unit Scale: 1cm = 40 nT



# OUTER-RIM EXPLORATION SERVICES Borehole Pulse EM Survey

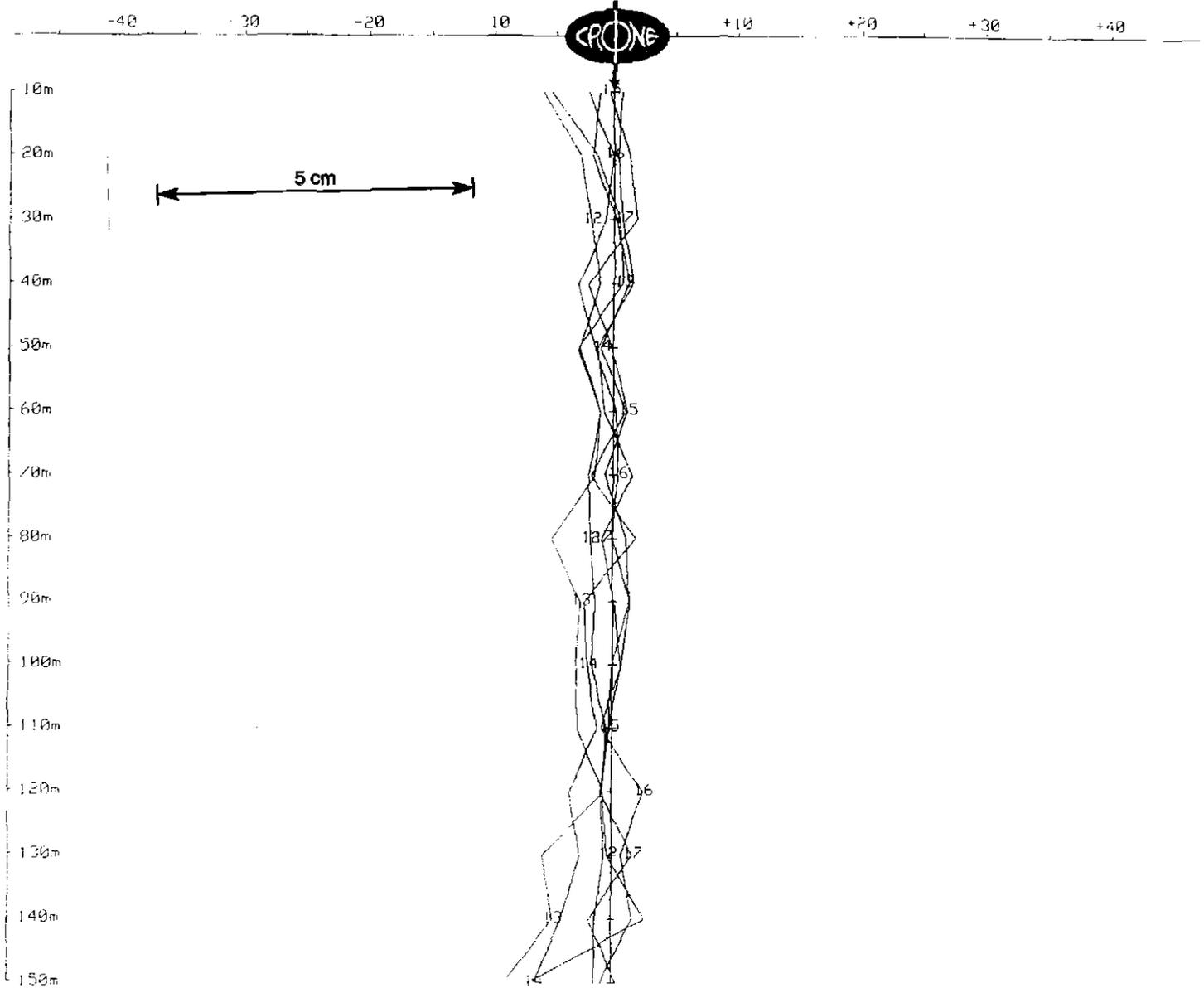
Client : Pasminco Exploration  
Grid : Bruce Creek  
Date : Jul 29, 1999

Hole : BCD-01  
Tx Loop : #BCEM1  
File name : BCD1XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #8  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 26 channels

Scale: 1:1000

Unit Scale: 1cm = 5 nT/





# Pasminco Exploration

168087

## Drill Hole Summary Sheet

Input

				DBA	Geo
Hole_ID	BCD2	Project	TULLAH	Cost Code	XP/3/2/4/11
Hole_Type	DIAMOND	Prospect	BRUCE CREEK	SDS Nos	
Year	1998	Tenement_No.	EL 22/90		
Wedge/Re-entry		Parent Hole_ID		Depth Wedged	
UTM E	384101.9	Local E	4114	Ref System	UTM
UTM N	5373201	Local N	3200	Ref Method	DGPS
UTM RL	217.6	Local RL	217.6	Ref Accuracy	1m
UTM Datum	AGD66	Local Grid	BRUCE CREEK		
UTM Zone	55	EOH	80m		
Dip	True Az (UTM)	Mag Az	DH Survey Y/N		Survey
Sample No Ranges	165924 - 165954		Interval	DH Type	Diam
			0-80m	Diamond	NTW
Duplicates/Intervals					
			NB: Incl Pre-collar type		
Date Collared	7-12-99		Date Completed	11-12-99	
Logged by	D. PARESEY		Sampled By	P. CHALLENGER	
Purpose for Hole	To test beneath partial leach Au As soil anomaly next to Henry Fault and along strike of Lorrigans Lode				
Termination Reason	Little visible sulphide, drilling difficulties forced hole to be stopped.				
Drilling Company	L.I.D.O.S		Casing Depth From	0m	
Rig Used	HYDRACORE 28		Casing Depth To	80m	
Casing Type	PVC		Casing Size	40mm	
Orientation Survey	Y/N		Method	EASTMAN CAMERA	
Water Table Depth (m)			Quality		
Visible Mineralisation Description	Minor veins and disseminated pyrite arsenopyrite and sphalerite + galena. Veins generally less than 5mm wide.				
Interval	Summary of Geology		Rock Code	Formation	
0-10m	Basalt		VBBA	SVV	
10-21m	Mafic volcaniclastic breccia		VMBR	SVV	
21-24m	Basalt		VBBA	SVV	
24-27m	Fault		F		
27-30m	Basalt		VBBA	SVV	
30-40m	Mafic Volcanic		VMXX	SVV	
40-44m	Feldspathic Volcanic		VMXX	SVV	
44-50m	Breccia		VMXX	SVV	
- 0	Mafic Volcanic		VMXX	SVV	

Project: TULLAH  
 Logged by: O. PARFREY  
 Date: 4/2/98

**PASMINCO EXPLORATION  
 DIAMOND DRILL LOG**

HOLE No. BCD2

m	VEINING and ALTERATION (1 = weak, 4 = intense)	STRUCTURE b = bedding f = cleavage F = fault Angles to LCA	GRAPHIC LOG 80 0E 0N 0R 0E 0E	LITHOLOGY	MINERALISATION
0	Oxidised	Mod - strongly cleaved S <sub>1</sub> 55° CA		<b>BASALT</b> Fine grained massive sub ophitic texture, strongly weathered, sub mm feldspar phenocrysts. Matrix strongly chloritic. Strongly oxidized to 6m moderately oxidized to 8m	Hematite, alter py on fractures and in veins
5	Pervasive chlorite alt (3), mod chl veining Mn stained clayey	Broken & fractured Mn staining on fractures			
5	Chl (3) pervasive Qtz veins	Strongly broken to 6m S <sub>1</sub> 40° CA Fractures 60° CA			Trace py Qtz, hematite veins, hem after py Aspy
10	Mod weathered Chl (3) of matrix and clasts. Ser (1). Feldspar alt to clay. Carb veined & bleached	Fractures 60° CA Qtz veined Strongly broken rubble core. Fault		<b>MAFIC VOLCANIC CLASTIC BRECCIA</b> Medium grained feldspar phyric breccia. Abundant feldspar xls (10%) and feldspar phyric andesite or dacite clasts to 50mm. Clasts subrounded to subangular, matrix supported. Fine grained chlorite altered matrix grades up hole into feldspar xls	Qtz - Chl veins with < 1% hem after py
15	Wispy patches of silica alteration Chl (2) massive and as veins Si (2) Chl (3) Ser (1) Silica carb alt as patches & veins	Strongly broken rubble S <sub>1</sub> 55° CA Mod fractured & broken Fractures 45° CA & 60° CA		<b>MAFIC VOLCANIC BRECCIA &amp; SANDSTONE</b> Mixed sequence of mafic volcanic breccia and feldspathic sandstone. Green massive clasts of andesite subangular, weakly feldspar phyric. Matrix strongly chlorite altered fine grained sandstone.	Trace diss py 1% py in carb Sphalerite vein? Py 1-2% clay and as veins
20	Chl (3), qtz + carb vns. Mn + Hm on fractures Chl + Qtz vns	Fractures 60° CA		<b>BASALT</b> Fine grained, green, massive. Minor oxidized ferruginous xls	1% py + aspy in vns and disse 10cm bx on with 2% py, 4% Aspy
25	C (3) Qtz carb vns	Fractures 45° CA Extremely broken Qtz veined		<b>MAFIC SANDSTONE</b> Dark green feldspathic sandstone massive, med grained (variable)	Tr py

Project: TULLAH

Logged by: O. PARFREY

Date: 4-2-98

**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

HOLE No. BCD2

m	VEINING and ALTERATION (1 = weak, 4 = Intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG 0.5m 1m 1.5m 2m 2.5m 3m 3.5m 4m 4.5m 5m	LITHOLOGY	MINERALISATION
25	Chl (3), qtz veins	Extremely broken & fractured Core loss			Trace py + aspy
30	Chl (2), Mn + Hm on fractures	Strongly broken Fractures 40° CA S <sub>1</sub> 55° CA		<u>BASALT</u> Fine grained massive sub ophitic texture, oxidised.	Trace Hely py + aspy
35	Chl (2), Mn + Hm on fractures & in veins Qtz + carb vns bleached	Broken core Some core loss Fractures 70° S <sub>1</sub> 50° CA		<u>MAFIC VOLCANIC</u> Dark green medium grained feldspar phyric volcanic. Apparently minor quartz in rock - alteration? May be mafic sandstone? or altered and weathered basalt. Massive to brecciated texture, occasional clasts of feldspar phyric andesite and dacite to 50mm. Abundant fragmented andesite clasts near base of unit. Andesite lava? or Andesite breccia?	Trace diss py minor py + aspy in Qtz carb vns
40	Chl (2) Qtz + Carb vns Co (2)	Fractures 65° CA S <sub>1</sub> 55° CA Broken Core Qtz + carb vns		<u>FELDSPATHIC VOLCANIC</u> Medium grained feldspar phyric (to 3mm) massive. Abundant feldspar xls, may be sandstone or lava/sill.	Trace Hely py
45	Weathered + oxidised Chl (2), Ser (2) Co (2) clayey seams	Kink bands 80° CA Carb vns 20° CA S <sub>1</sub> 45° CA		<u>BRECCIA</u> Yellow oxidised breccia. Clasts of feldspar phyric andesite & dacite waxy texture.	Tr. diss. py. ep. minor sph. gr. py. in Qtz carb vns.
50	Strong Si (3), Co (2) as veins Chl (2) Intense Qtz + Carb vns Si (2)	Very strongly broken rubble core Fault. Brecciated, strong Qtz + carb veins Stockwork texture Brecciated. S <sub>1</sub> 55° CA		<u>VOLCANIC BRECCIA</u> Green feldspar phyric inter-mediate matrix supported breccia. Clasts of feldspar phyric dacite & andesite in fine grained green matrix. Some clasts to 60mm. Feldspars to 5mm some ferruginous xls to 3mm.	Minor sph. gr. py. and aspy assoc with Qtz carb chl vns

