# PASMINCO EXPLORATION

## HUSKISSON RIVER EL 1/93
## ANNUAL REPORT

FOR THE PERIOD
APRIL 1994 – APRIL 1995



AUTHOR: MS Saxon
PW Basford

DATE: April 1995

REPORT No.: T95–1

SUBMITTED TO: Regional Exploration Manager – Tasmania

DISTRIBUTION: Tasmania Development & Resources Industry Safety & Mines Division – Hobart

Pasminco Exploration – Burnie
– Melbourne
– Rosebery

SUBMITTED BY: Mark Saxon

ACCEPTED BY:

BURNIE
April 1995

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# 1 SUMMARY

Exploration on EL 1/93 has been divided into an eastern Mt Read Volcanic VHMS play and a western shale/carbonate hosted massive sulphide play in the Proterozoic Oonah Formation.

No exploration activity has been carried out on the Mt Read Volcanic area of EL 1/93 during the licence year.

Exploration within the Oonah Formation was limited to minor geological mapping and rock chip sampling, and interpretation of aeromagnetic and radiometric data, including modelling of the North Ross Creek magnetic anomaly.

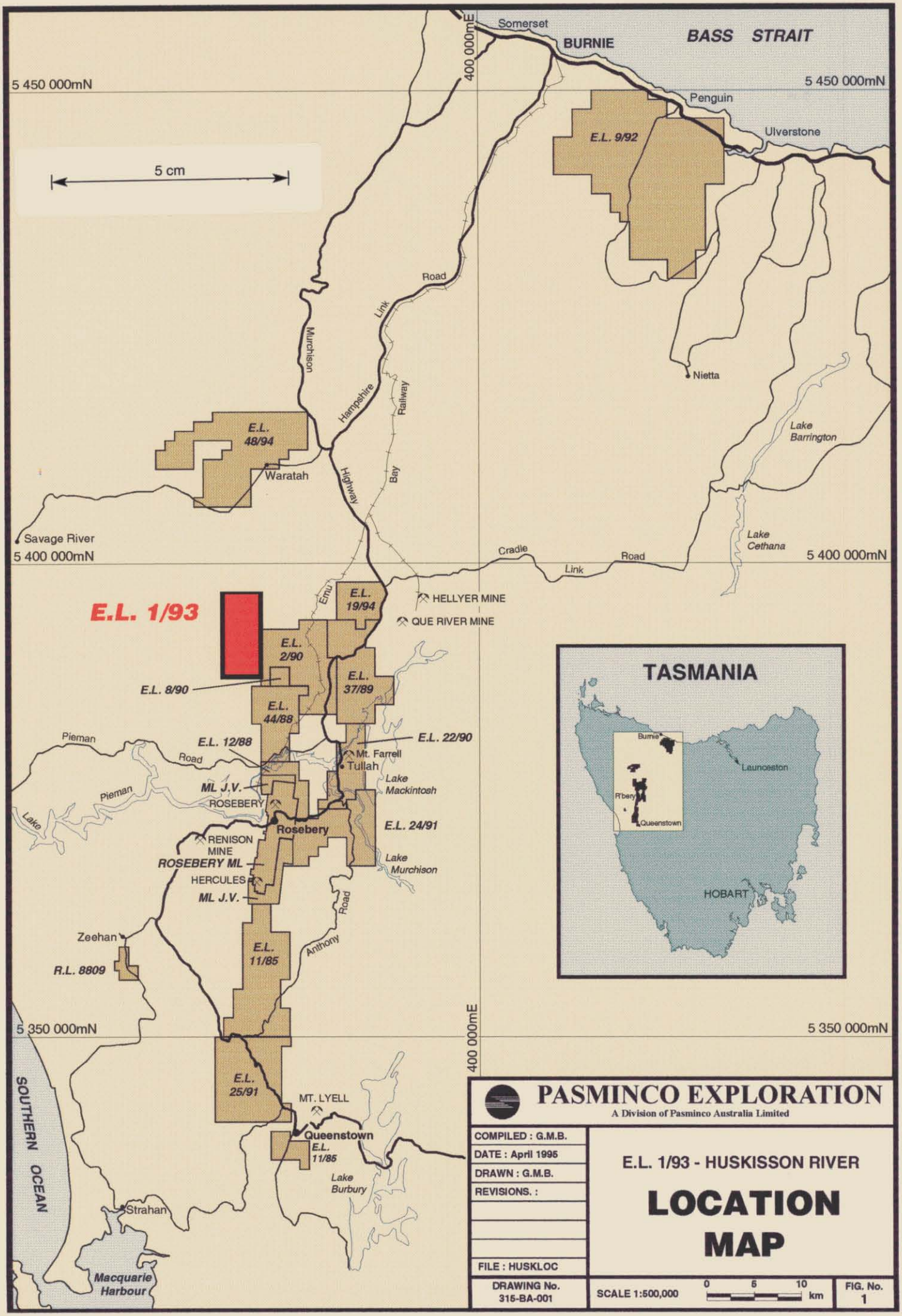
## 2 INTRODUCTION

This report documents work completed on the Pasminco Exploration Huskisson River EL 1/93 from May 1994 to April 1995. A recommended work program for the coming year is also documented.

Exploration on the Huskisson River EL is managed by Pasminco Exploration, a division of Pasminco Australia Ltd. The Huskisson River EL covers 36km$^2$, and lies 19km north-northwest of Rosebery, and includes the Silver Falls and Just in Time workings (figure 1) hosted by the Cambrian Mt Read Volcanics, and Precambrian Oonah Formation respectively. The eastern section of the tenement is accessed by a rough track that heads north from Boco Road, whilst the western section is approached via the Forestry track known as Huskisson Drive.

Work during the 94/95 year has been by M Saxon and P Basford. During this period activity has been limited to three days geological mapping and rock chip sampling, and interpretation of aeromagnetic and radiometric data, including modelling of the North Ross Creek magnetic anomaly.

804006




**PASMINCO EXPLORATION**
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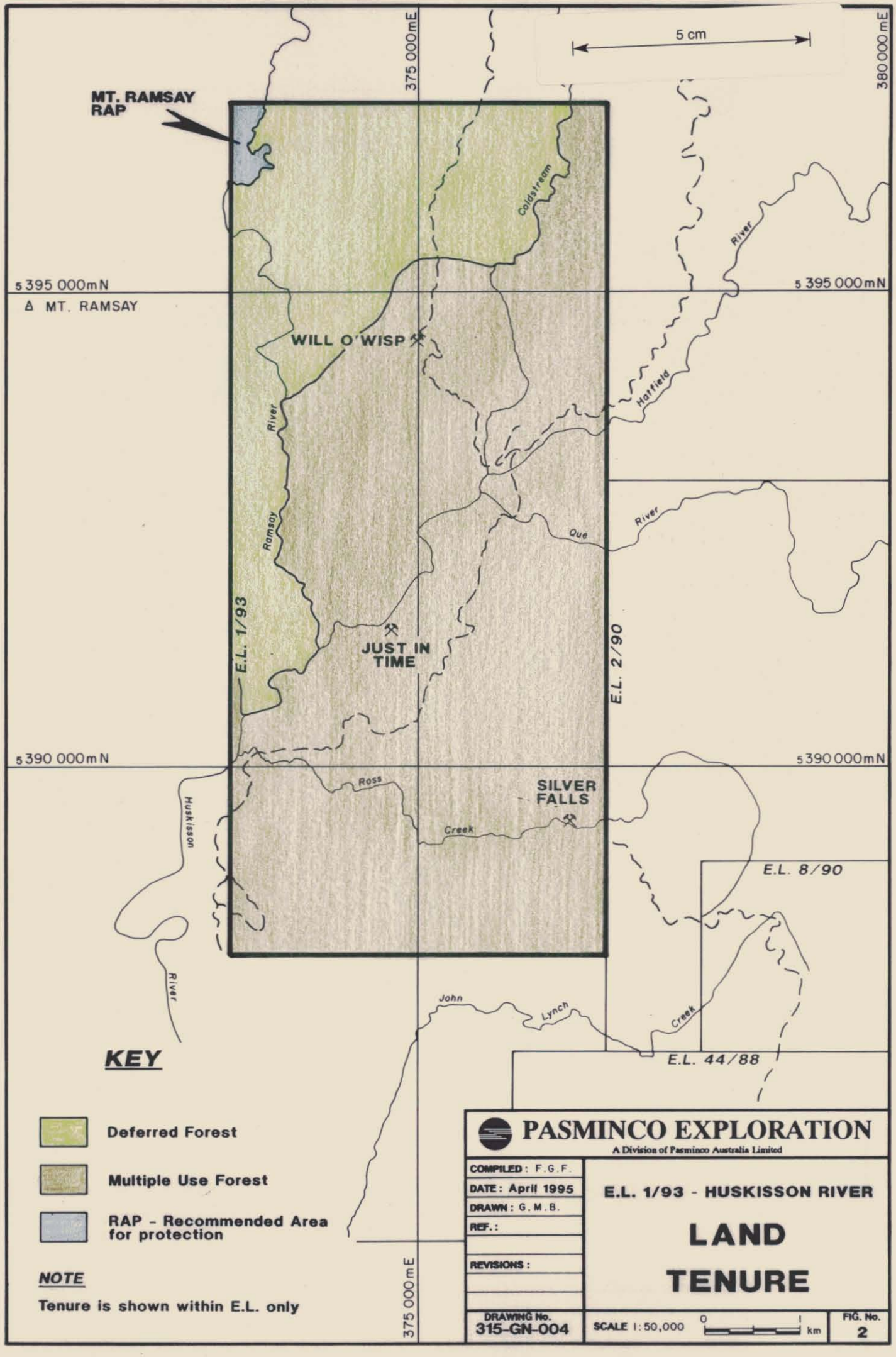
| | |
|---|---|
| COMPILED : G.M.B. | E.L. 1/93 - HUSKISSON RIVER |
| DATE : April 1995 | **LOCATION MAP** |
| DRAWN : G.M.B. | |
| REVISIONS. : | |
| FILE : HUSKLOC | |
| DRAWING No. 315-BA-001 | SCALE 1:500,000 (0 5 10 km) |
| | FIG. No. 1 |

