

**LYNCH CREEK
TASMANIA
EL 1/2009**

ANNUAL REPORT FOR THE YEAR ENDING THE 25 MAY 2010

**Prepared by Ron Gregory
Private Bag 60
Launceston
Tas.
7250**

CONTENTS

	Page
Summary	2
Introduction	3
Exploration Philosophy	4
Geology	5
Previous Exploration	6
Work completed	7
Future work	8

LIST OF PLANS

1. - Location Plan	PLAN 1
2. North and south lynch ck prospects	PLAN 2
3. Proposed track Cutting 2010/2011	PLAN 3

INTRODUCTION

This mineral exploration licence is primarily focused on metallic minerals, specifically silver, lead zinc, reported to have been located in Lynch Ck. It is for a total of 24 sq. km comprised of two portions. The western portion, (called Alfred R.) located west of the Huskisson R. has been surrendered.

This report concentrates on the eastern portion (called Lynch Ck) specifically the target of exploration, the Lynch Ck Prospect.

The Lynch Ck district is very rugged State Forest located about 22 km west of Tullah. The majority of the area is covered with myrtle or eucalypt rainforest.

Access to the western end of John Lynch Ck is via Boco Rd to the old Comstock, "Lynch Ck. Track", now overgrown and no longer passable by vehicles.

The eastern end of John Lynch Ck can be reached via Higgins Ck Track off Boco Rd. This track was well formed 15 years ago but is now moss covered and becoming overgrown, but is just traversable by vehicle.

EXPLORATION PHILOSOPHY

This licence was acquired to locate and assess the Lynch Ck prospect (ref 2260), which is reported to be located at 375240E 5387480N (AGD66). No record of modern exploration has been located since a visit by Reid in 1918. No record of geochemical sampling along strike of the Lynch Ck. prospect to **Just in Time prospect** in the north and **Bastyn Dam prospect** in the south has been found. This is probably due to the rugged terrain. The mineralized formation may represent a viable exploration target now that the Hellyer Mill is about to be restarted to treat barite type base metal ore.

GEOLOGY

I am really not qualified to comment on the geology of the district. Arrangements are in hand for graduate geologist, Miss Alex Lintner to report on this in the coming months.

PREVIOUS EXPLORATION

1918

The Lynch Ck Prospect was first discovered by A. McIntosh Reid and reported in Geological Survey Bulletin No.28. He described it as a “**strong lode**” and that it is “probably the continuation” of the “**Just-in-Time claim**”. “Very large loose blocks of ore were first discovered in the bed of Lynch Ck.” “The indications of the potentialities of this ore bearing horizon as a source of galena are decidedly encouraging.” (GSB 28 - pages 98-100 plus map)

1963 – 1988

Comstaff carried out significant regional exploration and identified the Will O Wisp and Just in Time prospects which may be a continuation of the Lynch Ck formation. Several reports postulated this theory. (85_2401)

Several reports mentioned the Lynch Ck prospect but that is all. (68_0540)

Stream sediment sampling was to the **west** and **east** of the Lynch Ck Prospect, but **not** over the section of John Lynch Ck that the “OLD” Lynch Ck Prospect is supposed to lie in. (Plan 3 from unknown report)

Comstaff soil sampled the North and South Lynch Ck Prospects which are located **west** of the “OLD” Lynch Ck Prospect. (71_0838 & 72_0849)

Several reports indicated that no work was done on the “OLD” Lynch Ck Prospect. Report **85_2392** provides an overview of Comstaff exploration in the area

1994

Sipa Exploration mentioned Lynch Ck Prospect but did not locate it (page 2 in 96-3725).

Sipa Exploration mentioned Lynch Ck Prospect but did not locate it. However this report shows the relationship of Lynch Ck. Prospect to the Bobadil Fault and indicates the Bastyn Dam Prospect is along strike to the south. It also has some interesting comments on the geophysics of the area. (96_3907)

1993 – 1997

Pasminco Exploration explored the Just in Time prospect but did no work on the Lynch Ck Prospect.

The Licence was located just to the north of the prospect (97-4004)

2007 – 2009

Bass Metals conducted no work on the Lynch Ck Prospect. (08_5680)

EXPLORATION COMPLETED 2009/2010

1. Thorough examination of historical reports to confirm that Lynch Ck prospect has not been located since 1918. This involved a check of all reporting for EL5/63 (Comstaff).
2. An attempt was made by a party of 3 to get to the Lynch Ck. Prospect from the old Comstaff “Lynch Ck Road” without cutting a track. This was unsuccessful due to the thickness of the scrub.
3. An attempt was made by a party of 3 to get to Lynch Ck from the east via Higgins Ck Track without cutting a track. This also was unsuccessful due to a large very steep waterfall blocking the path.
4. An attempt was made by a party of 3 to get to the Lynch Ck. Prospect via Higgins Ck Track down the steep hillside. Although Lynch Ck. itself was located, track cutting will be required to traverse upstream along the creek to the waterfall, or downstream.
5. Base maps prepared by Gillian Bennett.

PROPOSED WORK 2010/2011

1. Engage contractors to cut a track from Higgins Ck. Track down to Lynch Ck, so as to arrive downstream of the prospect.
2. Cut the track along the southern bank of Lynch Ck up to and around the waterfall and then return to Higgins Ck Track
3. Locate Lynch Ck. prospect, sample and assess mineralization.

- 5.
4. If the prospect looks sufficiently encouraging, cut out creek lines to the north & south of the prospect to conduct stream sediment and geological traverses, to try and determine the extent of strike of the formation
5. Seek a Joint Venture partner to assist with further exploration.

EXPENDITURE 2009/2010

Actual expenditure was only confined to transport to the licence and map preparation. The field work was done by me with the assistance of friends at no charge to myself

The value of work done during the year was at least \$10,000, plus administration, in my opinion.

REFERENCES

Not all the EL5/63 reports are quoted here as they are quite numerous. Only those that had some mention of Lynch Ck prospect or relevance are noted.

GSB37 – The North Pieman and Huskisson and Sterling Valley mining fields

Reid, A.M.

ER8014N – Geological Survey Explanatory Report, SHEET 44, Mackintosh 68_0540 – Geological review Exploration Licences EL 5/63, EL 1/68 and 7 AP/AM North West Tasmania

Cornwall, F.W.D.' McBride, B.

71-0838 – 1970-1971 Summer Field Season Report, EL 5/63

Chisholm, T., Everett, M.P., Henry, D., Pigott, G.F., Wallis, D.

72_0849 – EL5/63, 1971/1972 Summer Field Season Report, Huskisson Grids.

Pigott, G.F.

82_1690 – Six Monthly Report to Tasmania Dept of Mines for the period Ended 30 Dec, 1981; Summary of Work Completed in Progress and Proposed for EL

85_2392 – An Assessment and Review of the Chester, Silver Falls and Pinnacles Area ('69-'70)

Everett, M.P.