Project: TULLAH

Logged by: O. PARFREY

Date: 4-2-78

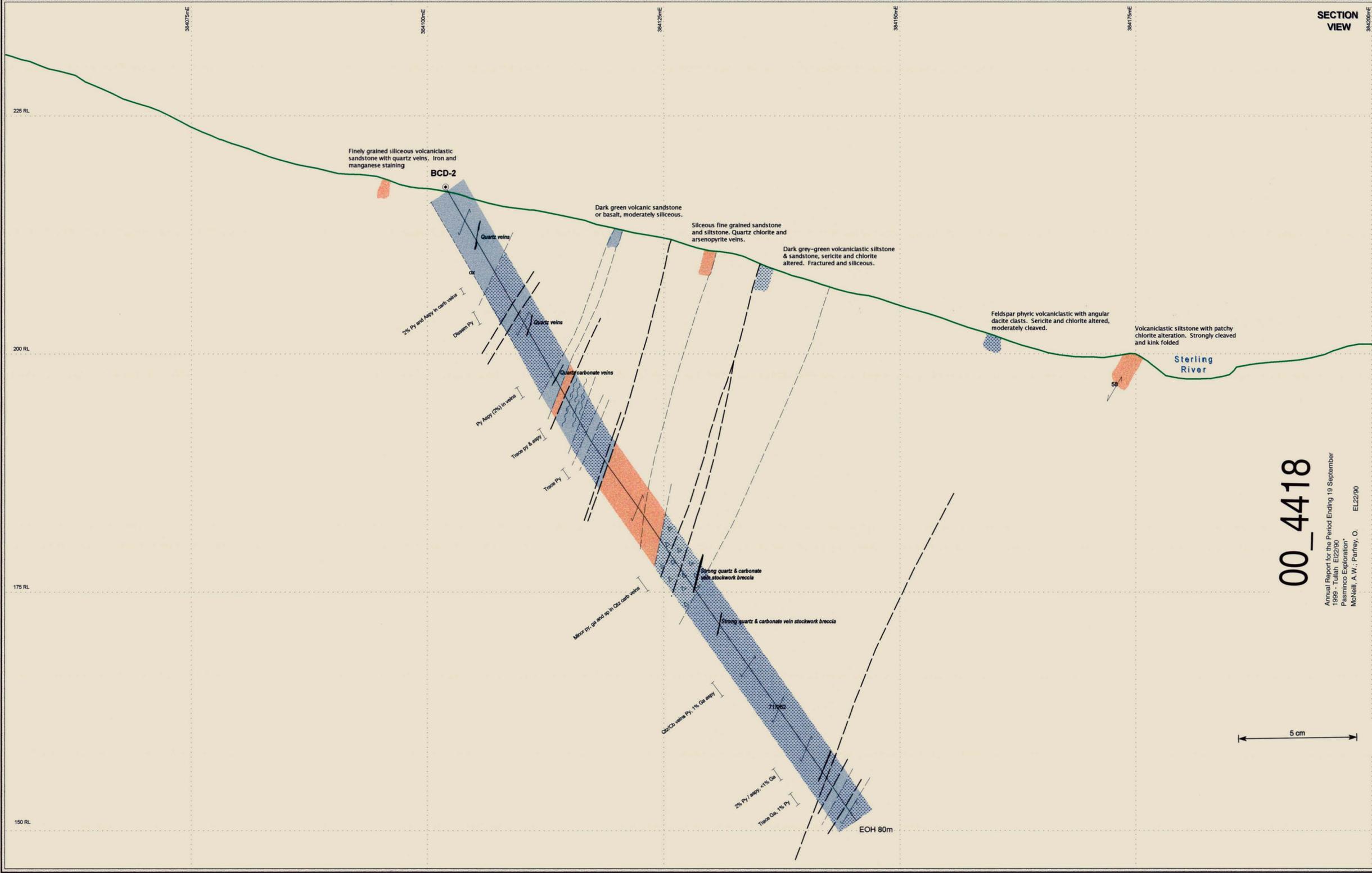
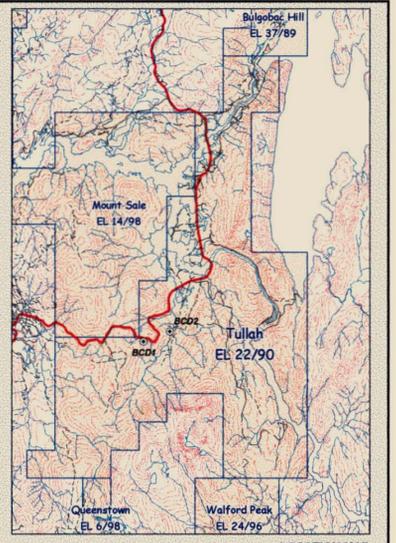
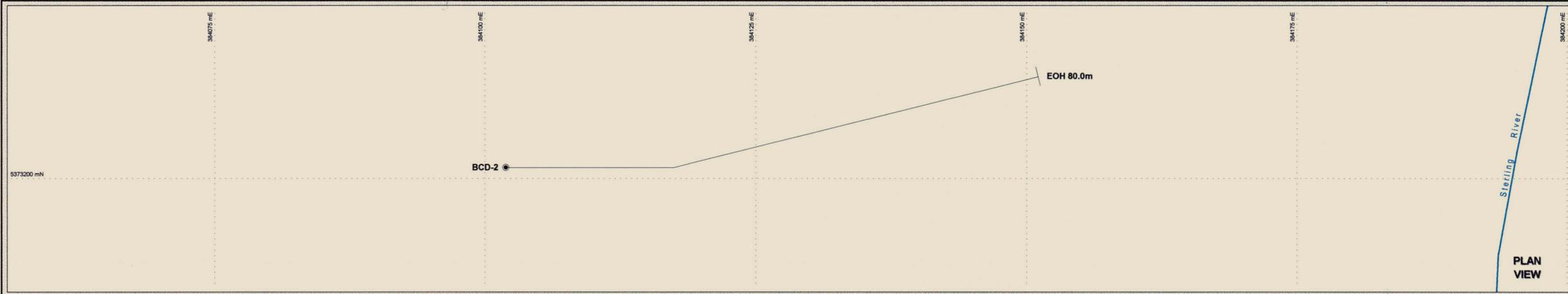
**PASMINCO EXPLORATION  
DIAMOND DRILL LOG**

HOLE No. BCD2

m	VEINING and ALTERATION (1 = weak, 4 = intense)	STRUCTURE b = bedding c = cleavage f = fault Angles to LCA	GRAPHIC LOG 80 0E 2 n = R EE	LITHOLOGY	MINERALISATION
50	Very strong qtz + Carb + chl vns Msu chl (3) Si (3) Co (3) alt Msu qtz vns with msu chl on margin	Brecciated qtz Carb vns Vns 60° CA 40° CA		<u>MASSIVE MAFIC VOLCANIC</u> Massive to banded green fine grained variably feldspar phytic volcanic Several finer grained intervals which are strongly foliated eg clin Also several intervals which are mod feldspar phytic (1 to 3mm) Rock apparently brecciated post 7cm with diffuse clasts of subangular to subrounded pale pink siliceous volcanic.	
55	Chl (3) Ser (1) Si (2) Co (2) Qtz carb vns	Msu qtz vns 40° CA Fractured		In part rock has clastic texture is diffusely banded and looks like siltstone / sandstone. In other places it looks like altered and deformed basalt?	Tr dissem py
60	Chl (2) qtz + carb vns	S <sub>1</sub> 80° CA Strong qtz + carb vns With bands 70° CA Core Orientation - Qtz carb vns 71° → 262° 70° → 254° S <sub>1</sub> as above.			Trace py vns Sph. ga. py in dissem. assoc with carb + chl vns Tr cpy
65	Ser (2) Chl (2) Bleached - Siderite vns cross cutting Qtz veins.	Fractures 30° CA S <sub>1</sub> 55° CA Cataclastic?			Minor dissem py ga, spg in qtz carb 1-2% py + cpy in assoc with qtz + c 2% dissem py as a minor ga in carb vein box.
70	Chl (2) Chl + qtz + carb vns Some siderite vns	S <sub>1</sub> 50° CA Strongly broken Fault Strongly broken fractured & ribbly Vns 60° CA			Numerous veinlets of cpy. py apgs. Trace sph & ga + siderite vns. Qtz + Carb vns with 1-2% py + cpy







LOCATION MAP  
1 : 150,000

**LEGEND**

- Basalt
- Mafic Volcanic (Andesitic)
- Mafic Breccia & Sandstone
- Volcaniclastic crystal sandstone and siltstone
- Fault (inferred)
- Geological contact (inferred)
- Cleavage
- Zone of disseminated sulphides
- Shear
- Strongly veined

**Abbreviations**

- chd - Cleaved
- ox - Oxidised
- chl - Chlorite
- ser - Sericite
- cb - Carbonated
- Epi - Epidote
- Ble - Bleached
- Ga - Galena
- Sph - Sphalerite
- Py - Pyrite
- Aspy - Arsenopyrite
- Cpy - Chalcopyrite

**ASSAY RESULTS**

Sample No	Depth From	Depth To	Ag_ppm	Au_ppm	Cu_ppm	Pb_ppm	Zn_ppm
189924	0	3	0.4	0.003	46	111	275
189925	3	4.5	1.4	0.004	78	77	579
189926	4.5	6	2.9	0.007	122	247	932
189927	6	8	2.9	0.006	66	244	1600
189928	8	9	2.8	0.003	92	317	1080
189929	15	16	1.6	0.003	-5	868	1015
189930	16.5	17	8.4	0.018	833	56	291
189931	17	18	3.1	0.006	819	66	289
189932	18	19	2.5	0.004	789	155	478
189933	23.5	24	10	0.081	4180	112	378
189934	27.5	28	0.4	0.002	26	17	313
189935	40	41	0.8	0.003	26	41	183
189936	41	42	0.6	0.002	6	12	139
189937	42.5	44.1	0.4	0.002	-5	9	181
189938	45.2	46.2	1.6	0.001	29	120	664
189939	46	49	3	0.003	119	182	541
189941	50	52	0.5	0.003	13	15	88
189942	56	57	0.6	0.002	56	7	106
189943	57	58	0.2	0.002	-5	6	151
189944	60	60.5	1.2	0.003	102	131	341
189945	60.5	61	0.6	0.002	-5	46	231
189946	61	62	0.7	0.003	79	6	93
189947	62	64	0.2	0.003	8	4	76
189948	64	66	0.4	0.002	6	16	189
189949	66	68	0.2	0.001	-5	4	120
189950	68	69	0.3	0.001	-5	18	93
189951	69	70	4.9	0.03	519	70	872
189952	70	72	0.5	0.002	92	26	107
189953	73	74	0.5	0.002	15	39	237
189954	74	75.4	0.5	0.002	51	42	367

**00\_4418**

Annual Report for the Period Ending 19 September  
1999 - Tullah EL22/90  
PASMICO Exploration\*  
McNeill, A.W.; Parfrey, O. EL22/90

**PASMICO EXPLORATION**

Author: O. Parfrey  
Date: 8/13/1999  
Office: ETS  
Drawn: L. Gads  
Ref:  
Scale: 1:250

**MT READ BELT  
TULLAH EL22/90**

**168102**  
Figure 6

**Bruce Creek Prospect  
Drill Hole BCD-2**

168094

**APPENDIX 4**

**Tullah HEM Survey Report (Summary)  
C. Dauth**

**MEMORANDUM****PASMINCO  
EXPLORATION**

July 22, 1999

TO Jennie Hollamby  
COPY  
FROM Chris Dauth  
SUBJECT Summary from Tullah HEM survey report.