## 3 TENURE

The Huskisson River EL 1/93 was granted to Pasminco Australia Ltd (Pasminco) on 21st May, 1993, covering 36km$^2$ (figure 2). Renewal of this tenement area is now being sought for a further twelve months.

The EL is subject to a number of land classifications. The tenure includes Deferred Forest Land, Multiple Use Forest Land and a small section of Mt Ramsay Recommended Area for Protection (figure 2).


5 cm
375 000mE
380 000mE
MT. RAMSAY RAP
5 395 000mN
MT. RAMSAY
WILL O'WISP
JUST IN TIME
SILVER FALLS
Coldstream
River
Hatfield
River
Ramsay
Que
River
E.L. 1/93
E.L. 2/90
E.L. 8/90
E.L. 44/88
5 390 000mN
Ross
Creek
Huskisson
River
John
Lynch
Creek
KEY
Deferred Forest
Multiple Use Forest
RAP - Recommended Area for protection
NOTE
Tenure is shown within E.L. only
PASMINCO EXPLORATION
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COMPILED: F.G.F.
DATE: April 1995
DRAWN: G.M.B.
REF.:
REVISIONS:
E.L. 1/93 - HUSKISSON RIVER
LAND TENURE
DRAWING No. 315-GN-004
SCALE 1:50,000
0 1 km
FIG. No. 2

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# 4 REGIONAL GEOLOGY

EL1/93 straddles the western flank of the Dundas trough in western Tasmania. Two sequences prospective for base metals occur, Proterozoic shales and carbonates and mid to late Cambrian Mt Read Volcanics.

Basement in western Tasmania is Precambrian age, comprising predominantly greenschist facies metasediments with minor basalts and dolerites. Higher grade amphibolite and eclogite facies are also present within the Precambrian (Burrett and Martin, 1989). This Precambrian basement is exposed in the western part of the Huskisson River licence (figure 3).

Cambrian volcanism and sedimentation developed on this continental crust, and can be subdivided into the Eo-Cambrian tholeiitic Crimson Creek Formation (CCF) and the mid to late Cambrian Dundas Group and predominantly calc-alkaline Mt Read Volcanics (MRV).

The CCF was deposited in shallow but rapidly subsiding basins (Brown, 1986 and Haines, 1991). The CCF consists of basaltic lavas and volcaniclastics, hematite facies turbidites, carbonates, chert and minor evaporites. The formation is exposed immediately west of the licence.

Ultramafic cumulates and volcanic equivalents were thrust onto the CCF in the mid Cambrian (Crawford and Berry 1991). These rocks generate strong magnetic anomalies and outcrop within the Huskisson Syncline, to the west of the licence (figure 3). The ultramafics are interpreted at depth between North Pinnacles and Silver Falls by Leaman (1993).

A package of sediments which post dates the ultramafics and possibly predates the MRV occurs in the eastern sector of the licence and footwall to the Rosebery Fault. These carbonate siltstones, wackes and polymict conglomerates are correlated with the Westcott Argillite/Salisbury Conglomerate

in the Rosebery area and are considered to form the basal units of the Dundas Group. Gradationally overlying this sequence are quartz muscovite sandstone and conglomerate largely derived from Precambrian metasediments, but with some material from felsic volcanics and ultramafics. The sequence is correlated with the Stitt Quartzite at Rosebery.

The MRV form a 200km long by 20km wide north-south trending belt along the eastern side of the Dundas Trough, adjacent to and in some areas onlapping and intruding the Precambrian basement. The volcanics include intermediate to felsic lavas, subvolcanic porphyries and granites, volcaniclastics and basement-derived sedimentary rocks. The MRV host five economically significant volcanic hosted massive sulphide deposits.

In EL 1/93 equivalents of the MRV are restricted to a narrow strip between the Rosebery Fault and the licence boundary with EL 2/90. At this locality, the MRV comprise pumiceous volcanics, quartz feldspar crystal sandstone and shales.

Regional structures associated with the MRV are the Rosebery Fault, splays of which extend into the Silver Falls area, and Henty Fault which is located 15km east of the licence.

Cambrian volcanism and sedimentation was followed by predominantly basement derived late Cambrian to Devonian age sedimentation, which includes siliciclastic conglomerate, sandstone and limestone. None of these sequences occur within the licence.

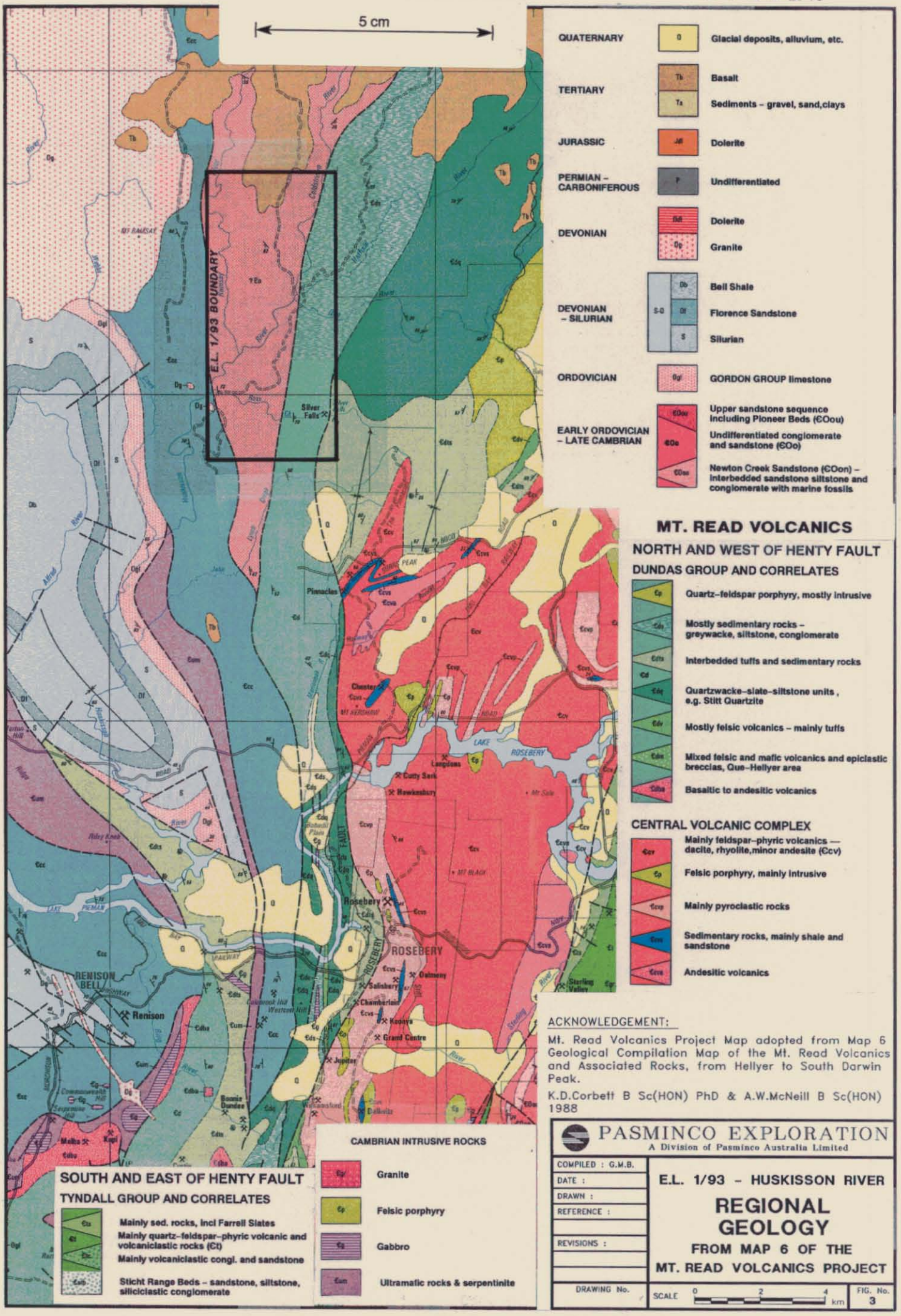
At least two phases of regional compression were associated with the mid Devonian Tabberabberan Orogeny (Keele, 1991). The development of folding, cleavage and regional thrusts in lower Palaeozoic rocks were associated with this event. Fold trends in the licences are N to NNE.