Anderson, B.E., Green, N.P., Jones, C.M., Pigott, G.F., Yardley, S.R.

85_2401 – Proposals for further work in the Will O' wisp (CAB) Area of EL5/63

Everett, M.P.

95_3725 – Sipa Exploration NL Annual Report EL 29/91

Morant, P.

96-3907 – Golden Reef Enterprises, Final Report EL 29/91

White, A.H.

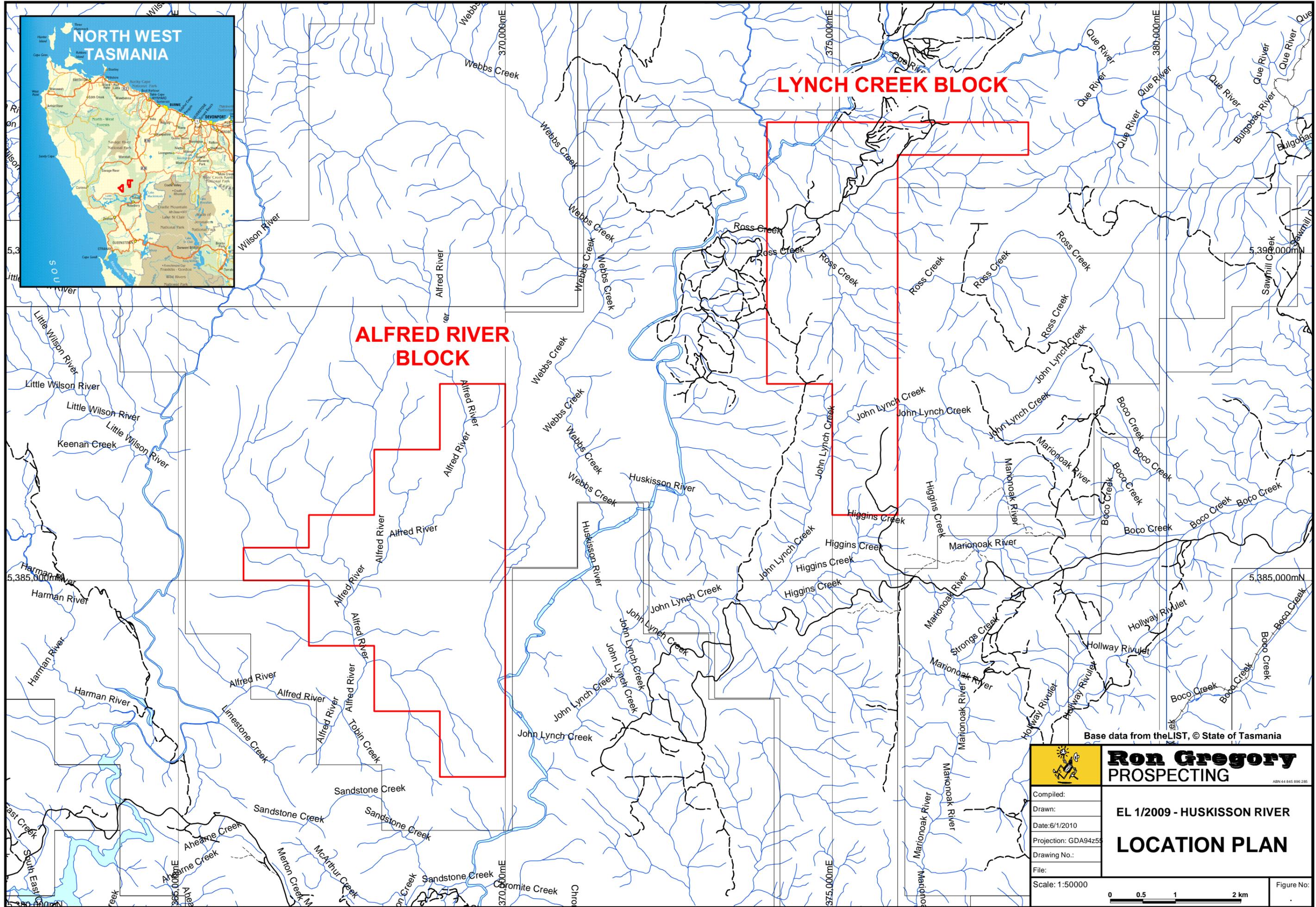
08_5680 – Bass Metals Ltd, Huskisson Project, Partial Relinquishment Report, EL 3/2005

Bates, S.



LYNCH CREEK BLOCK

ALFRED RIVER BLOCK



Base data from theLIST, © State of Tasmania

	Ron Gregory PROSPECTING <small>ABN 44 845 896 285</small>		
	EL 1/2009 - HUSKISSON RIVER		
	LOCATION PLAN		
	Compiled: Drawn: Date: 6/1/2010 Projection: GDA94z50 Drawing No.: File:	Scale: 1:50000	
			Figure No.:

STAGE 2 TRACK CUTTING + SAMPLING

STAGE 1 PROPOSED CUT TRACK

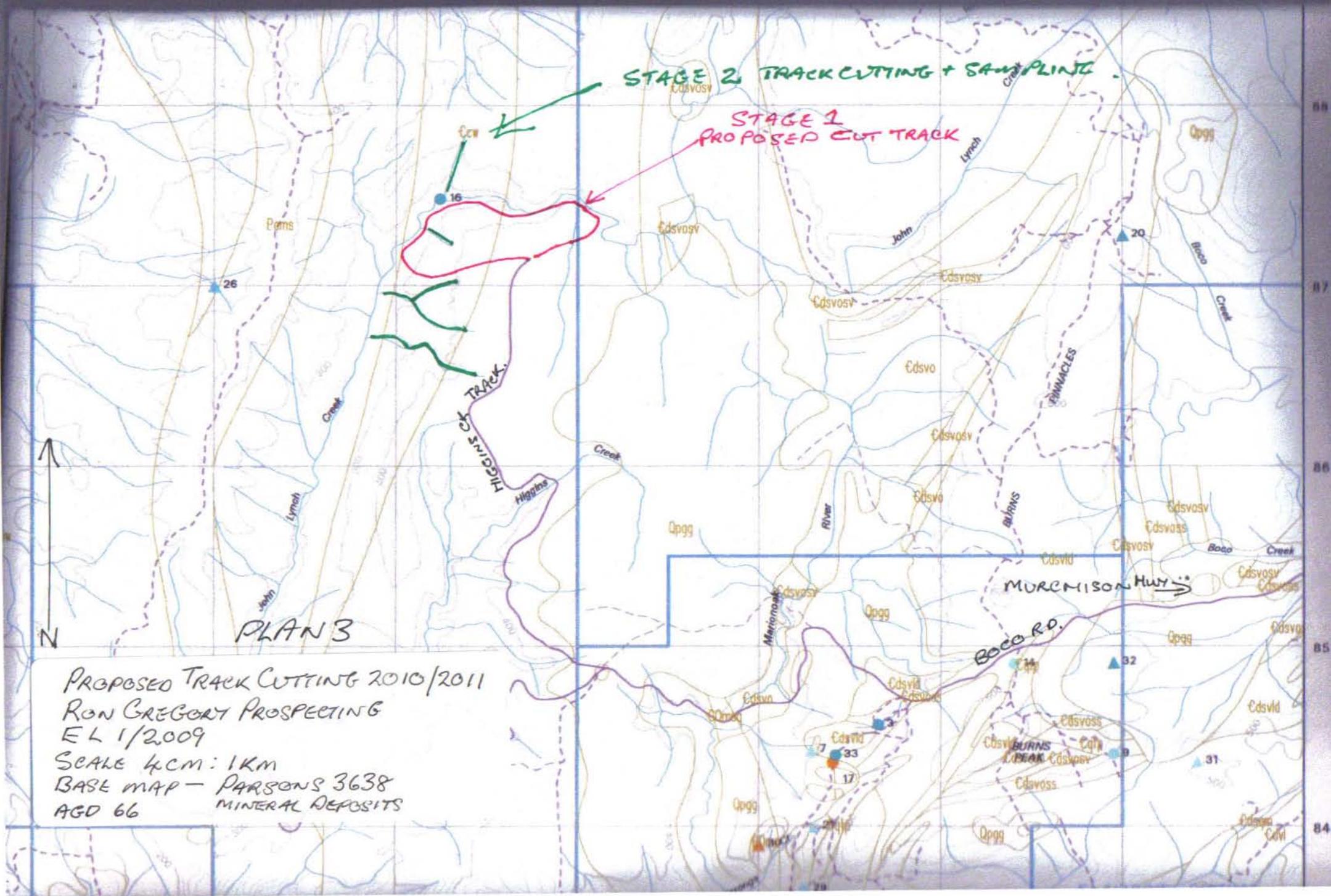
HIGGINS Ck TRACK

MURKINSON HWY

BOCO RD.

PLAN 3

PROPOSED TRACK CUTTING 2010/2011
RON GREGORY PROSPECTING
EL 1/2009
SCALE 4CM:1KM
BASE MAP - PARSONS 3638
AGD 66 MINERAL DEPOSITS



88
87
86
85
84

APPENDIX

1. Geological Survey Bulletin 28,
Reid, 1918 –
Pages 1, 98-100, plus map
2. Report 68_0540
Comstaff Pty Ltd
Pages 1 & 9
3. Report 71_0838
Comstaff Pty Ltd
Pages 1, 4, 16, 19, 21 – 24
4. Report 72_0849
Comstaff Pty Ltd
Pages 1 – 8
5. Report 85_2392
Anglo American Corp
Pages 1 – 7
6. Report 95_3725
Comstaff Pty Ltd
Pages 1, 4 & 5
7. Report 96_3907
Sipa Exploration NL
Pages 1, 3, 4, 7 – 9 & 13

GSB 28

Tasmania

DEPARTMENT OF MINES

GEOLOGICAL SURVEY BULLETIN

No. 28

The North Pieman and Huskisson
and Sterling Valley Mining
Fields

BY

A. McINTOSH REID, Acting Assistant Government Geologist

Issued under the authority of

The Honourable Sir NEIL ELLIOTT LEWIS, K.C.M.G.
Minister for Mines for Tasmania



Tasmania:

JOHN VAIL, GOVERNMENT PRINTER, HOBART

B82381

1918

economically. That already carried out is on a scale too small to prove the value and extent of the ore-body; even the open-cut work penetrates a few feet only beyond the foot-wall. Crosscutting the ore-body at intervals of 200 feet by tunnels sent in from the western side would supply sufficient data from which an approximate estimate of value may be computed, and provide information upon which more extensive exploratory work may be outlined. The chief obstacles in the operation of this mine are—the necessity to concentrate the minerals of economic value; the difficulty of access; and the lack of means of transportation to the railway.

Further developments are not expected to reveal much richer material than that exposed at the waterfall, but if the grade improve slightly, the mine, operated on a sufficiently large scale, may become a profitable producer.

It is to be regretted that this large orebody has not been thoroughly tested.

(8)—LYNCH CREEK PROSPECT.

This is a strong lode, outcropping in the valley of Lynch Creek, a tributary of the Huskisson River, at a point near the crossing by Atkinson's track. Its position relative to the Pinnacles Mines is $2\frac{1}{2}$ miles due west, and it may be reached from that locality by foot-track.

The discovery of this lode was made by the writer during the present geological examination of the district.

This belt of mineralisation is quite distinct from that of the porphyroid to the eastward, and is probably the continuation of that reported on by Mr. A. Montgomery in 1892⁽²⁶⁾. This was a barytes-galena formation discovered near the point of confluence of the Que and Huskisson Rivers. It is referred to in the following terms:—

“On the eastern side of the Huskisson, and close to the river, a discovery of galena has been made which goes by the name of the Just-in-Time claim. It is about a mile south of the crossing of the Que River by the pack-track from Waratah to the Pieman River. The outcrop shows a mixture of quartz, barytes, galena, and a little calcite. The lode is evidently a strong one, over 2 feet wide at the least, and

⁽²⁶⁾ *Vide* A. Montgomery: “Report on the Country Traversed by the Route of the proposed Waratah to Zeehan Railway.” Secretary for Mines Report, 1892.

probably quite 5 or 6 feet wide. Its course is not altogether clear, but appears to be nearly north and south. No first-class ore is yet exposed, though a good deal of the material would probably be worth concentrating. The country-rock is limestone, and sandstone. This is a discovery of some importance, and is well worth following up to see if richer ore may be obtained."

The many points of similarity of the Lynch Creek prospect to that just described, in that it is contained in limestone and consists essentially of barytes and galena, and the situation relative thereto, are strongly suggestive of their belonging to the one belt of mineralisation.

The lode material at Lynch Creek is a siliceous gossan carrying abundant barytes and occasional blebs of galena. The limonite of the gossan is derived from the oxidation of pyrites, but a considerable portion of the original pyrite constituent has been leached out, leaving the silica in cellular form. Evidently it was originally a very pyritic ore. Pseudomorphs of limonite, in the form of pentagonal dodecahedra, after pyrite, are commonly observed in the ore. Barytes is found in the form of white plates several inches long, and occurs usually in narrow bands in the cellular silica; galena is always found accompanying the barytes.

A sample of siliceous gossan from the outcrop in the bed of Lynch Creek was submitted to Mr. W. D. Reid, Government Assayer, who reported the metallic contents to be—lead, 1.7 per cent.; silver, 3 dwt. per ton. The greater portion of the metallic content has been removed by the solvent action of the running water, and the assay is, therefore, no criterion of the value of the ore; but the presence of silver still remaining in the ore is an indication of greater values in the unattacked lode material.