---

**1. SUMMARY**

A high resolution helicopter-borne frequency domain electromagnetic (HEM) and magnetic survey was conducted in April 1999 over the North Murchison region of the Tullah EL 22/90 in Western Tasmania. The survey was flown by Geo Instruments Pty Ltd for Pasmaenco Exploration who are currently exploring the ground for Rosebery style Pb-Zn-Ag-Au mineralisation. The aim of the survey was to detect anomalous conductive response in the EM data that could be directly targeted for base-metals mineralisation. It is conceptual that massive sulphide mineralisation within a base-metals mineralised system would comprise a sufficient quantity (with suitable geometrical distribution) of conductive sulphide minerals (eg galena, pyrite, pyrrhotite, and chalcopyrite) to produce a recognisable EM response. An additional aim of the survey was to facilitate geological mapping of the region to assist with defining prospective horizons on which to focus more detailed exploration using alternative techniques.

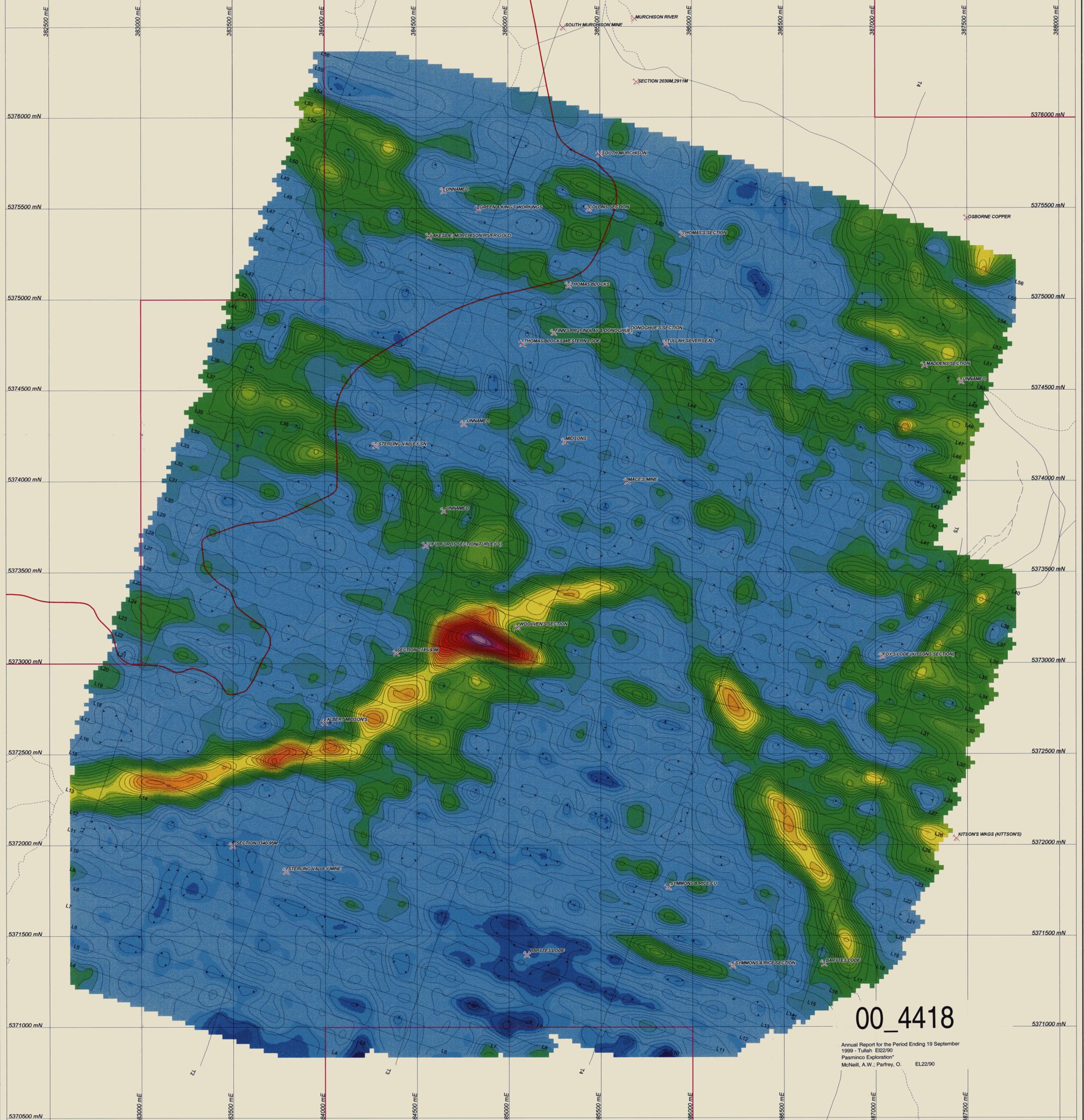
The survey was flown using the Hummingbird 5 frequency EM system developed by Geotech Pty Ltd. The system consists of two vertical coaxial coil pairs (980Hz and 7001Hz) and three coplaner coil pairs (385Hz, 6606Hz, and 34133Hz). The EM coils are mounted in an 8m long boom (bird) which is towed below the helicopter via a 30m cable. The magnetometer is also located in the boom. Minor noise was introduced into the magnetic readings by the 385Hz EM coil operation. Otherwise survey data quality was acceptable apart from unavoidable cultural noise presented by power-lines throughout the survey region.

The region features rugged topography and several cultural anomalies (power-lines) which impeded the logistical aspects of data acquisition. A total of 223 line kilometres were flown at 100m line spacing and 30m nominal terrain clearance (up to 100m above power-lines). Data were sampled at 0.1 seconds equating to 1-4 metres interval dependent on the helicopter ground speed. Total cost for data acquisition and processing was \$21,408 equating to \$96/line kilometre. Mobilisation/demobilisation costs equated to approximately \$7,000. Located data and grids of apparent resistivity and total magnetic intensity data were provided by the contractor along with stacked profiles of raw EM response.

A suite of anomalous EM responses were delineated in images produced of the computed resistivity data. These anomalies were checked against stacked profiles of the actual located line data. Analysis of stacked profiles provided the most suitable means of anomaly prioritisation. A majority of the low resistivity responses were determined to be dominantly high frequency

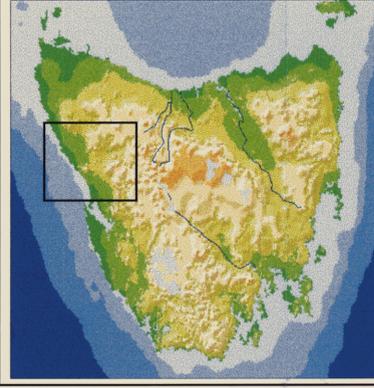
quadrature responses (poor conductors). Comparison of the coplaner coil responses with the coaxial coil responses gave good indication that many of these poorly conductive responses were due to glacial overburden. Several anomalous EM zones have been recommended for ground testing. Images of the EM and magnetic data have been produced and provide the basis for future structural and lithological interpretation.





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Annual Report for the Period Ending 19 September  
 1999 - Tullah E122/90  
 Pasmenco Exploration\*  
 McNeill, A.W.; Parfrey, O. E122/90



**Survey Specifications**

Survey Date: March 1999  
 Contractor: Geo Instruments Pty Ltd  
 Line Spacing: 100m  
 Line Direction: 110-290 degrees  
 Sample Interval: 0.1 sec (1-4 m)  
 Terrain Clearance: Nominal 60m  
 Bird Clearance: Nominal 30m  
 Magnetometer: Geometrics G8  
 EM System: Geotech Hummingbird  
 Frequencies: 34K, 7001Hz, 6006Hz, 980Hz, and 385Hz  
 Flight Path Recovery: Real Time GPS  
 GPS: Novatel 951R GPS Receiver  
 Radar Altimeter: Sperry AA210  
 GPS Base Station: Fugro Melbourne  
 Aircraft: Squirrel

**Legend**

- Road
- Mineral Occurrence (from Minloc database)

**Image Parameters**

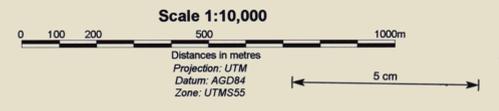
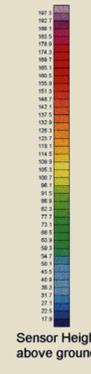
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 Colour Table: Pseudocolour  
 Limits: 100%  
 Histogram Transform: Linear