Deformation was followed by the extensive intrusion of Devonian to Carboniferous granitoids. The Meredith Granite and it's hornfels aureole outcrop in the western part of EL 1/93 (Brown, 1986). The Meredith Granite dominates the regional gravity feature in the licence area (Leaman and Richardson 1989).

The Devonian granites are associated with carbonate replacement tin mineralisation at Renison Bell and Mount Bischoff, and the Pb Zn Ag vein deposits of Zeehan and possibly the Tullah Fields.

After substantial erosion of this terrane extensive Tertiary flood basalts and sub-volcanic sediments were deposited. Remnants of the basalt flows are preserved between the Ramsay and Coldstream Rivers in the north of the licence.

804012





ACKNOWLEDGEMENT:

Mt. Read Volcanics Project Map adopted from Map 6 Geological Compilation Map of the Mt. Read Volcanics and Associated Rocks, from Hellyer to South Darwin Peak.

K.D.Corbett B Sc(HON) PhD & A.W.McNeill B Sc(HON) 1988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| | |
|---|---|
| COMPILED : G.M.B. | E.L. 1/93 – HUSKISSON RIVER |
| DATE : | REGIONAL GEOLOGY |
| DRAWN : | FROM MAP 6 OF THE |
| REFERENCE : | MT. READ VOLCANICS PROJECT |
| REVISIONS : | |
| DRAWING No. | SCALE 0 2 4 km — FIG. No. 3 |

# 5 MT READ VOLCANIC EXPLORATION

## 5.1 Previous Exploration

Galena, sphalerite and carbonate veins exposed at Silver Falls in Ross Creek were prospected with shallow pits and gouges at the turn of the century.

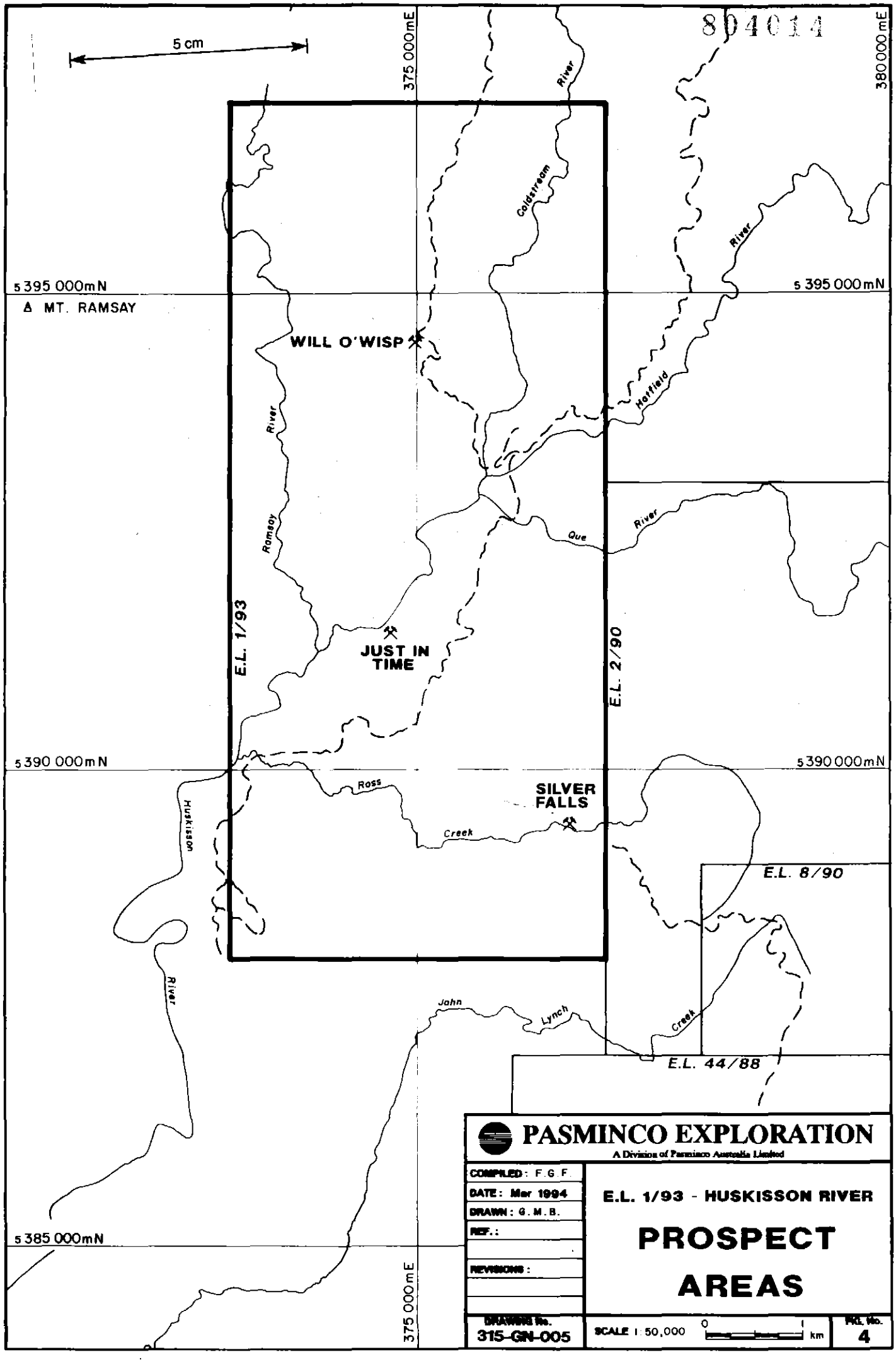
The Silver Falls mineralisation was tested by 4 small diameter (18mm) diamond drill holes ranging from 22–50m depth by EZ in 1949. Only a negligible amount of the core was assayed and the current state of the core renders it next to useless.

Aberfoyle Exploration Pty Ltd evaluated the Silver Falls prospect as part of their exploration of EL 22/74 Marionoak. Work included gridding, soil geochemistry, IP and geological mapping, the work is reported by Taylor 1979. Pasminco's 1994 diamond drill hole HRD1 was targeted at Pb Zn soil anomalies generated by Aberfoyle.

EZ explored the northern strike extent of the Silver Falls host sequence, the prospect being located on the boundary between their Bulgobac licence 12/72 and Aberfoyle's EL 22/74. EZ's work included gridding, soil/rock geochemistry, IP, mapping and costeaning; their target Pb Zn and Au. Work was spread over a period from 1980 to 1984 and was reported by Mollison (1980) and Sainty (1984).

Grid based exploration by Pasminco in EL 2/90 extended west of the licence boundary to cover the Silver Falls trend. This work was reported in Poltock (1993). Exploration activity completed by Pasminco Exploration on EL 1/93 is summarised in Poltock and Saxon (1994), and includes mapping and rock chip sampling in the area of Silver Falls, B/C horizon soil sampling of the Silver Falls grid, and drilling of diamond hole HRD1.

No further activity has been carried out on the Mt Read Volcanic area of EL 1/93 during the licence year.


804014
5 cm
375 000mE
380000 mE
River
Coldstream
River
s 395 000mN
s 395 000mN
Δ MT. RAMSAY
WILL O'WISP
River
Ramsay
Hatfield
Que
River
E.L. 1/93
JUST IN TIME
E.L. 2/90
s 390 000mN
s 390 000mN
Huskisson
Ross
Creek
SILVER FALLS
E.L. 8/90
River
John
Lynch
Creek
E.L. 44/88
s 385 000mN
375 000mE
PASMINCO EXPLORATION
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COMPILED : F.G.F.
DATE : Mar 1994
DRAWN : G.M.B.
REF. :
REVISIONS :
E.L. 1/93 - HUSKISSON RIVER
PROSPECT AREAS
DRAWING No.
315-GN-005
SCALE 1:50,000
0
1
km
FIG. No.
4

# 6 OONAH FORMATION EXPLORATION

## 6.1 Previous Exploration

Modern exploration within the area now covered by EL 1/93 was initiated by Comstaff in 1969, being included within Part 2 of Comstaff EL 5/63. Exploration in the Coldstream–Huskisson–Ramsay area targeted asbestos, Ni, Sn, Au, and base metals in a range of geological environments. The original phase of work consisted of stream sediment sampling and reconnaissance mapping as part of a regional program.