Very large loose blocks of ore were first discovered in the bed of Lynch Creek just above the point of crossing by Atkinson's track. These boulders of ore were observed in the creek for 10 chains northward, and ore was noticed, apparently *in situ*, in the bed of the creek. An attempt to follow the course of the lode on to the steep hills on either side of the creek failed because of the heavy mantle of talus and surface soil concealing the outcrop. The short stay in this locality did not allow of a thorough examination being made, but enough information was gained to indicate the probable value of the ore-deposit.

The ore-body is doubtless a metasomatic replacement of limestone by ore-bearing solutions derived from a granitic magma during the later stages of rock solidification. These solutions contained a very large amount of silica, and were strongly acidic. It is probable that the original limestone bed was very narrow, as no limestone was noticed, and its presence is inferred only from the structure of the silicified rock. In the non-mineralised portion the rock appears in the form of very delicate cells, the sides of which are made up of very thin partitions of silica. Some of these cellular shapes appear like casts of fossils, but if so, they are too obscure to be recognised. Silicification has not been confined to this horizon. The conformable beds of breccia-conglomerate, largely made up of pyroclastic material, in places have also undergone replacement by silica.

The facilities for economic mining are decidedly good. On either side of the creek hills rise very steeply over 800 feet above the bottom of the valley. Timber for all purposes is here in abundance, and a plentiful supply of water is available even in the dry season.

The indications of the potentialities of this orebearing horizon as a source of galena are decidedly encouraging, and certainly justify far greater attention being paid to this district than obtained heretofore. Want of accessibility has been the great obstacle to the advancement of this portion of the district, but as developments warrant it communication with the main thoroughfares will be provided.

(9)—SALMON'S CLAIM.

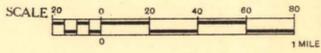
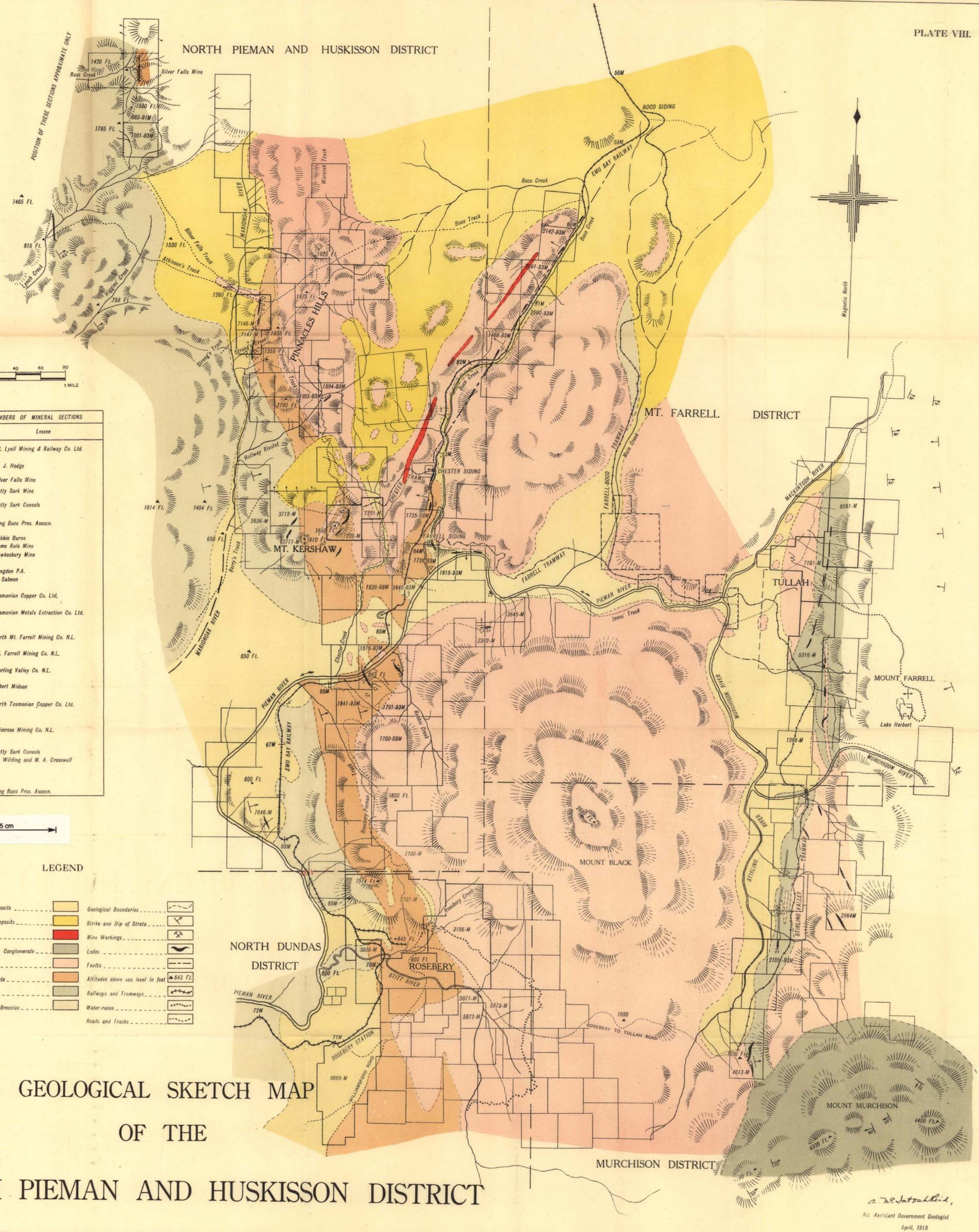
Section 7646-M, 78 acres.—This property is situated at the southern end of Bobadil Plain, on the western side of the Emu Bay Railway-line, between the 67½ and 68 mileage pegs.

The lodes exposed on this section were discovered last year by Alfred Lapham in the banks of a small stream flowing westward into the Pieman River.

There are two quite distinct parallel ore-bodies, the more important being that on the eastern side, which for purpose of reference will be called the "eastern lode."