**Contour Parameters**

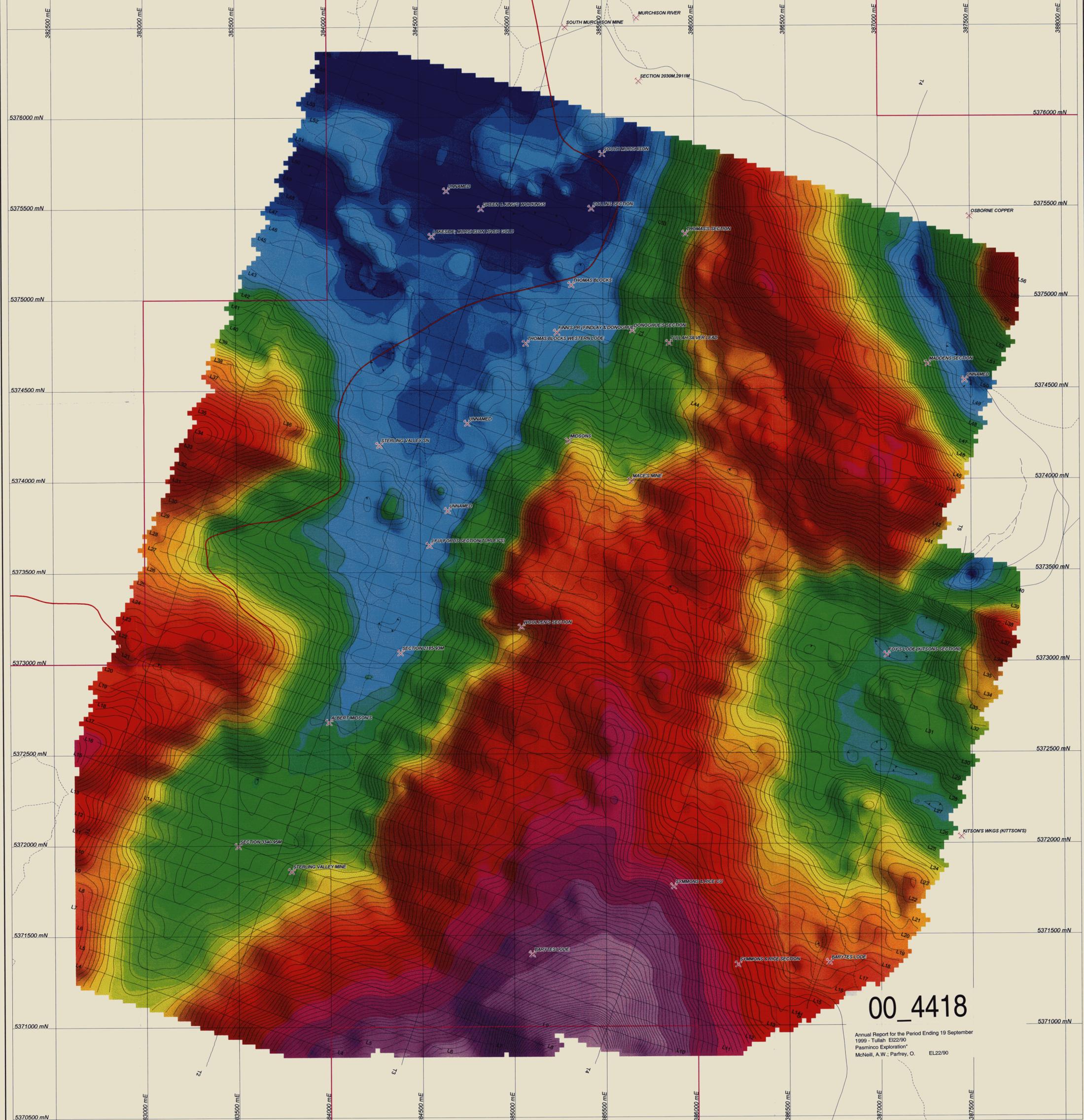
Contour: Sensor Height  
 Interval: 5m

**Processing Parameters**

Sensor Height =  
 Radar Altimeter - 30m

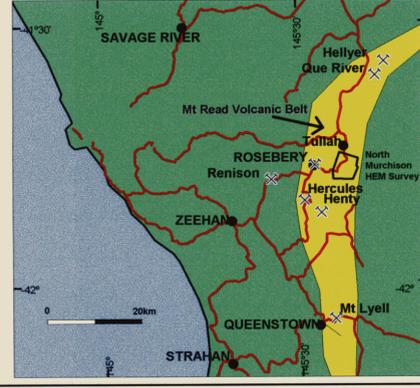
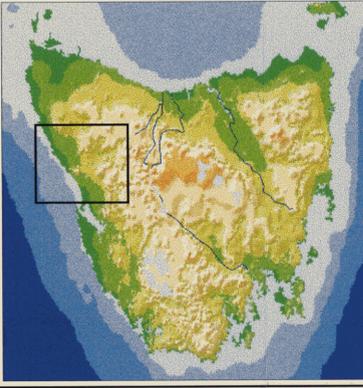


	<b>PASMINCO EXPLORATION</b>	
	ETS Melbourne	
168100		<b>TASMANIA</b>
<b>North Murchison EL22/90</b>		
<b>Heliborne Electromagnetic Survey</b>		
<b>Sensor Height Above Ground</b>		
<b>Image and Contours</b>		
Date: August 1999	Projection: SUTM55 AGD84	<b>Fig 8</b>
Author: C Dauth		
Office: ETS		
Ref:		
Scale: 1:10,000		



00\_4418

Annual Report for the Period Ending 19 September  
1999 - Tullah EL22/90  
Pasinco Exploration  
McNeill, A.W.; Parfrey, O. EL22/90



**Survey Specifications**

Survey Date: March 1999  
Contractor: Geo Instruments Pty Ltd  
Line Spacing: 100m  
Line Direction: 110-290 degrees  
Sample Interval: 0.1 sec (1-4 m)  
Terrain Clearance: Nominal 60m  
Bird Clearance: Nominal 30m  
Magnetometer: Geometrics G8  
EM System: Geotech Hummingbird  
Frequencies: 34K, 7001Hz, 6606Hz, 980Hz, and 385Hz  
Flight Path Recovery: Real Time GPS  
GPS: Novatel 951R GPS Receiver  
Radar Altimeter: Sperry AA210  
GPS Base Station: Fugro Melbourne  
Aircraft: Squirrel

**Legend**

— Road  
x Mineral Occurrence (from Minloc database)

**Image Parameters**

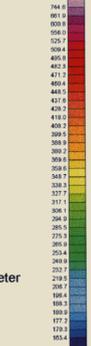
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Limits: 100%  
Histogram Transform: Linear  
Layer 2: DTM  
Colour Table: Intensity  
Limits: 100%  
Histogram Transform: Linear  
Sunangle: NE at 45 degrees

**Contour Parameters**

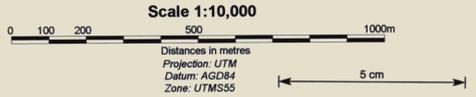
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Interval: 10m

**Processing Parameters**

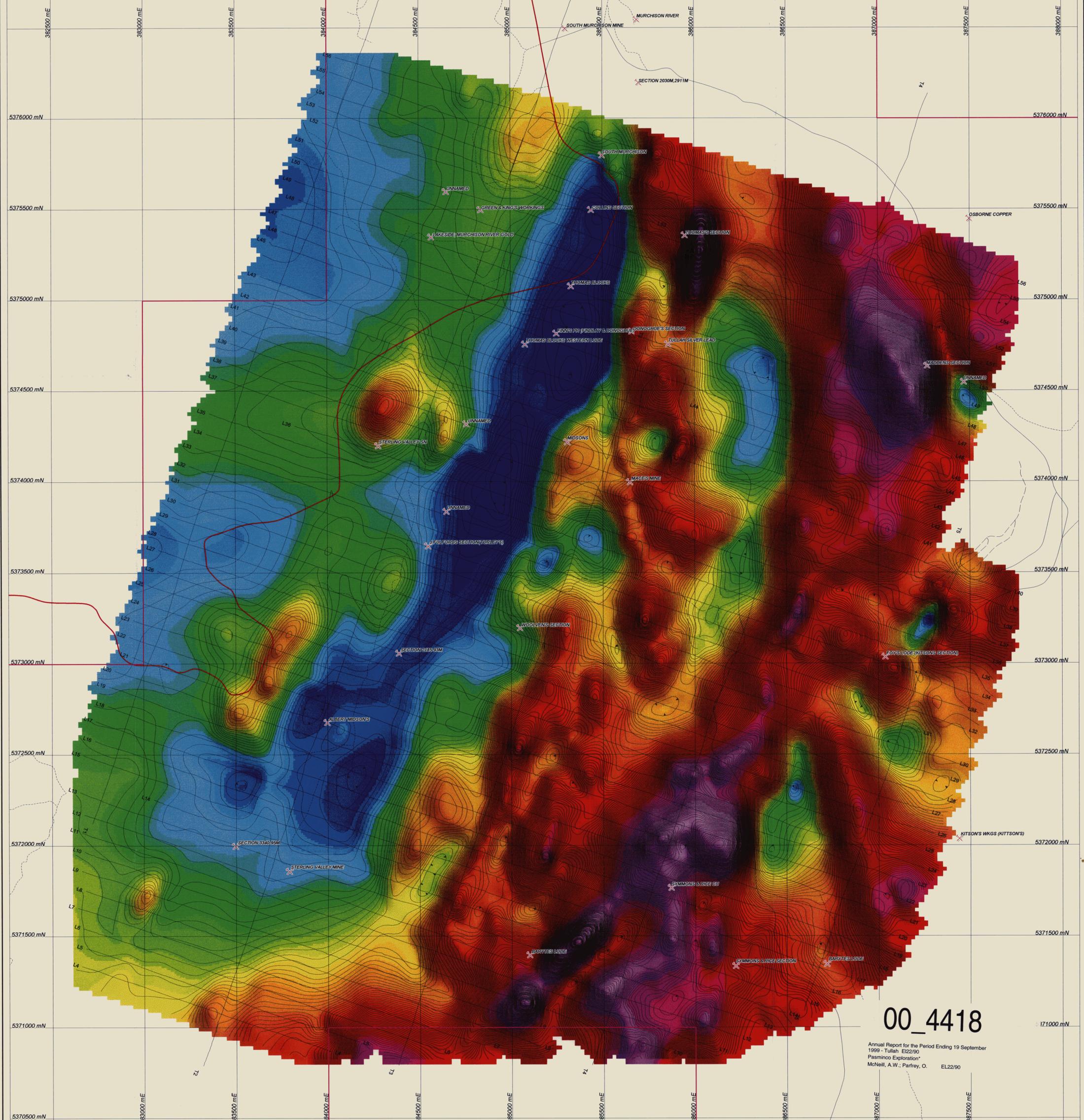
DTM = GPS Height - Radar Altimeter



Digital Elevation Model (mRL)

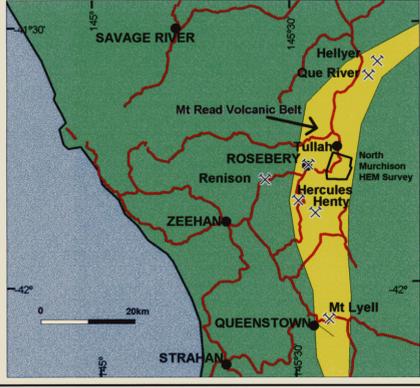
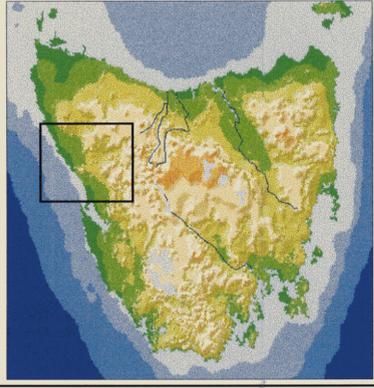


	PASMINCO EXPLORATION ETS Melbourne	
	168099	TASMANIA
Date: August 1999	North Murchison EL22/90 Heliborne Electromagnetic Survey Digital Terrain Model Image and Contours	
Author: C Dauth	Projection: SUTM55 AGD84	
Office: ETS	Scale: 1:10,000	
Ref:	Fig 9	



00\_4418

Annual Report for the Period Ending 19 September  
1999 - Tullah EL22/90  
Pasmaenco Exploration\*  
McNeill, A.W.; Parfrey, O. EL22/90



**Survey Specifications**

Survey Date: March 1999  
Contractor: Geo Instruments Pty Ltd  
Line Spacing: 100m  
Line Direction: 110-290 degrees  
Sample Interval: 0.1 sec (1-4 m)  
Terrain Clearance: Nominal 60m  
Bird Clearance: Nominal 30m  
Magnetometer: Geometrics G8  
EM System: Geotech Hummingbird  
Frequencies: 34K, 7001Hz, 6606Hz, 980Hz, and 385Hz  
Flight Path Recovery: Real Time GPS  
GPS: Novatel 951R GPS Receiver  
Radar Altimeter: Sperry AA210  
GPS Base Station: Fugro Melbourne  
Aircraft: Squirrel

**Legend**

- Road
- Mineral Occurrence (from Minloc database)

**Image Parameters**

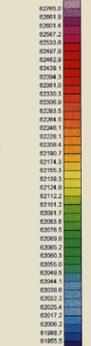
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Colour Table: Pseudocolour  
Limits: 100%  
Histogram Transform: Equalisation  
Layer 2: TMI  
Colour Table: Intensity  
Limits: 100%  
Histogram Transform: Equalisation  
Sunangle: NE at 45 degrees