Drainage sampling from 1969 to 1972 defined a number of lead dominated anomalies over Precambrian sediments (R1–10, C1–4). The Will O' Wisp project area was defined in March 1972 encompassing a number of these anomalous streams (figure 4). Geological mapping in the area highlighted two gossanous–limonitic trends, upon which a small imperial grid was established (CMT) and soil sampled. Results of soil sampling on this grid resulted in extension of the grid (renamed WOW), and the construction of a road from Waratah.

During the summer of 1972/73, field activity concentrated on the WOW grid, and included test surveys of self–potential, ground magnetics, and Crone EM, each of which defined ambiguous anomalies. Diamond drilling occurred from January to March 1973, during which time six holes were drilled (CR1–6) for a total of 1060m. All holes were targeted on the basis of surface geochemistry and geology.

Drilling results were disappointing, all holes intersected a dolostone–black shale sequence, that displayed no significant post–diagenetic alteration. Visible mineralisation was sparse, and the holes were sampled over short intervals only. Core loss was locally very high (eg CR2, 38ft–547ft, loss of 52%).

An INPUT EM survey was flown by Comstaff in 1975, which highlighted an anomaly adjacent to the WOW grid that was named CAB. As a result, the area was regridded on a metric basis (CAB grid), with the purpose of ground checking the INPUT anomaly and the WOW geochemistry. A, soil sampling, ground EM and ground magnetics were completed, and failed to locate the source of the CAB anomaly. This phase of exploration activity was poorly documented.

Comstaff recommenced exploration in the area in 1983, when relogging and reassaying of the CR1–6 drill holes highlighted extensive Pb–Zn anomalism in black shales. Results peaked in CR1 at 0.57% Zn and 0.19% Pb over approximately 4.0m, seemingly from a black sericitic siltstone horizon interbedded with dolostone. Work extended into 1984, when the CAB grid was restored and extended to the southwest and resampled by auger. The strongest auger anomalies for Pb, Zn and Cu correlate to a high degree, trending approximately north–south in the eastern portion of the grid area. This anomaly parallels the interpreted trend of the silica replaced dolostone horizon of Unit C, in part correlating with the dolostone, and in part correlating with clastic sequences along the dolostone margin. Limonitic soil associated with ironstone is inferred to be a strong control on anomalism. This anomaly has been fully drill tested. A further north–south elongate Cu anomaly is present 100–200m to the west of the dominant anomaly within Unit D. Additional base metal anomalies are more diffuse and lie in the southwest of the grided area. This anomalism approximates the position of a mapped basalt outlier, however it is worthy of note that where basalt was sampled in the far north of the CAB grid, a similar soil anomaly did not result.

The CAB grid was covered by GENIE EM during 1983, this phase of EM providing conductors at the CAB anomaly, as well as other weak effects in the area of prior drilling. The CAB anomaly was correlated with conductive shales exposed in a nearby track.

No targets were identified in the 1983/84 review of the Will O' Wisp area, however the trend was considered to be prospective, resulting in the 1984/85 season being focussed to the south on the circa-1915 Just-in-Time workings. The workings were cleared and further costeans dug to reveal a vertical quartz-barite-galena vein in steeply dipping shales and dolostones. Chip samples from the host rock were highly anomalous with respect to Pb. An ENE trending grid was constructed and auger sampled at 20m intervals for approximately 400m either side of the JIT vein. Pb results delineate the vein trend to the south of the trench exposure, however the disruption of soil related to trench excavation precludes a determination of an increase or decrease in anomaly strength in this direction. Isolated anomalous Pb-Ba results imply barite-galena veining is developed sporadically elsewhere within the grid area. Zn anomalism does not reflect the Pb-Ba trend, instead being strongly anomalous (5 to 10 times background) in the northwestern corner of the grid. The presence of the Huskisson River alluvial plain may prevent extension of soil sampling in this direction.

Work completed on the CAB grid during the 1984/85 season included a repeat of GENIE EM on anomalous lines, IP, extension of the grid to the north, and subsequent auger sampling of this grid extension. Minor stream sediment sampling was also undertaken. Mid-1985 marked compulsory partial relinquishment of Comstaff EL 5/63, Part 2, however the area that covered both Will O' Wisp and Just-in-Time prospects was retained.

EL 5/63 was offered for joint venture by Comstaff in late 1985, resulting in BHP farming in and managing exploration. Part 2 of the EL was reviewed by BHP, but no exploration was undertaken. The tenement was relinquished in full in June 1988.

RGC acquired EL's 12/90 and 15/90 during 1990, covering the current exploration area. The areas overlapping with EL 1/93 were relinquished in mid 1992 due to budget constraints. Although the relevant reports have not been reviewed, work appears minimal, and was focussed on Sn targets proximal to the Meredith Granite.

## 6.2 Work Completed April 1994–April 1995

### 6.2.1 INTERPRETATION OF AEROMAGNETIC AND RADIOMETRIC DATA

High resolution aeromagnetic and radiometric data collected during 1993 was processed in–house by Pasminco, and interpreted during the licence year. Gridding was performed using a cell size of 25m and exported from ERMapper to Terrascan. Data is fully reported in Poltock and Saxon (1994), and imaged and interpreted data presented in figure 5.

Magnetic data shows five distinct regions. The first region is the highly magnetic zone on the western edge of the licence, related to sub–cropping CCF. A second intensely magnetic zone is located in central north of the survey area, which can be related to mapped Tertiary basalt. The extent of the basalt can be defined by the marked gradient change in the magnetics. It is possible to see erosion of basalt into streams when overlaying the magnetic image with topography.

A mapped fault separating moderately magnetic Cambrian Dundas Group from weakly magnetic Precambrian Oonah Formation is discernible from the magnetic image. The fault swings from north–south to northeast–southwest trending at the northern end of the survey area. The Oonah Formation is magnetically quiet, with no indication of known prospects (Will O' Wisp, Just in Time).

The fifth magnetic 'zone' is two bullseye magnetic anomalies abutting and lying immediately east of the Dundas Group/Oonah Formation fault in the southeast quadrant of the tenement (AMG coordinates 375400E, 5390270N). This anomaly pair is herein referred to as the North Ross Creek anomaly.

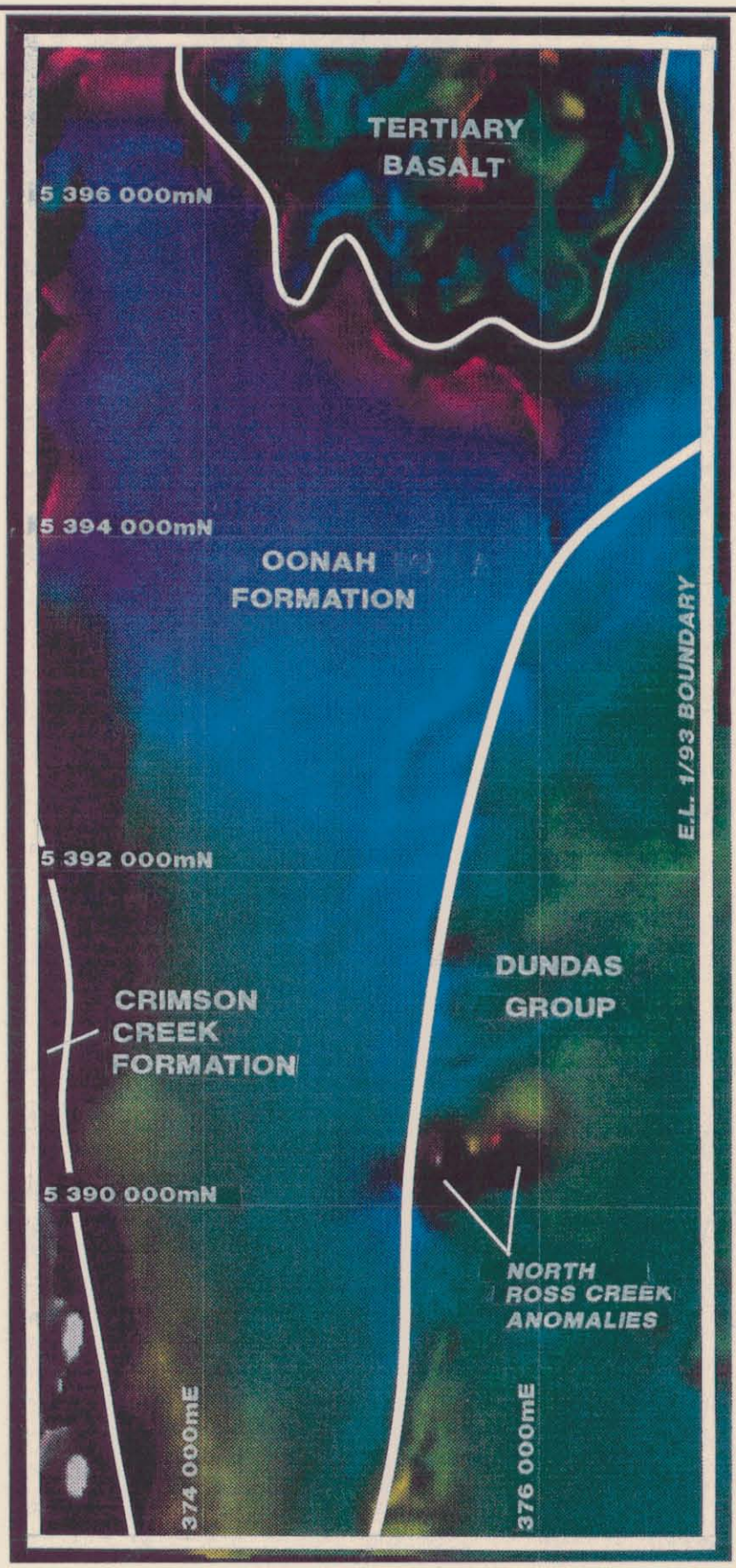
The North Ross Creek anomaly is indicated on six lines, inferring a strike length in the order of 400 to 500m. Altimeter data was analysed to determine if altitude variance potentially generated the magnetic anomalies. Profiles indicate that there is no relationship between altitude changes and the magnetic features, as altitude changes are independent of the consistently strong magnetic anomaly.