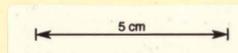
Developments consist of a small cut sent in on the eastern ore-body; another small cutting on the western formation; and light surface prospecting here and there over the intervening area. So little developmental work has

NORTH PIEMAN AND HUSKISSON DISTRICT



KEY TO NUMBERS OF MINERAL SECTIONS

Number of Section	Acres	Lessee
7220-M	80	Mt. Lyell Mining & Railway Co. Ltd.
7221-M	30	
7146-M	80	W. J. Hodge
7147-M	40	
5585-M	80	Silver Falls Mine
1726-93M	80	Cully Sark Mine
1876-93M	36	
1725-93M	80	Cully Sark Consoles
1839-93M	80	
2142-93M	79	King Boco Pros. Assoc.
2591-93M	80	
1841-93M	80	Robbie Burns
1918-93M	40	Home Rule Mine
1700-93M	80	Hawkesbury Mine
1701-93M	80	
2382-M	40	Langdon P.A.
7645-M	78	A. Salmon
3908-M	27	
2707-M	454	Tasmanian Copper Co. Ltd.
965-91M	80	
5669-M	359	Tasmanian Metals Extraction Co. Ltd.
2836-M	80	
6581-M	160	
7191-M	183	North Mt. Farrell Mining Co. N.L.
3712-M	79	
5316-M	161	Mt. Farrell Mining Co. N.L.
1021-M	80	
4013-M	80	Stirling Valley Co. N.L.
2185-93M	80	
2864M	80	Albert Midson
3711-M	74	
7700-M	159	North Tasmanian Copper Co. Ltd.
3712-M	79	
5872-M	40	
3186-M	333	Primrose Mining Co. N.L.
5873-M	68	
5871-M	18	
1840-93M	75	Cully Sark Consoles
1286-M	5	W. Wilding and M. A. Crosswell
1488-93M	80	
1893-93M	33	
1894-93M	38	
2590-93M	80	King Boco Pros. Assoc.



LEGEND

RECENT	Glacio-fluvialite Deposits	Geological Boundaries	
PLEISTOCENE	Glacial Morainal Deposits	Strike and Dip of Strata	
LATE MESOZOIC	Diabase	Mine Workings	
	West Coast Range Conglomerate	Lodes	
	Felsite Keratophyre	Faults	
PRE-SILURIAN	Read-Rosebery Schists	Altitudes above sea level in feet	
	Farrell Slates	Railways and Tramways	
	Dundas Slates and Breccias	Water-races	
		Roads and Tracks	

GEOLOGICAL SKETCH MAP
OF THE
NORTH PIEMAN AND HUSKISSON DISTRICT

A. J. Antalkil
Act. Assistant Government Geologist
April, 1918

Photo Engraving by John Van Nostrand Printing, Hobart, Tasmania.

000

68-540.

COMSTAFF PTY. LIMITED

GEOLOGICAL REVIEW

EXPLORATION LICENCES EL5/63, EL1/68, 7AP/AM

NORTH WEST TASMANIA

MICROFILMED

008

At Rosebery lenses of barite are associated with the zinc-lead-silver orebodies. Near Mt. Read, at Mt. Sedgwick, Mt. Darwin and other localities a particular type of potassic lava was intruded by veins up to 200 feet wide of magnetite-hematite-barite, these components being primary constituents of the magma. "Extensive deposits" of barytes have been reported from the Mt. Block-Mt. Charter area in the Mt. Read Volcanics in the south-east of the licence. Lead-barium mineralisation is also recorded from Lynch Creek and Just in Time near the Huskisson River south-west and west of Silver Falls.

Low silver-gold values are recorded from Mt. Charter-Gold Hill near the eastern boundary of the licences. The values are claimed to occur in two belts of shearing within Cambrian sediments, pyroclastics and acid to intermediate intrusives, all of which have been partly silicified.

The chief minerals on record as having been won from alluvial or eluvial deposits are cassiterite, osmiridium, platinum and gold.

Bismuth mineralisation is recorded at Mt. Ramsay.

PREVIOUS WORK

In 1950 North Broken Hill Limited carried out a limited investigation of the Owen Meredith-Bon Accord area and the nearby Poseidon prospect north-west of Renison Bell. Results of this investigation are not on file in the Mines Department, but it has been recorded that the investigation was not complete at the time of its abandonment.

In the early 1950's Electrolytic Zinc Company examined the Godkin-Bell's Reward area 13 miles west of Waratah and are also believed to have examined the Silver Falls area. Five diamond drill holes totalling 3,157 feet drilled in the former area gave negative results and no records of work in the latter area are known.

From 1957 to 1961 Rio Tinto Australia Exploration and Electrolytic Zinc Company of Australasia jointly carried out an investigation in north-west Tasmania which included part of the present Comstaff ground. This investigation was chiefly related to the geological control of mineralisation, comprehensive stratigraphic and structural studies and palaeotectonic interpretations. This was followed by geophysical and geochemical surveys of specific areas. Only one of these areas, Chester-Pinnacles, is within the Comstaff licences. As no sub-surface work was done it must be concluded that results obtained were not encouraging and/or areas of higher priority existed elsewhere.

During the period 1963-1966 the Aberfoyle group held a lease on the south-western slopes of Mt. Bischoff. Acting on a geological interpretation of a NE-SW fault with the western block of sediments downthrown, four diamond drill holes were completed with negative results.

000

791001

MICROFILMED

COMSTAFF PROPRIETARY LIMITED

1970 - 1971 SUMMER FIELD SEASON REPORT

E.L. 5/63

VOLUME I

CONTENTS

1. Huskisson Regional Report
2. Huskisson Grid Report
3. Preliminary Report for the Huskisson South Project

1.4. Previous work

Previous work prior to the summer 1968/69 season seems to be limited to the development of two small lead barium prospects that are shown on the geological survey map. During summer 1968/69 two out of three cut lines sampled over the Huskisson serpentinite realised very highly anomalous nickel geochemical values. As a result of this, during the summer of 1969/70, a detailed grid was cut and sampled to cover the anomalous zone. In addition a small programme was carried out along and north of Lynch Creek to determine if the serpentinite shown on the official map did in fact exist and if so, to determine its relationship with the serpentinite to the south.

1.5. Objectives

- 1.5.1. To locate areas of potential mineralization by stream sediment sampling within a group of Cambrian or Precambrian sediments known to be mineralized elsewhere within the Tasman geosyncline - particularly in an antiformal environment which the Huskisson area was deduced to be, lying between the Huskisson syncline and the Que syncline.
- 1.5.2. To map the rocks and structure and attempt to correlate these with the Coldstream Ramsay sequence to the north and the geochemistry.
- 1.5.3. To continue the investigation of the Huskisson serpentinite.

1.6. Exploration Methods

Active stream sediment samples were collected at 500' intervals on all major river systems and most tributaries following a tape and compass survey. Heavy concentrates were taken from various significant points, viz.,

3.3.1. Copper3.3.1.1. Streams

Values range from 2 to 150 ppm with a population peak of 18 ppm. Values greater than 60 ppm are considered to be possibly anomalous. High copper values are confined to those streams draining unit 3 west of the anticlinal axis.

3.3.1.2. Soils

Values range from 2 to 130 ppm with a population peak of 3 ppm. Values greater than 70 ppm are considered as being possibly anomalous. These values are concentrated on the southern section of the Lynch Creek road.

3.3.2. Zinc3.3.2.1. Streams

Values range from 10 to 5800 ppm with a population peak of 75 ppm. Values greater than 450 ppm are considered to be possibly anomalous and those greater than 950 ppm are probably anomalous. Most probably anomalous values are located on that south bank tributary of Lynch Creek which drains the serpentinite. Two other probable anomalous values together with several possibly anomalous values are associated with high nickel, copper, silver and mercury values in the possibly anomalous arcuate zone.