**Contour Parameters**

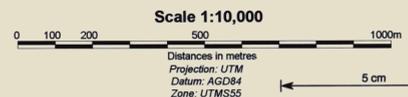
Contour: TMI  
Interval: 10 nT

**Processing Parameters**

Diurnal Correction  
Tie-line Correction  
IGRF Correction  
Gridded at 25m Cell Size  
Min. Curve. in GEOSOF

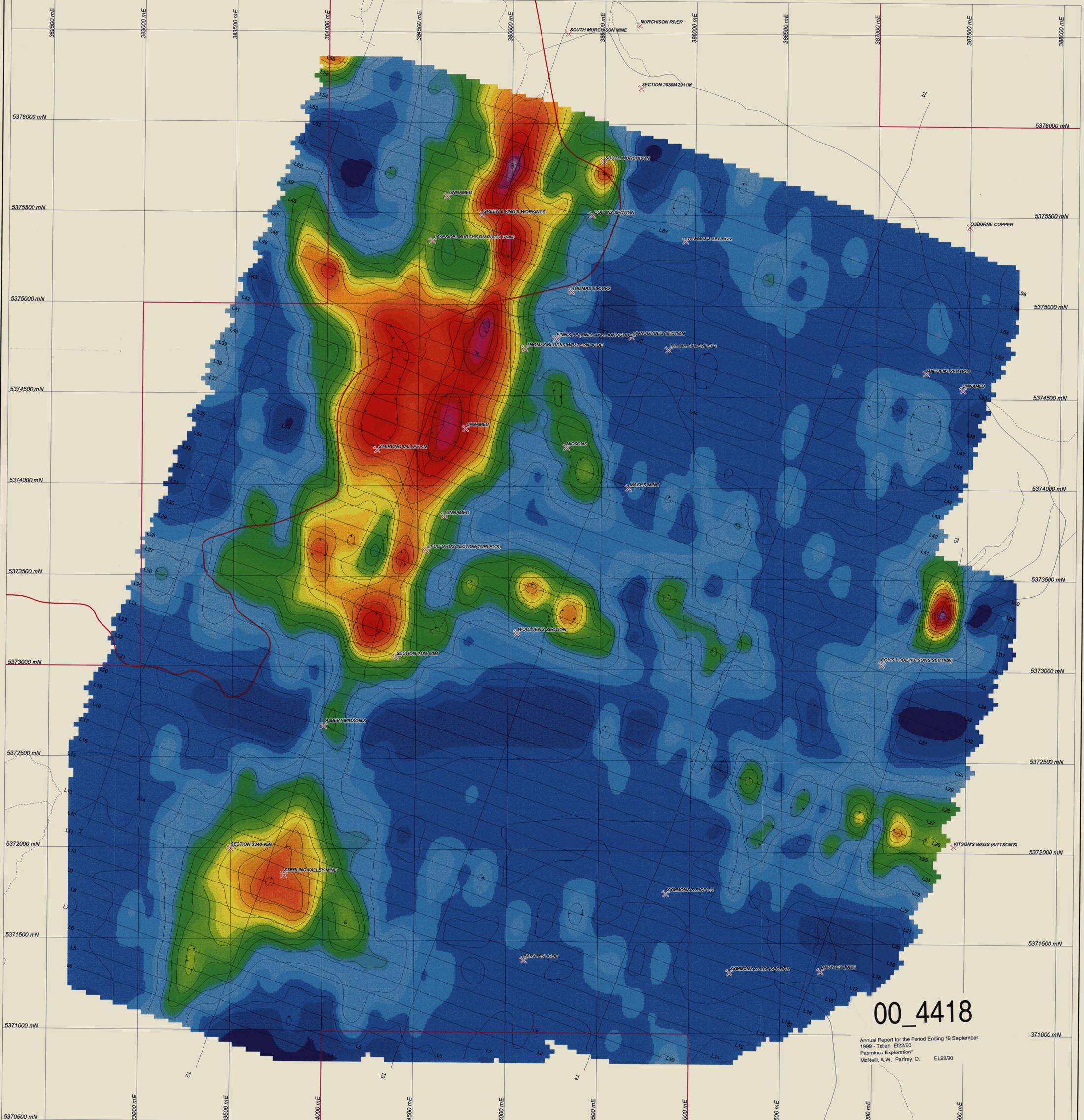


Total Magnetic Intensity (nanoTesla)



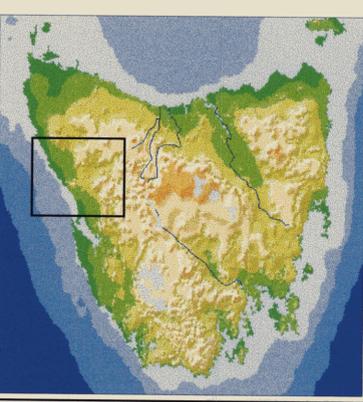
	PASMINCO EXPLORATION ETS Melbourne	
	168093 TASMANIA	
Date: August 1999	North Murchison EL22/90 Heliborne Electromagnetic Survey TOTAL MAGNETIC INTENSITY Image and Contours	
Author: C Dauth		
Office: ETS		
Ref:		
Scale: 1:10,000	Projection: SUTM55 AGD84	Fig 10





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Annual Report for the Period Ending 19 September  
1999 - Tullah E122/90  
Pasmenco Exploration\*  
McNeill, A.W.; Parfrey, O. EL22/90



**Survey Specifications**

Survey Date: March 1999  
Contractor: Geo Instruments Pty Ltd  
Line Spacing: 100m  
Line Direction: 110-290 degrees  
Sample Interval: 0.1 sec (1-4 m)  
Terrain Clearance: Nominal 60m  
Bird Clearance: Nominal 30m  
Magnetometer: Geometrics G8  
EM System: Geotech Hummingbird  
Frequencies: 34K, 7001Hz, 6606Hz, 980Hz, and 385Hz  
Flight Path Recovery: Real Time GPS  
GPS: Novatel 951R GPS Receiver  
Radar Altimeter: Sperry AA210  
GPS Base Station: Fugro Melbourne  
Aircraft: Squirrel

**Legend**

— Road  
A Mineral Occurrence (from Minloc database)

**Image Parameters**

Layer 1: App. Res. 6606 Hz  
Colour Table: Pseudocolour  
Limits: 100%  
Histogram Transform: Linear

**Contour Parameters**

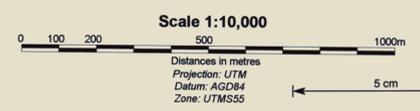
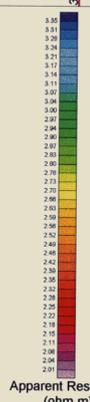
Contour: App. Res. 6606 Hz  
Interval: 0.1 ohm.m

**Processing Parameters**

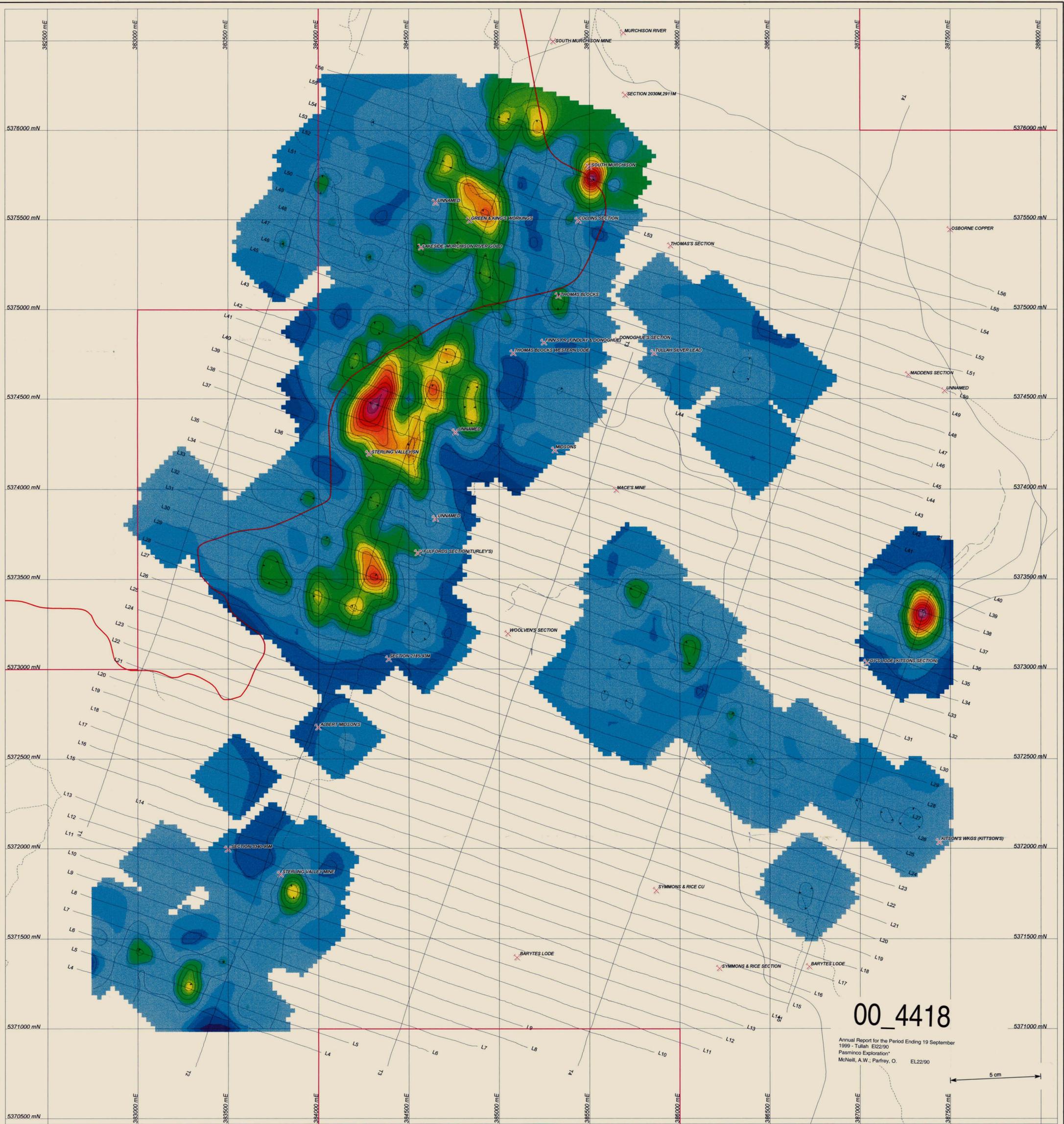
Levelled using high altitude flights and low level non-anomalous response.  
Apparent resistivity computed for a pseudo half space model.