The western anomaly has a maximum amplitude of 200nT and lies directly on the eastern edge of the fault. Modelling of the aeromagnetic data was conducted on POTENT. Both a rectangular prism and cylindrical source were modelled. Close matches to the observed data were achieved for a body dipping 35° to 45° east, of size 150m wide, 400m in strike length and 500m in depth extent, buried 35m from the surface (figures 6–10). The susceptibility used in modelling is typical for a source rich in magnetite or pyrrhotite (with or without remanence). This modelled dip is consistent with a body dipping parallel to either the Dundas Group/Oonah Formation fault, or the sedimentary sequence east of the fault.

The low to the west of the magnetic high was not as well matched by models as the high amplitude portion of the anomaly. This may be inferring the presence of remanence which has not been included in models. It is also apparent that the body may change width and depth slightly along strike (possibly thinning to the north?).

Depth to the source of the eastern anomaly has not been determined due to interference of the west anomaly response.

Background values for both anomalies have been confused by the background level being greater to the east than the west of the fault, and by the gradient produced by the strong CCF response. This steep gradient may also have an affect on the size and shape of the low on the southwest side of the North Ross Creek feature. Both of these affects cause problems when modelling.

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5 cm

**PASMINCO EXPLORATION**
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| | |
|---|---|
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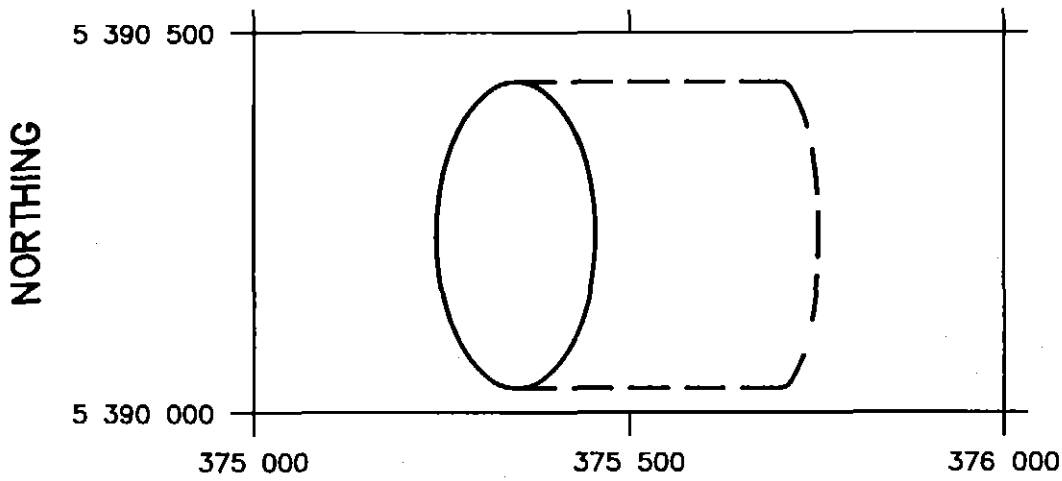
| DATE : April 1995 | **IMAGED AND INTERPRETED AEROMAGNETIC DATA** |
| DRAWN : G.M.B. | |
| REVISIONS : | |
| FILE : | |
| DRAWING No. 315-GP-037 | SCALE 1:40,000 0 1 km |
| | FIG. No. 5 |

804021

## PLAN VIEW

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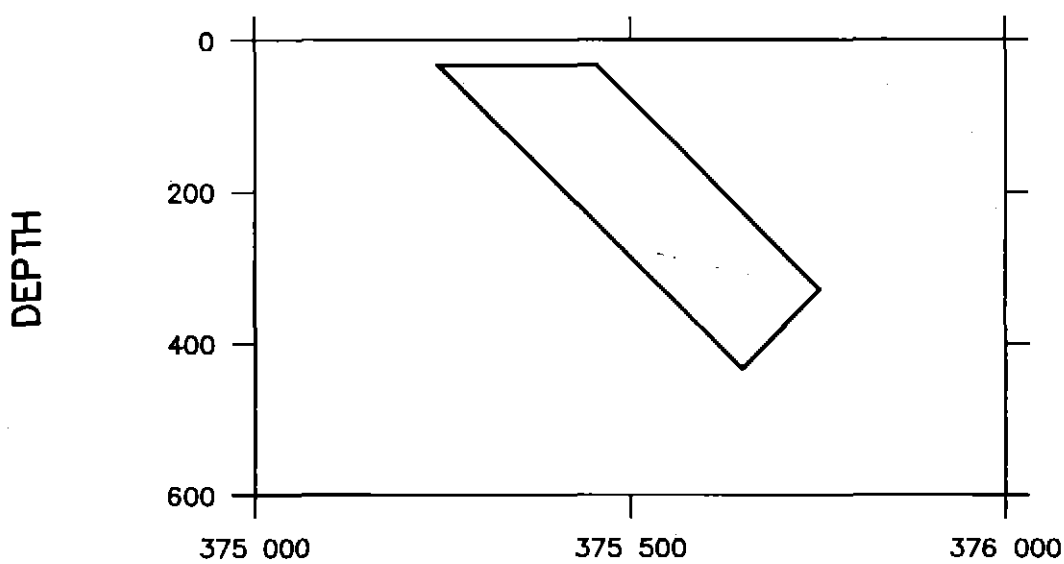


5 cm

PASMINCO EXPLORATION
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|---|---|
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| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **MODELLED SOURCE** |
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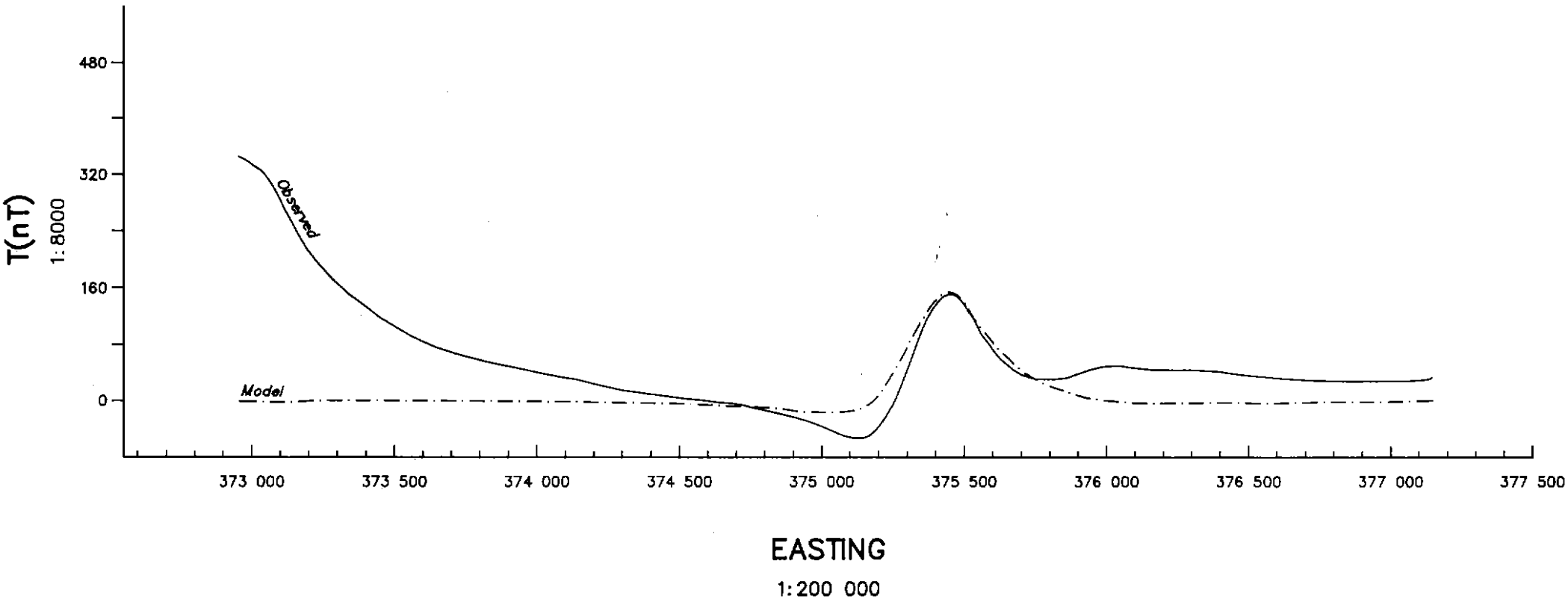
| | FIG. No. 6 |