3.3.2.2. Soils

Values range from 4 to 180 ppm with a population peak of 5 ppm. Values greater than 100 ppm are considered to be possibly anomalous. These values are coincident with the high copper values on the southern section of Lynch Creek road. The few values higher than 100 ppm on the Huskisson north road have significance only in their association with high lead values at the serpentinite, country rock (shale) contact.

the histogram shows values to 360 ppm.

3.3.5. Lead

Most stream sediment samples with high zinc, nickel and copper were analysed for lead. Values range from 20 ppm to 140 ppm with a population peak of 40 ppm. Values greater than 225 ppm are considered to be probably anomalous and all lie on the south bank tributary of Lynch Creek which drains the Huskisson serpentinite. Within this creek system the very small tributaries that drain the serpentinite rather than the contact are not anomalous, thus suggesting that the zone of anomalous lead values may be associated with the serpentinite, country rock (shale) contact.

3.3.6. Cobalt

Most stream sediment samples with high nickel and zinc were analysed for cobalt. Values range from 4 to 150 ppm and none were considered anomalous.

3.3.7. Bismuth

Initially all stream sediment samples were analysed for bismuth and thereafter only samples with high copper, zinc and nickel values. Values range from below the limit of detection (5 ppm) to 25 ppm with a population peak at 8 ppm. Values show a normal distribution and are unlikely to be anomalous. However, the three peak values of 25 ppm coincide with the probably anomalous area of lead and zinc. Part of the Lynch Creek road (not the possibly anomalous zinc, copper and nickel zone) was analysed for bismuth. All values were below the limit of detection.

3.3.8. Mercury

Most stream sediment samples with high zinc, copper and nickel were analysed for mercury. Values range from below the limit of detection (0.005 ppm) to

020

Be, Ni, Cu, Zn, Sn, Ag, Bi, and Sb. For the three elements not already discussed values for tungsten were below the limit of detection (50 ppm), values for tantalum were below the limit of detection (30 ppm), and values for beryllium ranged from 1 to 5 ppm and were not considered anomalous.

4. RECOMMENDATIONS

For this section please refer to plan Tas 2-230.

4.1. The area of probably anomalous lead, zinc stream samples adjacent to the eastern contact of the Huskisson serpentinite should be investigated by a grid with lines spaced at 500' intervals, two of which are to be extended to cross the width of the serpentinite. The grid could be extended further to the north of Lynch Creek by one grid line cut to cross the width of the serpentinite, and two further grid lines spaced 500' apart cut to investigate the eastern serpentinite contact zone. No soil samples taken at 100' intervals should suffice and be analysed for copper, zinc, nickel, cobalt and lead.

It must be recognised that part of the serpentinite over which the grid is to be established is a river terrace and the mapping of this will be vital in the interpretation of geochemical results.

4.2. Three north-south lines should be cut to investigate the arcuate zone of scattered possibly anomalous copper, zinc, nickel and mercury values in unit 3. The lines are indicated on the map and should be cut from points located in the creek toward the road. No soil samples taken every 100' should suffice, and be analysed for copper, zinc, nickel and mercury.

4.3. Five east-west lines should be cut to investigate the possibly anomalous copper, zinc and nickel zone,

021

on the southern part of Lynch Creek road and the high copper values in the streams to the NW. No soil samples taken every 100' should suffice and be analysed for copper, zinc and nickel.

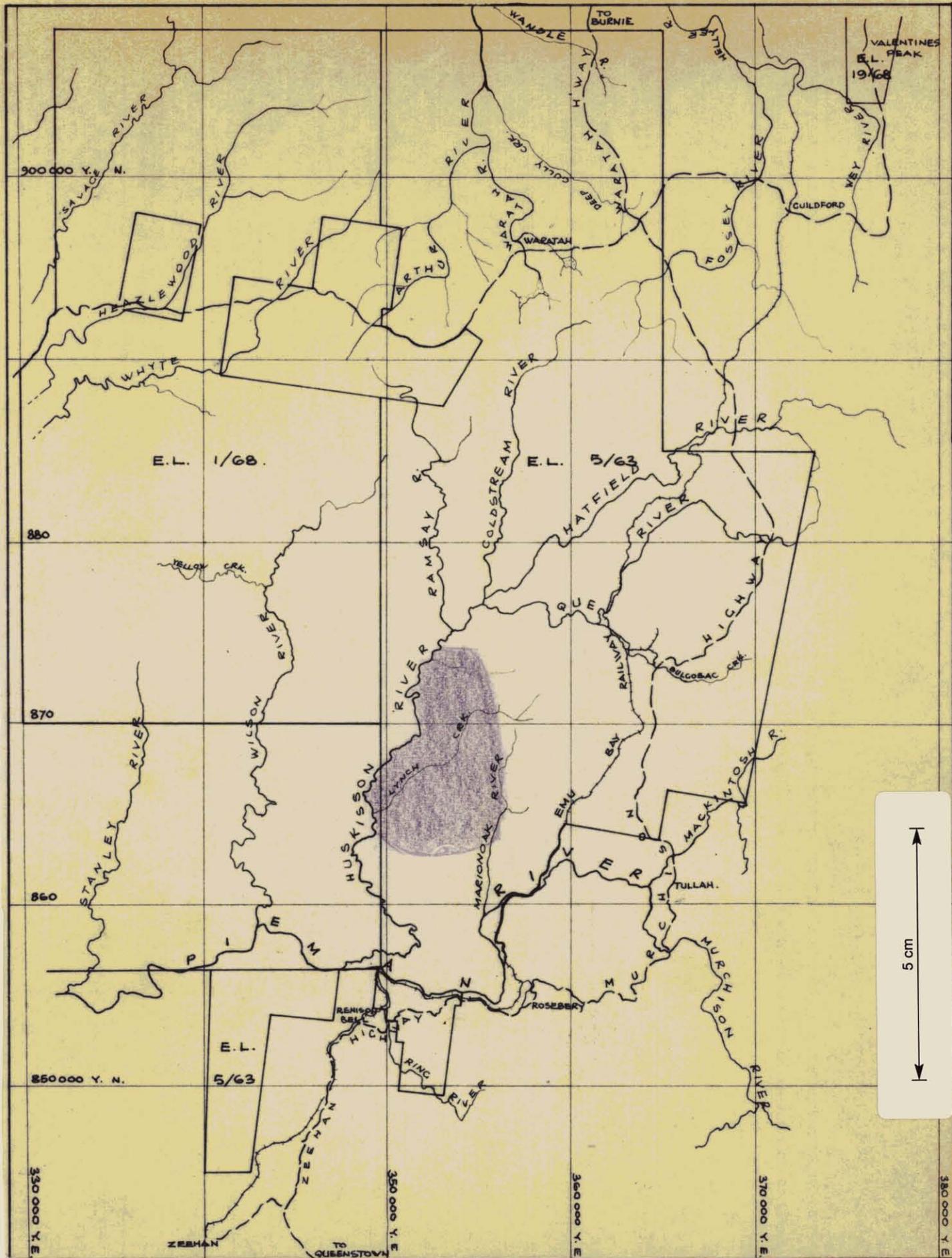
- 4.4. The high silver value of 6.4. ppm on the Huskisson access road, point HR 32, should be resampled together with 50' spaced sampling on either side for 200'.