**EM Coil Geometry**

6606 Hz is co-planer



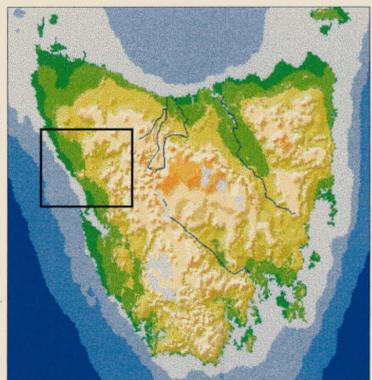
	<b>PASMINCO EXPLORATION</b> ETS Melbourne	
	<b>168093 TASMANIA</b>	
Date: August 1999	<b>North Murchison EL22/90</b> Heliborne Electromagnetic Survey Image and Contours of Apparent Resistivity at 6,606 Hz	
Author: C Dauth	Scale: 1:10,000    Projection: SUTM55 AGD84 <b>Fig 12</b>	
Office: ETS		
Ref:		



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Annual Report for the Period Ending 19 September  
1999 - Tullah E122/90  
Pasmaenco Exploration  
McNeill, A.W.; Parfrey, O. EL22/90

5 cm



**Survey Specifications**

Survey Date: March 1999  
Contractor: Geo Instruments Pty Ltd  
Line Spacing: 100m  
Line Direction: 110-290 degrees  
Sample Interval: 0.1 sec (1-4 m)  
Terrain Clearance: Nominal 60m  
Bird Clearance: Nominal 30m  
Magnetometer: Geometrics G8  
EM System: Geotech Hummingbird  
Frequencies: 34K, 7001Hz, 6006Hz, 980Hz, and 385Hz  
Flight Path Recovery: Real Time GPS  
GPS: Novatel 951R GPS Receiver  
Radar Altimeter: Sperry AA210  
GPS Base Station: Fugro Melbourne  
Aircraft: Squirrel

**Legend**

— Road  
X Mineral Occurrence (from Minloc database)

**Image Parameters**

Layer 1: App. Res. 385 Hz  
Colour Table: Pseudocolour  
Limits: 100%  
Histogram Transform: Linear

**Contour Parameters**

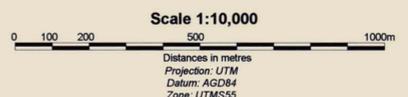
Contour: App. Res. 385 Hz  
Interval: 0.1 ohm.m

**Processing Parameters**

Levelled using high altitude flights and low level non-anomalous response.  
Apparent resistivity computed for a pseudo half space model.

**EM Coil Geometry**

385 Hz is co-planer



	PASMENCO EXPLORATION ETS Melbourne 168092	
	<b>TASMANIA</b>	
Date: August 1999	North Murchison EL22/90 Heliborne Electromagnetic Survey Image and Contours of Apparent Resistivity at 385 Hz	
Author: C Dauth		
Office: ETS		
Ref:		
Scale: 1:10,000	Projection: SUTM55 AGD84	Fig 13

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**APPENDIX 5**

**North Murchison Prospect - Rock Chip Sampling  
Analytical Results**

Appendix 5  
Nth Murchison  
Rock Chip Sampling  
Results

Sample No	Sample Type	UTM East	UTM North	Prospect	Elevation No	Ag ppm	As ppm	Au ppm	Au(R) ppb	Ba ppm	Bi ppm	Cd ppm	Co ppm	Cu ppm	Fe ppm	Mn ppm	Ni ppm	Pb ppm	Sn ppm	Sb ppm	Zn ppm	SQS	Comments
272691	R/CHIP	386150	5373145	MURCHISON	22/90	2.4	63	-0.001		1100	1.9	5.2	-5	138	7500	305	12	1150	4.3	6.4	1290	3719	narrow pyrite zone in massive volcaniclastic; field sample 1
272692	R/CHIP	386125	5373280	MURCHISON	22/90	0.7	19	0.003		235	0.8	0.4	13	245	163000	1530	36	160	14.1	1.7	412	3719	narrow magnetic vein separating texturally distinct quartz-feldspar-porphyrtes; field sample 2
272693	R/CHIP	385405	5373465	MURCHISON	22/90	3	10	0.035		805	2.4	0.5	33	2290	150000	1060	19	195	69.8	1.3	275	3719	narrow zone of veining in quartz-feldspar-porphyry; field sample 3
272694	R/CHIP	385535	5373225	MURCHISON	22/90	20.9	10	0.001	-3000	360	0.4	31.9	-5	68	61000	3710	12	7250	77.2	2.3	6620	3719	dump sample from old workings; field sample 5
272695	R/CHIP	385535	5373225	MURCHISON	22/90	38.2	3	0.001		315	0.4	91.0	-5	38	40500	2390	-10	33000	71.6	6.3	19600	3719	dump sample from old workings; field sample 6
272696	R/CHIP	385950	5373300	MURCHISON	22/90	32.7	357	0.009	-3000	255	-0.1	91.8	8	329	56000	4020	14	10000	26	3.2	18200	3719	mineralisation in fault zone; field sample 7
272697	R/CHIP	385950	5373295	MURCHISON	22/90	8.7	34	0.002		180	-0.1	22.7	8	100	58500	4740	14	3490	22.6	1.6	4800	3719	mineralisation in fault zone; field sample 8
272698	R/CHIP	385050	5373290	MURCHISON	22/90	14.5	34	0.409	483	255	-0.1	30	8	104	59000	6100	16	4720	17	1.9	5970	3719	mineralisation from float of fault zone; field sample 10
272699	R/CHIP	385050	5373290	MURCHISON	22/90	26.3	38	0.005		255	-0.1	55.9	6	191	63500	16700	15	8680	15.1	2.3	10600	3719	float of mineralisation fault zone; field sample 11
272700	R/CHIP	385950	5373305	MURCHISON	22/90	110	289	0.038		155	0.3	76.1	8	562	58500	7260	-10	11100	42.7	6.1	14800	3719	gold/p/c of mineralisation from bed off track; field sample 12
330534	R/CHIP	385765	5376260	MURCHISON	22/90	1.7	5	-0.001		880	-0.1	0.9	-5	8	23000	240	-10	125	3.6	4	169	3719	grey sericitic, chloritic volcaniclastic - red staining on cleavage surfaces (hematite), possibly minor sphalerite
330535	R/CHIP	385832	5376290	MURCHISON	22/90	8	3	-0.001		660	0.2	0.4	-5	190	24500	2070	-10	38	1.8	1	310	3719	strongly sericitic felsic volcaniclastic - some red staining on cleavage - quartz veined
330536	R/CHIP	385843	5376287	MURCHISON	22/90	7.9	8	-0.001		825	0.6	1.4	7	110	34500	1530	-10	1910	2.3	1.7	675	3719	strongly cleaved, fine grained sericitic volcanic. Patchy flecks of chlorite alteration, minor galena on cleavage - weakly pyritic
330537	R/CHIP	387640	5373365	MURCHISON	22/90	5.6	64	0.096	124	200	15.9	0.5	302	1085	154000	2230	-10	88	5.3	2.1	427	3719	strongly chloritic and pyritic (3%) volcanic
330538	R/CHIP	387647	5373370	MURCHISON	22/90	0.4	19	0.009		735	2.2	0.3	25	61	63000	1320	-10	30	3.8	1.7	227	3719	strongly chloritic and pyritic (2%) volcanic
330539	R/CHIP	388561	5374509	MURCHISON	22/90	0.5	4	-0.001		195	2.2	2.2	46	80	72500	6340	-10	94	6	5.2	809	3719	chloritic granite next to small fault - possibly minor copper staining
330541	R/CHIP	388646	5374558	MURCHISON	22/90	285	585	0.03		42	646	275	48	7240	153000	3100	47	4660	11.4	2.8	56000	3719	strongly chloritic and pyritic (pyrite + arsenopyrite) rich gossans volcanic. Sulphide content ~5%
330542	R/CHIP	387050	5375890	MURCHISON	22/90	5.3	171	0.037		67	33.2	2.2	138	647	427000	1330	225	255	60.8	4.2	1635	3719	strongly chloritic, highly pyritic gossan (float) sample from side of road (Murchison Dam Rd) >5% sulphides
330543	R/CHIP	387725	5374290	MURCHISON	22/90	5.2	20	0.002		255	9	2.4	8	112	53500	2090	-10	94	9	0.9	756	3719	chlorite, sericite, silica altered rhyolite - weakly pyritic
330544	R/CHIP	387180	5375520	MURCHISON	22/90	0.7	9	0.016		770	3.3	0.4	12	156	63000	1300	-10	34	8.2	1.4	256	3719	dark green chloritic - medium grained volcanic - moderately pyritic (2%)
330545	R/CHIP	387220	5375430	MURCHISON	22/90	1.6	34	0.107	114	320	19.9	0.6	74	487	141000	2900	48	38	4.7	2.7	281	3719	dark green chloritic volcanic - moderately pyritic (2%) also magnetic - veins of magnetite
330546	R/CHIP	385207	5377776	MURCHISON	22/90	1.9	5	0.002		435	1	0.3	-5	1700	17800	385	25	-20	1.1	1.1	72	3719	pale orange sericite - carbonate, silica altered rhyolite - carbonate & silica veins - pyritic & copper staining