804022

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**PASMINCO EXPLORATION**
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| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **AEROMAGNETIC DATA** |
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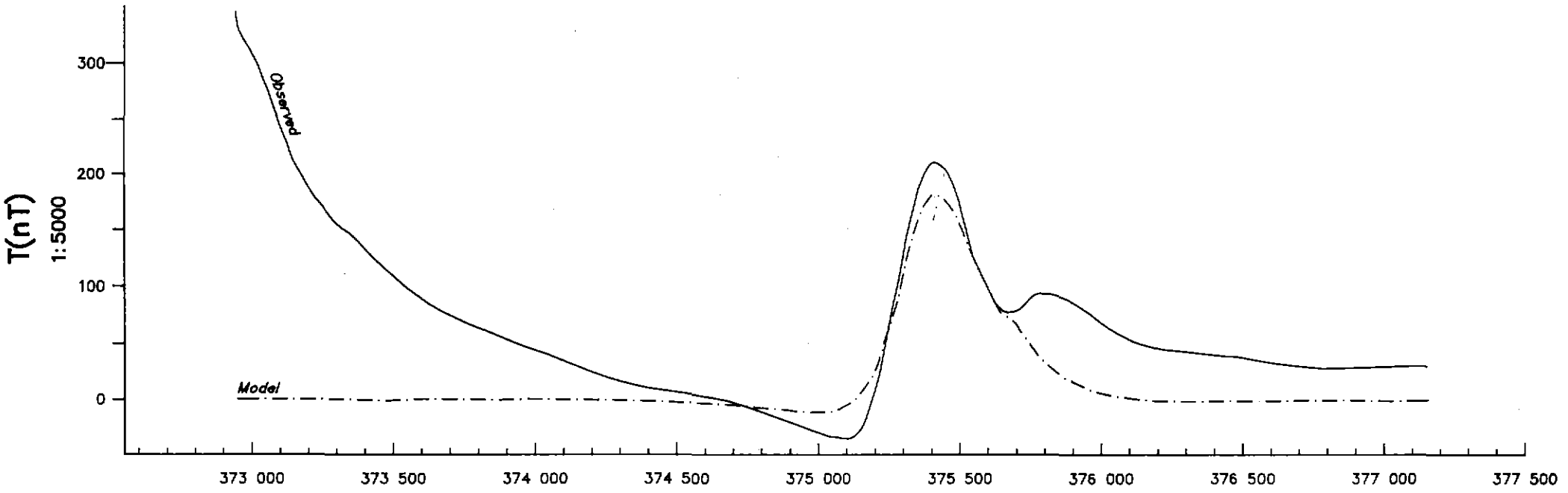
| | FIG. No. 7 |

804023

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| COMPILED : P.W.B. | E.L. 1/93 – HUSKISSON RIVER |
| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **AEROMAGNETIC DATA** |
| REVISIONS : | **LINE 12241** |
| FILE : HAD12241 | |
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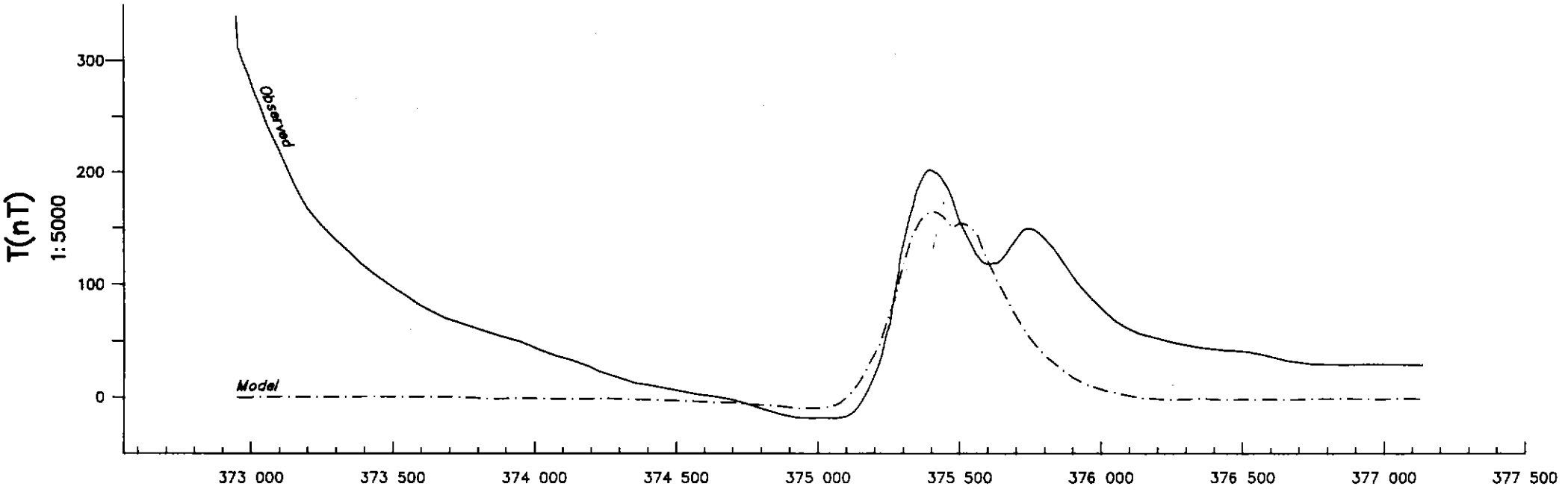
| | FIG. No. 8 |

804024

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| COMPILED : P.W.B. | E.L. 1/93 – HUSKISSON RIVER |
| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **AEROMAGNETIC DATA** |
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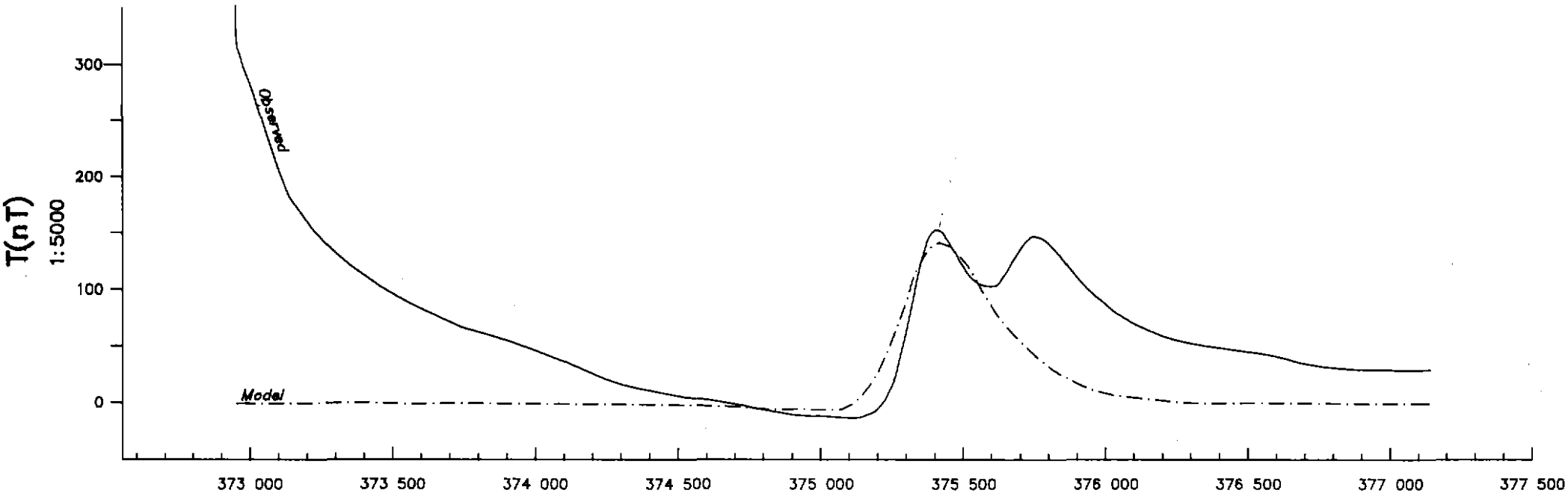
| | FIG. No. 9 |