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**APPENDIX 6**

**East Stitt Grid - Soil Sampling  
Analytical Results**

Appendix 6a  
East Stitt MMI Sampling  
Results

Sample No	Sample Type	UTM East	UTM North	Prospect	Tenement No	Ag ppm	As ppm	Au ppm	Ba ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	La ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Sm ppm	Tl ppm	Zn ppm	SDS	Colour	Comments
330451	MMI	381900	5369200	EAST STITT	22/90	0.002	0.032	0.0003	1.5	0.033	0.026	-0.1	2.5	0.128	0.016	0.184	6.4	-0.001	0.004	0.001	1.9	3828	grey	dense tall scrub
330452	MMI	381525	5369200	EAST STITT	22/90	0.0004	0.062	-0.00001	0.274	0.06	0.086	-0.1	0.572	0.121	0.006	0.102	5.2	0.001	0.014	-0.001	8.9	3828	brown	dense bush, light horizontal
330453	MMI	382000	5369200	EAST STITT	22/90	0.0016	0.149	-0.00001	0.816	0.029	0.041	-0.1	0.604	0.153	0.013	0.073	3.9	-0.001	0.013	-0.001	1.2	3828	dark grey	dense bush - end of line
330454	MMI	381975	5369600	EAST STITT	22/90	0.0012	0.021	-0.00001	0.766	0.007	0.016	-0.1	0.658	0.107	0.021	0.147	1.7	-0.001	0.005	-0.001	1.7	3828	grey	thick horizontal scrub
330455	MMI	381500	5369200	EAST STITT	22/90	0.0022	0.063	-0.00001	0.794	0.012	0.048	-0.1	0.576	0.116	0.029	0.124	2.8	-0.001	0.009	-0.001	1.4	3828	grey	dense bush
330456	MMI	381750	5369600	EAST STITT	22/90	0.0032	0.589	0.00029	2.4	0.022	0.077	0.8	1.3	0.133	0.034	0.147	3.4	0.001	0.013	-0.001	2.2	3828	orange/grey	thick horizontal scrub
330457	MMI	381575	5369200	EAST STITT	22/90	0.0014	0.051	-0.00001	0.701	0.024	0.028	-0.1	0.724	0.081	0.025	0.169	3.2	-0.001	0.002	-0.001	2.2	3828	light grey	tall dense bush, thick ground cover
330458	MMI	381700	5369600	EAST STITT	22/90	0.0011	0.374	-0.00001	8.5	0.026	2.6	3.8	2	1.4	0.013	0.397	11	0.003	0.126	0.008	2	3828	dark brown	tall dense bush, thick horizontal
330459	MMI	381950	5369200	EAST STITT	22/90	0.00075	0.035	-0.00001	0.957	0.031	0.026	-0.1	0.305	0.108	0.027	0.131	1.8	-0.001	0.006	-0.001	2.6	3828	brown	thick scrub
330460	MMI	382150	5369600	EAST STITT	22/90	0.00075	0.101	-0.00001	0.096	0.057	0.028	-0.1	0.244	0.021	0.013	0.12	2.5	-0.001	0.005	-0.001	6.5	3828	brown	thick scrub
330462	MMI	381650	5369200	EAST STITT	22/90	0.0018	0.363	0.0002	7.7	0.025	0.969	2.8	3.5	0.373	0.039	1.7	3.5	0.003	0.036	0.001	6.6	3828	brown/orange	thick scrub - start of line
330463	MMI	381750	5369200	EAST STITT	22/90	0.0011	0.059	-0.00001	2.1	0.012	0.036	-0.1	1.2	0.206	0.021	0.271	5.1	-0.001	0.012	-0.001	1.7	3828	grey	thick scrub, thick horizontal
330464	MMI	381600	5369200	EAST STITT	22/90	0.0016	0.027	-0.00001	0.68	0.049	0.102	-0.1	0.836	0.045	0.019	0.168	4.7	-0.001	0.003	-0.001	4	3828	brown	thick dense bush
330465	MMI	382000	5369600	EAST STITT	22/90	0.0009	0.04	-0.00037	0.775	0.028	0.029	-0.1	0.281	0.084	0.024	0.16	1.2	-0.001	0.008	-0.001	1.4	3828	grey	horizontal scrub
330466	MMI	381850	5369200	EAST STITT	22/90	0.0033	0.034	-0.00001	1.3	0.02	0.05	-0.1	0.452	0.058	0.029	0.183	2.3	-0.001	-0.001	-0.001	1.6	3828	grey	dense bush, thick horizontal
330467	MMI	381975	5369200	EAST STITT	22/90	0.0005	0.094	-0.00001	0.014	0.036	0.027	-0.1	0.305	0.026	0.013	0.133	4.7	-0.001	0.005	-0.001	6.3	3828	dark brown	dense short scrub
330468	MMI	381625	5369200	EAST STITT	22/90	0.0022	0.031	-0.00001	0.416	0.012	0.04	-0.1	0.526	0.063	0.027	0.193	0.48	-0.001	0.006	-0.001	1.2	3828	grey	tall dense bush
330469	MMI	381800	5369600	EAST STITT	22/90	0.0022	0.043	-0.00001	1	0.023	0.03	-0.1	0.623	0.155	0.016	0.117	1.8	-0.001	0.011	0.001	1.3	3828	light grey	horizontal scrub
330470	MMI	382075	5369600	EAST STITT	22/90	0.001	0.073	-0.00001	0.804	0.051	0.042	-0.1	0.416	0.138	0.029	0.334	4	-0.001	0.017	-0.001	14	3828	brown	DUPLICATE
330471	MMI	381775	5369200	EAST STITT	22/90	0.0021	0.026	-0.00001	1.1	0.006	0.029	-0.1	0.662	0.122	0.027	0.209	2.3	-0.001	0.007	-0.001	1	3828	grey	tall thick scrub
330472	MMI	381700	5369200	EAST STITT	22/90	0.0035	0.089	-0.00001	1.1	0.028	0.125	0.1	1.1	0.168	0.024	0.29	1.6	-0.001	0.01	-0.001	2.5	3828	grey	thick tall scrub
330475	MMI	382075	5369600	EAST STITT	22/90	0.0018	0.092	-0.00001	1.3	0.061	0.034	-0.1	0.164	0.241	0.012	0.122	5.8	-0.001	0.02	-0.001	15.5	3828	brown	mud - thick scrub
330477	MMI	381650	5369200	EAST STITT	22/90	0.0013	0.032	-0.00001	0.732	0.013	0.029	-0.1	0.553	0.104	0.015	0.124	2.6	-0.001	0.005	-0.001	1.5	3828	light grey	open tall bush
330478	MMI	382100	5369600	EAST STITT	22/90	0.00085	0.056	-0.00001	1	0.061	0.049	-0.1	2.2	0.175	0.011	0.176	8.4	-0.001	0.022	-0.001	5.9	3828	brown	thick scrub, cutty grass
330479	MMI	381925	5369600	EAST STITT	22/90	0.0036	0.023	0.00765	0.746	0.016	0.03	-0.1	0.478	0.098	0.017	0.136	1.4	-0.001	0.008	-0.001	1.2	3828	grey	dense scrub
330481	MMI	381875	5369200	EAST STITT	22/90	0.003	0.069	-0.00001	0.996	0.036	0.055	0.1	0.794	0.287	0.024	0.836	4.1	-0.001	0.008	-0.001	2.2	3828	light grey	tall dense bush
330482	MMI	381800	5369200	EAST STITT	22/90	0.00085	0.064	0.00041	2.2	0.029	0.037	-0.1	1.6	0.148	0.012	0.22	7.1	0.002	-0.001	0.002	2.5	3828	grey	tall dense scrub
330483	MMI	382025	5369600	EAST STITT	22/90	-0.00005	0.066	0.00042	1	0.03	0.035	-0.1	0.152	0.072	-0.001	0.168	2.3	0.002	0.007	-0.001	6	3828	brown	short thick scrub
330484	MMI	381775	5369600	EAST STITT	22/90	0.0048	0.085	0.00066	1.4	0.016	0.066	0.2	1.1	0.223	0.017	0.152	2.8	0.001	0.017	-0.001	2.4	3828	brown	horizontal scrub
330485	MMI	381825	5369600	EAST STITT	22/90	0.0042	0.039	0.00082	1.6	0.021	0.036	-0.1	1.1	0.248	0.026	0.097	3.2	0.001	0.015	0.003	1.7	3828	brown	thick horizontal scrub
330486	MMI	381725	5369200	EAST STITT	22/90	0.0042	0.362	0.00086	2.5	0.03	0.116	0.5	1.4	0.224	0.018	0.227	4	0.006	0.019	-0.001	2.3	3828	orange	thick tall scrub
330487	MMI	382050	5369600	EAST STITT	22/90	0.0017	0.067	0.00052	1.2	0.049	0.018	-0.1	0.208	0.098	-0.001	0.014	3.2	0.001	0.008	0.002	4.5	3828	brown	thick short scrub
330488	MMI	382125	5369600	EAST STITT	22/90	0.004	0.064	-0.00001	0.846	0.101	0.041	-0.1	0.248	0.054	-0.001	0.006	5	0.001	0.005	0.001	9.7	3828	brown	short thick scrub
330490	MMI	381825	5369200	EAST STITT	22/90	-0.00005	0.049	-0.00001	0.372	0.052	0.048	-0.1	0.553	0.074	-0.001	0.16	5.1	-0.001	0.007	0.001	5.3	3828	brown	dense bush, thick horizontal
330491	MMI	381900	5369600	EAST STITT	22/90	0.0008	0.025	0.00106	0.462	0.011	0.012	-0.1	0.442	0.062	0.011	0.054	0.733	0.001	0.005	-0.001	0.641	3828	grey	dense scrub, rock outcrop
330492	MMI	381675	5369600	EAST STITT	22/90	0.0012	0.287	0.00036	10	0.02	1.7	2.6	2.1	0.815	0.006	0.314	5.9	0.005	0.098	0.007	2.6	3828	brown	tall dense bush
330493	MMI	381925	5369200	EAST STITT	22/90	0.00075	0.063	0.00054	1.7	0.072	0.05	0.1	1	0.196	0.005	0.174	7	0.001	0.01	0.003	3.1	3828	brown	tall dense scrub
330494	MMI	381875	5369600	EAST STITT	22/90	0.0006	0.062	0.00009	0.065	0.057	0.028	-0.1	0.861	0.032	0.004	0.068	5	-0.001	0.008	0.003	7.2	3828	brown	thick horizontal scrub
330495	MMI	381950	5369600	EAST STITT	22/90	0.0013	0.036	0.00116	0.718	0.022	0.025	-0.1	1.6	0.111	-0.001	0.075	4.1	-0.001	0.008	0.002	2.3	3828	brown	horizontal scrub
330496	MMI	381725	5369600	EAST STITT	22/90	0.0016	0.52	0.00074	5.3	0.026	0.133	4	1.7	0.383	0.01	0.179	4.9	0.004	0.008	0.002	1.8	3828	orange	thick dense bush
330497	MMI	381550	5369200	EAST STITT	22/90	0.0021	0.054	0.00113	0.37	0.006	0.016	0.2	0.421	0.092	0.012	0.043	0.811	-0.001	0.007	-0.001	0.616	3828	grey	dense bush
330498	MMI	381850	5369600	EAST STITT	22/90	0.0058	0.023	0.00171	0.451	0.014	0.016	-0.1	0.561	0.096	-0.001	0.011	1.1	-0.001	0.007	0.002	1.1	3828	grey	thick horizontal scrub
330499	MMI	381675	5369200	EAST STITT	22/90	0.0029	0.056	0.00064	0.621	0.029	0.082	-0.1	0.58	0.092	-0.001	0.045	1.2	-0.001	0.006	0.001	2.7	3828	grey	tall dense bush
330500	MMI	381750	5369200	EAST STITT	22/90	0.0038	0.053	0.00058	2.1	0.017	0.035	0.1	1.4	0.251	0.005	0.184	6.2	0.001	0.014	-0.001	1.5	3828	grey	DUPLICATE