804025

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|---|---|
| COMPILED : P.W.B. | E.L. 1/93 – HUSKISSON RIVER |
| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **AEROMAGNETIC DATA** |
| REVISIONS : | **LINE 12261** |
| FILE : HAD12261 | |
| DRAWING No. 315-GP-036 | SCALE As shown |
| | FIG. No. 10 |

Although the North Ross Creek anomaly is located near the intersection of several creeks, there is no evidence to infer the cause to be erosion and accumulation of some distal magnetic source. A grading magnetic 'tail' (weakening strength anomaly) is not observed along the creeks away from the anomaly, implying no surface expression.

Radiometric data revealed a large potassium low, coincident with the magnetic high over the basalt. This low is rimmed by a potassium high, outlining the boundary of the Tertiary basalt. A potassium anomaly coincides with the magnetic gradient marking the Dundas Group/Oonah Formation fault, and also demonstrates a northeast swing in the fault at its north end. The CCF does not have any characteristic potassium response.

There does not appear to be any association between the North Ross Creek anomalies and the radiometric data. The western magnetic anomaly may be coincident with a relative potassium low, however, the detail in the data and the presence of the fault do not allow confirmation.

The North Ross Creek anomaly lies southeast of the Meredith Granite. Gravity and magnetic modelling of the granite by Leaman and Richardson (1989) infer the granite to be at a depth of 4–6km in this region, however structural complexity and the possibility of granite spines is noted. Department of Mines mapping (Brown, 1983) show small granite outcrops 2km to the west of the North Ross Creek anomaly, and a hornfels aureole that extends from the Meredith Granite towards the anomaly, indicating that depth to granite may be significantly less than modelling suggests.

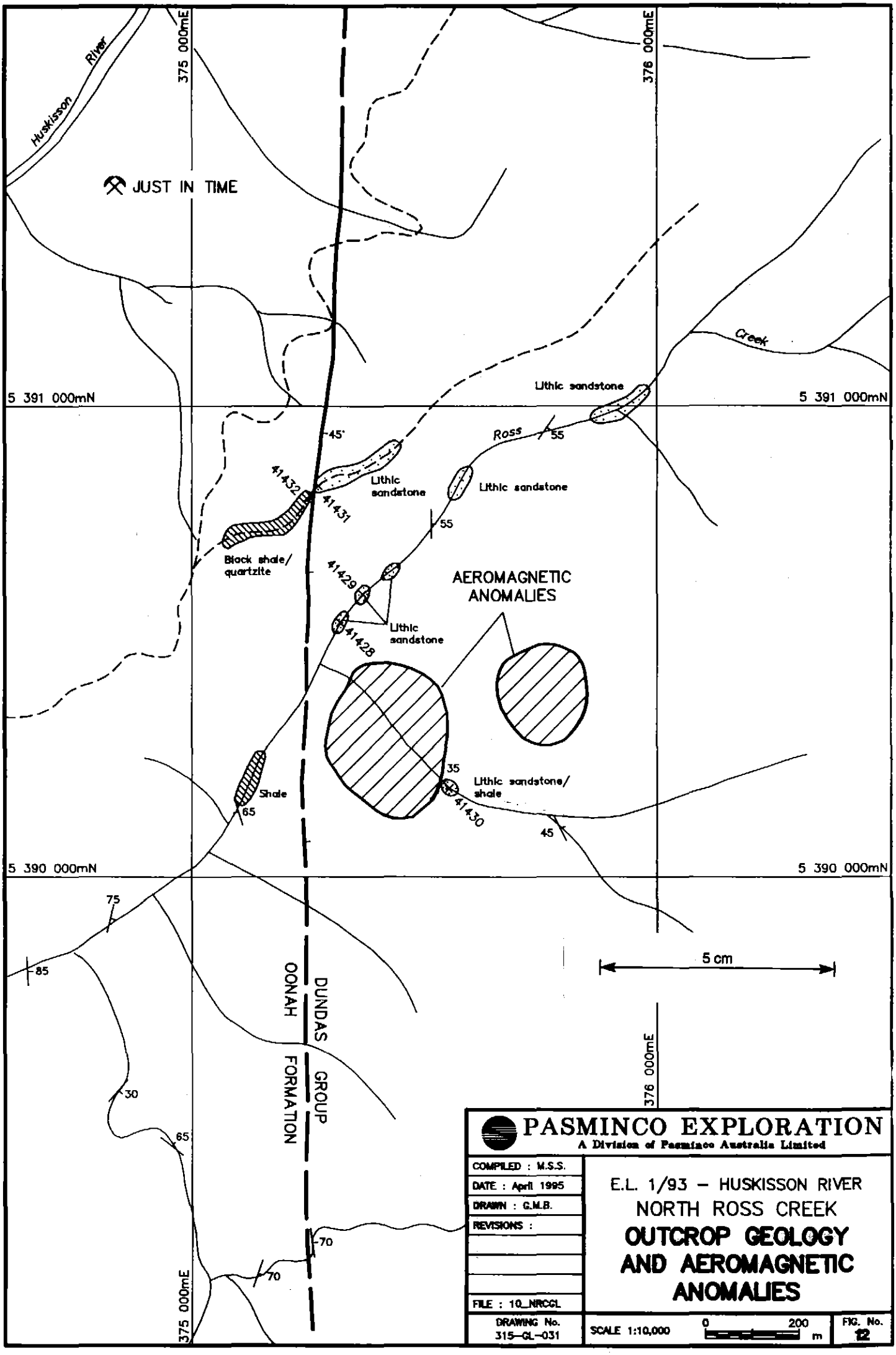
### 6.2.2 GEOLOGICAL MAPPING AND ROCK CHIP SAMPLING

Two days mapping were completed in the Will O' Wisp area, and one day in the region of the North Ross Creek anomaly.

Mapping in the Will O' Wisp area was limited to existing tracks. Ground checking of coincident auger and EM (A, B) anomalies was completed without significant encouragement (figure 11). Anomalism is associated with limonitic soil overlying black carbonaceous siltstone and shale.

Mapping and rock chip sampling of creeks in the area of the North Ross Creek magnetic anomaly was completed to check surface expression. Results of mapping are summarised in figure 12. Outcrop in the vicinity of the anomaly is poor, and no feature to explain magnetic anomalism was located.

The Dundas Group/Oonah Formation fault was located in the cutting of a logging track 600m to the north of the North Ross Creek magnetic anomaly, where it is north–south striking and dips 50° to the east.

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| | |
|---|---|
| COMPILED : M.S.S. | E.L. 1/93 – HUSKISSON RIVER |
| DATE : April 1995 | NORTH ROSS CREEK |
| DRAWN : G.M.B. | **OUTCROP GEOLOGY AND AEROMAGNETIC ANOMALIES** |
| REVISIONS : | |
| FILE : 10_NRCGL | |
| DRAWING No. 315–GL–031 | SCALE 1:10,000 (0 – 200 m) |
| | FIG. No. 12 |

## 7 ENVIRONMENTAL DISTURBANCE AND REHABILITATION

Exploration in the western sector of the tenement has been of a reconnaissance nature, utilising existing forestry and past exploration tracks for access. There has been no new disturbance of vegetation in this area.

## 8 EXPENDITURE SUMMARY 1994-95

The total expenditure on EL 1/93 during the second year of tenure to 31 March 1995 is $17 977. A detailed breakdown of this expenditure is presented in the statement below.

| | |
|---|---|
| Personnel: salaries, wages & on-costs | 5 983 |
| Travel & Accommodation | 248 |
| Geological Contractors | 3 785 |
| Analytical Costs | 1 597 |
| Geophysical Surveys & Consultants | 905 |
| Other Consultants | 994 |
| Drilling: including contractor, access & core storage | 14 |
| Stores & Supplies | 179 |
| Vehicles Plant & Equipment | 712 |
| Tenement Costs | 235 |
| Computing | 471 |
| Office Running Costs | 1 220 |
| Administration | 1 634 |
| **Total** | **17 977** |

# 9 CONCLUSIONS AND RECOMMENDATIONS

Review of Huskisson River EL 1/93 has indicated that potential for base metal mineralisation of Precambrian age is low, due largely to the limited exposure of Precambrian bedrock within the tenement (11km$^2$). This greatly hinders the capacity to trace a mineralised stratigraphic position to an economic orebody. The Oonah Formation does not warrant further activity in its own right. Exploration during the previous licence year downgraded the prospectivity of the Silver Falls trend, and again no further work is recommended in this area.

The North Ross Creek anomaly remains unexplained, and should be the focus of any further work on EL 1/93. Proximity to the Meredith Granite and the magnetite or pyrrhotite association makes the prospect a likely Sn/W exploration play, however a lack of further data makes this difficult to assess.

It is recommended that a grid be established over the North Ross Creek anomaly, upon which a ground magnetic survey be conducted to properly locate the anomalies. A small auger sampling program should be completed across the anomaly, and potentially an electrical geophysical survey to aid in characterisation of the anomaly source. Favourable results should be tested with a short diamond drill hole, possibly requiring helicopter support.

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## 11 KEYWORDS AND LOCALITY

HUSKISSON, SILVER FALLS, WILL O' WISP, JUST IN TIME, MT READ VOLCANICS, OONAH FORMATION, VHMS, WHITE SPUR FORMATION, PUMICE BRECCIA, ROSEBERY FAULT, STITT QUARTZITE, WESTCOTT ARGILLITE, GALENA SPHALERITE, GEOPHYSICS, MAGNETICS, MODELLING.

PARSONS & RAMSAY 1:25 000.

# APPENDIX I

## Analytical Reports – Rock Chip Samples

| SAMP. NO. | NORTHING | EASTING | Cu | Pb | Zn | Ag | Mn | Au |
|---|---|---|---|---|---|---|---|---|
| 36113 | 5394470 | 374835 | 49 | 39 | 121 | 1 | 286 | - |
| 36114 | 5394380 | 374810 | 90 | 97 | 93 | 1 | 105 | - |
| 36115 | 5394355 | 374835 | 11 | 28 | 107 | 1 | 617 | - |
| 36116 | 5394275 | 374770 | 26 | 50 | 76 | 1 | 755 | - |
| 36117 | 5394275 | 374590 | 11 | 5 | 13 | <1 | 45 | - |
| 36118 | 5394240 | 374310 | 48 | 501 | 27 | 4 | 71 | - |
| 41428 | 5390540 | 375320 | assay results not available | | | | | |
| 41429 | 5390600 | 375375 | assay results not available | | | | | |
| 41430 | 5390210 | 375535 | assay results not available | | | | | |
| 41431 | 5390840 | 375270 | assay results not available | | | | | |
| 41432 | 5390840 | 375270 | assay results not available | | | | | |

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# LEGEND

- Qa — Quaternary alluvium deposits
- Qfgl — Quaternary glacial deposits
- Tb — Tertiary basalt
- Ecf — Crimson Creek Formation

*1. GENERAL FORM*

**Rock type, colour, grain size,** overall texture, **constituents & textutres,** alteration, mineralisation.

Rock Types can be combined using a –
Subordinate Rock Types are separated by /
Each Descriptor Group is separated by ,
Descriptors within a group are separated by .
Derwent series 19 colours (in brackets) are intended for the Cambrian sequences.

*2. ROCK TYPES*

| | | | |
|---|---|---|---|
| Lavas Intrusives or Volcaniclastics | L I V | a | (14) acid |
| | | i | (46) intermediate |
| | | b | (49) basic |
| | | u | (23) ultrabasic |
| | | r | rhyolite |
| | | d | (11) dacite |
| | | n | (46) andesite |
| | | ba | (49) basalt |
| | | g | (20) granite |
| | | di | (22) diorite |
| | | do | (45) dolerite |
| | | gb | (25) gabbro |
| | | s | (23) serpentinite |
| Sediments or Volcaniclastics | S V | bsh | (35) black shale |
| | | sh | (36) shale |
| | | slt | (35) siltstone |
| | | sst | (39) sandstone |
| | | w | (37) greywacke |
| | | cong | (39) conglomerate |
| | | bx | breccia |
| | | tbd | turbidite |
| | | msf | mass flow |
| | | cht | (34) chert |
| | | lst | (65) limestone |
| | | dol | (65) dolomite |
| | | Fe | (64) iron formation |
| | | gl | (4) glacial deposits |
| | | fgl | (4) fluvioglacial deposits |
| | | alv | (4) alluvial deposits |
| | | cvl | (4) colluvial deposits (talus) |
| | | qzt | quartzite |
| Metamorphic and Tectonic Rocks | M | sht | (38) schist |
| | | qzt | (40) quartzite |
| | | hf | (50) hornfels |
| Colours should be hatched | | sk | (50) skarn |
| | | mb | (48) marble |
| | | m | mylonite |
| | | fz | fault breccia (pug) |
| Unassigned | | ? | Use alone or as a qualifier to other rock types where uncertain |

*3. DESCRIPTORS*

Colour:

| | | | |
|---|---|---|---|
| ple | pale | bl | blue |
| dk | dark | wht | white |
| gy | grey | yel | yellow |
| or | orange | buf | buff |
| blk | black | grn | green |
| pk | pink | ppl | purple |
| rd | red | crm | cream |
| brn | brown | khk | khaki |

Grainsize:

| | |
|---|---|
| fg | fine grained |
| mg | medium grained |
| cg | coarse grained |
| vcg | very coarse grained |

*DESCRIPTORS continued*

Overall Texture:

| | |
|---|---|
| fb | flow banded |
| fbx | flow brecciated |
| hyk | hyaloclastic |
| pill | pillowed |
| pep | peperitic |
| mav | massive |
| blo | blocky |
| aph | aphyric |
| por | porphyric |
| peg | pegmatitic |
| bd | bedded |
| xbd | cross bedded |
| ufs | upwards fining sequence |
| ps | poorly sorted |
| cs | clast supported |
| ms | matrix supported |
| fol | foliated |
| clvd | cleaved |
| shd | sheared |
| bx | brecciated |
| aug | augen |
| vnd | veined |

Constituents & Internal Textures:

| | |
|---|---|
| ply | polymict |
| li | lithic |
| pm | pumice |
| xl | crystal |
| vit | vitric |
| sph | spherulites |
| ves | vesicles |
| amy | amygdales |
| wsp | wisps |
| sty | stylolites |
| f | felspar |
| q | quartz |
| mic | micaceous |
| cal | calcareous |
| px | pyroxene |
| hb | hornblende |
| cr | chromite |
| mag | magnetite |

Alteration.

| | |
|---|---|
| bch | bleached |
| dtx | de-textured |
| ox | oxidised |
| alb | albitised |
| ca | carbonatised |
| chl | chloritised |
| ser | sericitised |
| kao | kaolinitised |
| ep | epidotised |
| sil | silicified |
| fuc | fuchsitic |

Mineralisation.

| | |
|---|---|
| dis | disseminated |
| v | vein |
| str | stringer |
| msv | massive |
| bnd | banded |
| cla | clasts |
| gos | gossan |
| sul | sulphides |
| py | pyrite |
| po | pyrrhotite |
| asp | arsenopyrite |
| gn | galena |
| sp | sphalerite |
| cp | chalcopyrite |
| ba | barite |
| mag | magnetite |
| hm | haematite |
| lm | limonite |
| au | gold |
| ag | silver |
| to | tourmaline |
| q | quartz |
| cb | carbonate |
| sd | siderite |
| mn | manganese carbonate |
| fl | fluorite |

*4. MAPPING SYMBOLS*

- Strike and Dip of Strata (25)
- Strike and dip of inverted strata
- Strike and dip of cleavage or foliation (60)
- Plunge of lineation (50)
- Geological boundary position accurate
- Geological boundary position approximate
- Mine
- Abandoned prospect or mine
- Costean or trench
- Diamond drill hole, including projection
- Unchecked stream sediment anomaly
- Unconformity
- Fault
- Fault with dip (70)
- Thrust Fault
- Plunging antiform
- Plunging synform
- Shear/strong cleavage
- Vein

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| | |
|---|---|
| PASMINCO EXPLORATION — A Division of Pasminco Australia Limited | |
| COMPILED : M.S.S. | E.L. 1/93 - HUSKISSON RIVER |
| DATE : April 1994 | **OUTCROP AND INTERPRETIVE GEOLOGY** |
| DRAWN : G.M.B. | |
| REF: | |
| REVISIONS : M.S.S | |
| April 1995 | |
| DRAWING No. 315-GL-021 | SCALE 1 10000 (0 20 40 metres) |
| | FIG. No. 11 |

95-3723.