Appendix 6b  
East Stitt Soil Sampling  
Results

Sample No	Sample Type	Sample Depth	UTM East	UTM North	Prospect	Tenement No	Au ppm	Au(R) ppm	Pb ppm	As ppm	Ag ppm	Cd ppm	Sn ppm	Bi ppm	Sb ppm	Cu ppm	Zn ppm	Ni ppm	Co ppm	Fe ppm	Mn ppm	Ba ppm	SDS	Colour	Comments
330351	SOIL	0.35	381900	5369200	EAST STITT	22/90	0.009		21	4	0.2	-0.1	1.1	0.1	1.3	20	23	16	-5	3560	53	72	3829	light grey	dense tall scrub
330352	SOIL	0.2	381525	5369200	EAST STITT	22/90	0.01		23	4	0.2	-0.1	0.8	-0.1	0.9	12	29	-10	-5	3230	51	31	3829	brown	dense bush, light horizontal
330353	SOIL	0.5	382000	5369200	EAST STITT	22/90	0.002		10	3	0.1	0.1	1.2	-0.1	0.6	9	12	11	-5	3760	31	32	3829	light grey	dense bush - end of line
330354	SOIL	0.6	381975	5369600	EAST STITT	22/90	0.001		7	3	0.1	-0.1	0.9	-0.1	0.8	8	16	-10	-5	2730	36	27	3829	brown	thick horizontal scrub
330355	SOIL	0.35	381500	5369200	EAST STITT	22/90	-0.001		7	3	0.1	-0.1	1.2	-0.1	0.9	-5	11	-10	-5	3630	39	72	3829	light grey	dense bush
330356	SOIL	0.55	381750	5369600	EAST STITT	22/90	-0.001		19	20	0.1	-0.1	2.5	-0.1	2.9	-5	45	-10	-5	25000	130	235	3829	orange	thick horizontal scrub
330357	SOIL	0.25	381575	5369200	EAST STITT	22/90	-0.001		11	5	-0.1	-0.1	1.3	-0.1	0.9	-5	41	-10	-5	28500	335	130	3829	light orange	tall dense bush, thick ground cover
330358	SOIL	0.5	381700	5369600	EAST STITT	22/90	0.001		30	20	0.2	-0.1	2.8	-0.1	2.3	8	70	-10	6	42000	275	295	3829	orange	tall dense bush, thick horizontal
330359	SOIL	0.25	381950	5369200	EAST STITT	22/90	0.002	0.002	12	-1	-0.1	-0.1	1.1	-0.1	0.8	-5	11	-10	-5	4860	45	42	3829	brown	thick scrub
330360	SOIL	0.5	382150	5369600	EAST STITT	22/90	0.004		5	450	1.6	6.3	6.8	83.5	1.9	-5	21	-10	-5	2080	39	25	3829	brown	thick short scrub - end of line
330362	SOIL	0.35	381650	5369600	EAST STITT	22/90	0.001		25	22	0.3	-0.1	2.5	1.7	2.8	201	63	-10	6	38000	370	230	3829	orange	thick scrub
330363	SOIL	0.35	381750	5369200	EAST STITT	22/90	0.002		19	8	0.2	-0.1	1.8	0.4	1.6	36	100	23	8	30000	450	210	3829	dark orange	thick scrub, thick horizontal
330364	SOIL	0.2	381600	5369200	EAST STITT	22/90	0.001		17	5	-0.1	-0.1	0.8	1	0.4	21	23	14	-5	3440	69	16	3829	brown	thick dense bush
330365	SOIL	0.35	382000	5369600	EAST STITT	22/90	0.006		11	9	0.2	-0.1	1.6	0.2	1.2	45	38	28	-5	6440	125	110	3829	brown	horizontal scrub
330366	SOIL	0.25	381850	5369200	EAST STITT	22/90	0.012		18	18	0.2	-0.1	2.1	0.2	2.3	17	43	12	-5	8890	88	240	3829	light grey	dense bush, thick horizontal
330367	SOIL	0.4	381975	5369200	EAST STITT	22/90	0.004		45	6	0.3	0.2	1.2	0.1	1	10	56	-10	-5	3780	47	-10	3829	dark brown	dense short scrub
330368	SOIL	0.3	381625	5369200	EAST STITT	22/90	-0.001		7	6	-0.1	-0.1	0.9	-0.1	1.2	-5	14	-10	-5	3660	38	67	3829	grey	tall dense bush
330369	SOIL	0.3	381800	5369600	EAST STITT	22/90	-0.001		7	5	0.2	-0.1	1.3	-0.1	1	6	14	-10	-5	3740	61	81	3829	brown	horizontal scrub
330370	SOIL	0.4	382075	5369600	EAST STITT	22/90	0.001		15	5	0.1	0.1	1.3	-0.1	0.9	6	33	-10	-5	2990	36	-10	3829		DUPLICATE
330371	SOIL	0.35	381775	5369200	EAST STITT	22/90	0.004		6	3	-0.1	-0.1	0.9	-0.1	0.9	-5	13	-10	-5	3110	34	56	3829	light grey	tall thick scrub
330372	SOIL	0.35	381700	5369200	EAST STITT	22/90	0.002		9	5	0.1	-0.1	1	-0.1	1.2	-5	15	-10	-5	3340	32	105	3829	light grey	thick tall scrub
330375	SOIL	0.4	382075	5369600	EAST STITT	22/90	0.007		25	11	0.2	0.1	1.2	-0.1	1.2	23	81	24	-5	5320	51	13	3829	brown	thick short scrub
330377	SOIL	0.3	381650	5369200	EAST STITT	22/90	-0.001		6	3	-0.1	-0.1	0.8	-0.1	0.7	7	17	11	-5	4180	35	35	3829	light grey	open tall bush
330378	SOIL	0.25	382100	5369600	EAST STITT	22/90	0.008		11	5	0.2	-0.1	1.4	-0.1	1.3	7	23	12	-5	4630	73	93	3829	light grey	short thick scrub
330379	SOIL	0.25	381925	5369600	EAST STITT	22/90	0.003		4	4	0.1	-0.1	1	-0.1	1.1	-5	11	-10	-5	3270	53	73	3829	light grey	thick scrub
330381	SOIL	0.35	381875	5369200	EAST STITT	22/90	0.001		15	6	0.2	-0.1	1.6	-0.1	2	-5	29	11	-5	5830	54	180	3829	light grey	tall dense bush
330382	SOIL	0.25	381800	5369200	EAST STITT	22/90	0.008		8	4	-0.1	-0.1	1.3	-0.1	1.4	-5	13	-10	-5	5260	35	120	3829	grey	tall dense scrub
330383	SOIL	0.45	382025	5369600	EAST STITT	22/90	0.021		17	2	-0.1	0.1	0.9	-0.1	0.9	-5	36	-10	-5	2630	34	14	3829	brown	short thick scrub
330384	SOIL	0.6	381775	5369600	EAST STITT	22/90	0.008		9	6	0.1	-0.1	1.2	-0.1	2	-5	21	-10	-5	4400	97	140	3829	brown	horizontal scrub
330385	SOIL	0.4	381825	5369600	EAST STITT	22/90	0.002		3	2	0.1	-0.1	1.2	-0.1	1	-5	12	-10	-5	3580	52	96	3829	light grey	thick horizontal scrub
330386	SOIL	0.4	381725	5369200	EAST STITT	22/90	0.001		24	7	0.2	-0.1	1.7	-0.1	3.4	-5	44	-10	-5	12600	47	140	3829	dark orange	thick tall scrub
330387	SOIL	0.35	382050	5369600	EAST STITT	22/90	0.004		15	2	0.1	0.1	1.1	-0.1	1	9	26	-10	-5	3430	49	32	3829	brown	short thick scrub
330388	SOIL	0.4	382125	5369600	EAST STITT	22/90	0.003		32	2	0.2	0.3	0.6	-0.1	0.9	15	52	-10	-5	2170	110	-10	3829	brown	short thick scrub
330390	SOIL	0.3	381825	5369200	EAST STITT	22/90	0.002		19	2	0.2	0.1	1.2	-0.1	1.3	8	28	-10	-5	5530	60	94	3829	brown	dense bush, thick horizontal
330391	SOIL	0.35	381900	5369600	EAST STITT	22/90	0.002	0.002	3	1	0.1	-0.1	0.9	-0.1	1	-5	11	-10	-5	3160	61	96	3829	light grey	dense scrub, rock outcrop
330392	SOIL	0.4	381675	5369600	EAST STITT	22/90	-0.001		16	15	0.2	-0.1	2.5	-0.1	2.5	13	72	-10	10	42500	700	305	3829	orange	tall dense bush
330393	SOIL	0.3	381925	5369200	EAST STITT	22/90	0.004		7	-1	0.2	-0.1	1	-0.1	1.1	-5	15	-10	-5	4500	54	110	3829	brown	tall dense scrub
330394	SOIL	0.35	381875	5369600	EAST STITT	22/90	0.002		10	-1	0.1	-0.1	1.4	-0.1	1	-5	11	-10	-5	3860	69	65	3829	light grey	thick horizontal scrub
330395	SOIL	0.3	381950	5369600	EAST STITT	22/90	0.007		3	-1	0.1	-0.1	1	-0.1	1	-5	8	-10	-5	3090	43	66	3829	light grey	horizontal scrub
330396	SOIL	0.5	381725	5369600	EAST STITT	22/90	0.001		21	10	0.1	-0.1	2.1	-0.1	2.2	6	40	-10	-5	35500	165	230	3829	orange	thick dense bush
330397	SOIL	0.3	381550	5369200	EAST STITT	22/90	0.005		5	3	0.1	-0.1	1.1	-0.1	1	-5	7	-10	-5	4230	41	76	3829	grey	dense bush
330398	SOIL	0.3	381850	5369600	EAST STITT	22/90	0.001		2	-1	0.1	-0.1	1	-0.1	0.7	6	7	-10	-5	3440	48	46	3829	light grey	thick horizontal scrub
330399	SOIL	0.35	381675	5369200	EAST STITT	22/90	0.001	0.001	10	-1	0.1	-0.1	0.8	-0.1	0.8	-5	12	-10	-5	2410	33	65	3829	light grey	tall dense bush
330400	SOIL	0.35	381750	5369200	EAST STITT	22/90	0.004		10	6	0.1	-0.1	1.6	-0.1	1.6	8	72	22	6	24500	345	220	3829		DUPLICATE

**APPENDIX 7**

**Bruce Creek Prospect - Rock Chip Sampling  
Analytical Results**

Appendix 7  
Bruce Creek Rock Chip Sampling Results

Sample No.	Sample Type	UTM East	UTM North	Local East	Local North	Prospect	Tenement No.	Ag ppm	As ppm	Au ppm	Au(R) ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cu ppm	Fe ppm	K ppm	Mg ppm	Mn ppm	Na ppm	Ni ppm	Pb ppm	Sn ppm	Sb ppm	Zn ppm	Comments
274047	R/CHIP	384109	5373201	384120	5373200	BRUCE CK	22/90	0.3	60	0.002		39	1.4	460	0.2	25	69	177000	-500	47500	4870	95	145	37	39.3	2.2	329	Medium fine qtz sandstone and dark green chloritic siltstone. Moderate siliceous, qtz veined.
274048	R/CHIP	384123	5373201	384130	5373200	BRUCE CK	22/90	-0.1	899	0.001		120	2.6	335	0.2	-5	32	178000	8950	18800	5260	190	23	12	54	4.3	166	Medium-fine volcaniclastic sandstone and siltstone. mod. siliceous, weakly sericitic.
274049	R/CHIP	384083	5373202	384095	5373200	BRUCE CK	22/90	0.1	9	-0.001		63	-0.1	270	0.5	12	31	150000	1000	20000	5600	140	33	9	17.4	3.1	362	Dark green fine grained sandstone and siltstone. Chloritic, hard, qtz veined. Hematite/goethite staining.
274050	R/CHIP	384071	5373196	384080	5373195	BRUCE CK	22/90	0.6	126	0.001		57	0.3	140	0.4	9	27	127000	1250	12500	4390	120	18	66	22.7	5	414	Dark green fine grained sandstone. Chloritic, strongly siliceous. Qtz veined. Hematite/goethite staining.
274051	R/CHIP	384167	5373195	384175	5373195	BRUCE CK	22/90	0.5	39	0.001	-1000	340	0.5	200	0.3	26	14	58500	40000	20500	1270	530	11	49	3.8	1.7	125	Strongly cleaved and kink folded volcaniclastic siltstone, c/c on riverbank.
274052	R/CHIP	383560	5372420	383560	5372420	BRUCE CK	22/90	0.3	42	0.007		405	0.8	360	1	31	19	96000	4550	2690	90000	200	-10	128	9.6	3.3	64	Strongly oxidised qtz hematite vein.
274053	R/CHIP	383333	5372847	383315	5372790	BRUCE CK	22/90	-0.1	1	0.001		570	-0.1	38000	-0.1	40	98	69500	12800	39000	3310	24000	33	-1	-0.5	-0.1	225	Green medium-fine grained chloritic felspar phytic calcic sample taken on bank of Bruce Ck.
274054	R/CHIP	383354	5372849	383330	5372800	BRUCE CK	22/90	0.4	11	0.003		595	-0.1	56500	0.6	33	106	73000	13000	26500	3370	24500	39	65	2.2	1.5	163	Fine green feldspar phytic intermediate volcanic-dacite, patchy chl alteration, some hornblende.
274055	R/CHIP	383350	5372961	383300	5372990	BRUCE CK	22/90	330	47000	1.82	1.68	195	942	910	28.5	223	7370	258000	8950	6150	1260	445	16	11200	70.4	152	1940	Strongly chloritic pyritic basalt/andesite. Strongly cleaved-fault zone. Py/Aspy to ~2% in veins, high sulphide content ~5%

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