5. PLANS

<u>PLAN NO.</u>	<u>TITLE</u>	<u>SCALE</u>
Tas 2-225	Locality Plan - Huskisson Regional	1:250,000
2-226	Huskisson Regional Geology	1: 50,000
2-227	Huskisson Regional Geochemical Coverage	1: 50,000
2-228,		
Sheet 1	Huskisson Regional Geochemical Anomalies - Cu, Ni, Hg.	1: 50,000
Sheet 2	Huskisson Regional Geochemical Anomalies - Ag, Pb, Zn.	1: 50,000
2-229		
Sheet 1	Huskisson Regional Histograms - Ni, Cu, Bi.	-
Sheet 2	Huskisson Regional Histograms - Ag, Pb, Zn.	-
2-230	Huskisson Regional Proposed Follow-up Grids.	1: 50,000

D. WALLIS

The author was assisted in the work on this area by the Exploration Manager, Dr. J.F. Lambert and geologist M.F. Everett.



LOCATION MAP.



COMSTAFF PROPRIETARY LIMITED.

791023

71-838
Vol. 1/3

LOCALITY PLAN

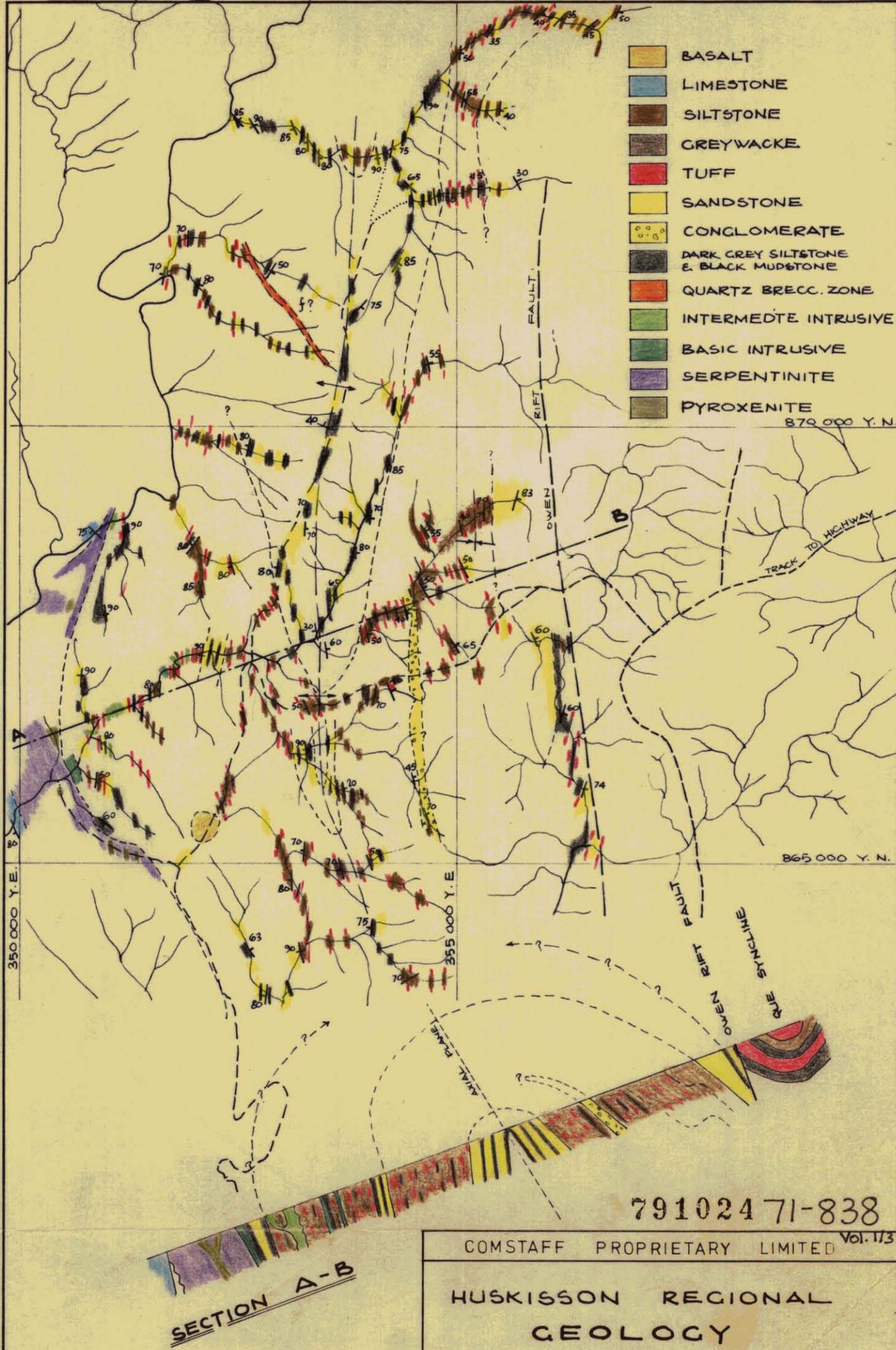
HUSKISSON REGIONAL

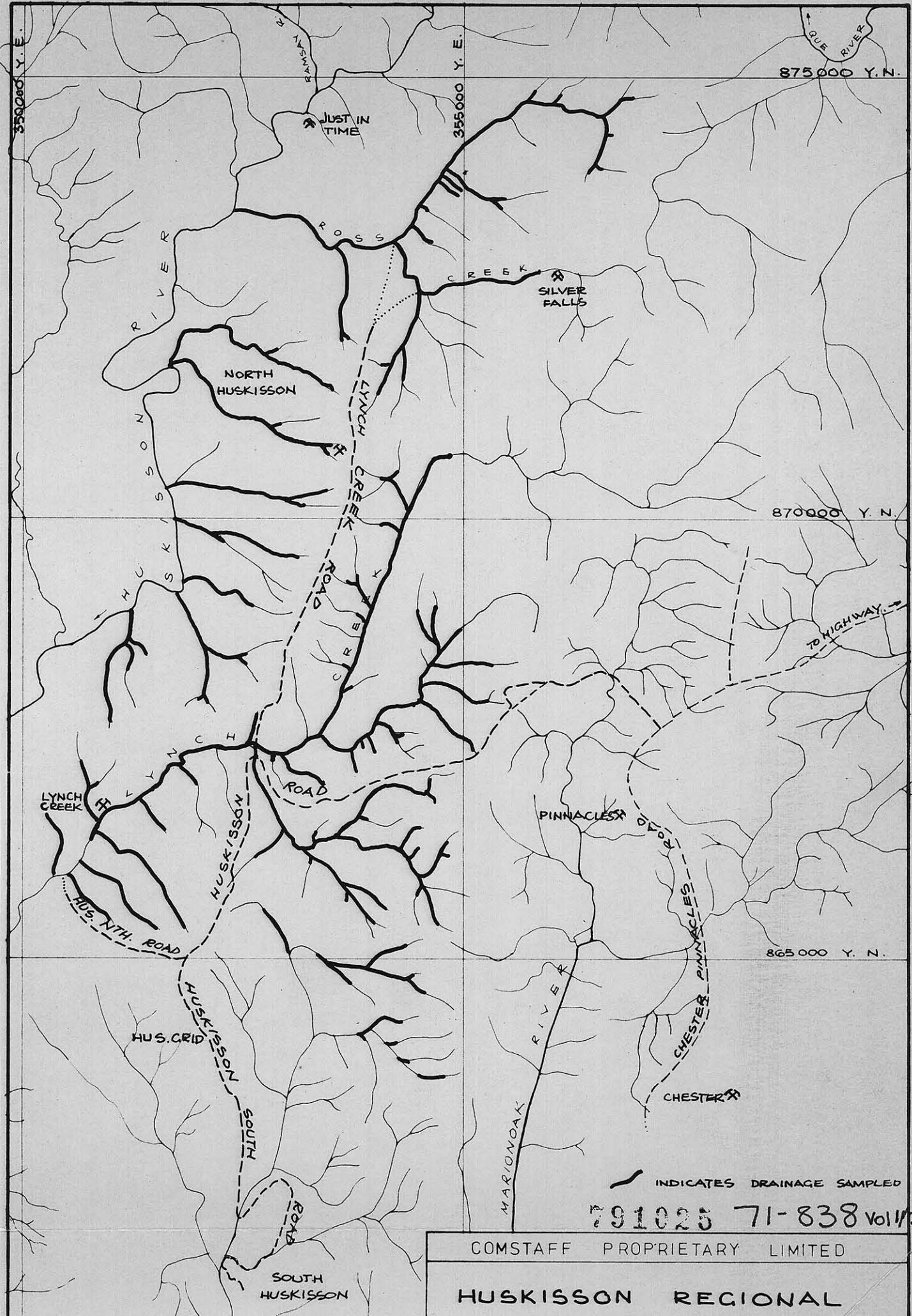
DRAWN G.C.

COMPILED G.C.

SCALE 1:250,000

TAS-2-225





791025 71-838 Vol 1/3

COMSTAFF PROPRIETARY LIMITED		
HUSKISSON REGIONAL GEOCHEMICAL COVERAGE.		
DWN. C.E.C.	SCALE 1:50,000	TAS 2 - 227

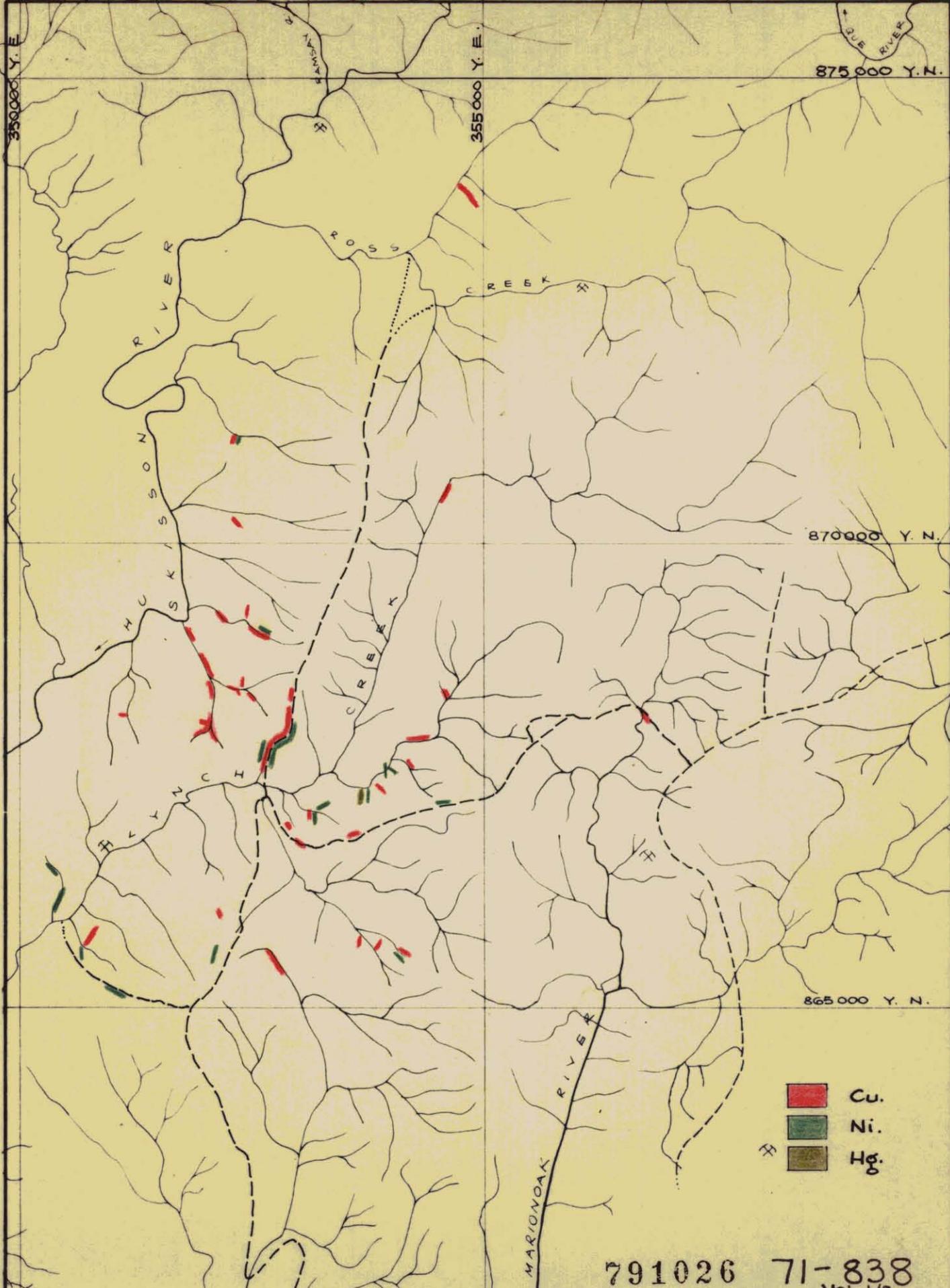
350000 Y. E.

355000 Y. E.

875000 Y. N.

870000 Y. N.

865000 Y. N.



- Cu.
- Ni.
- Hg.

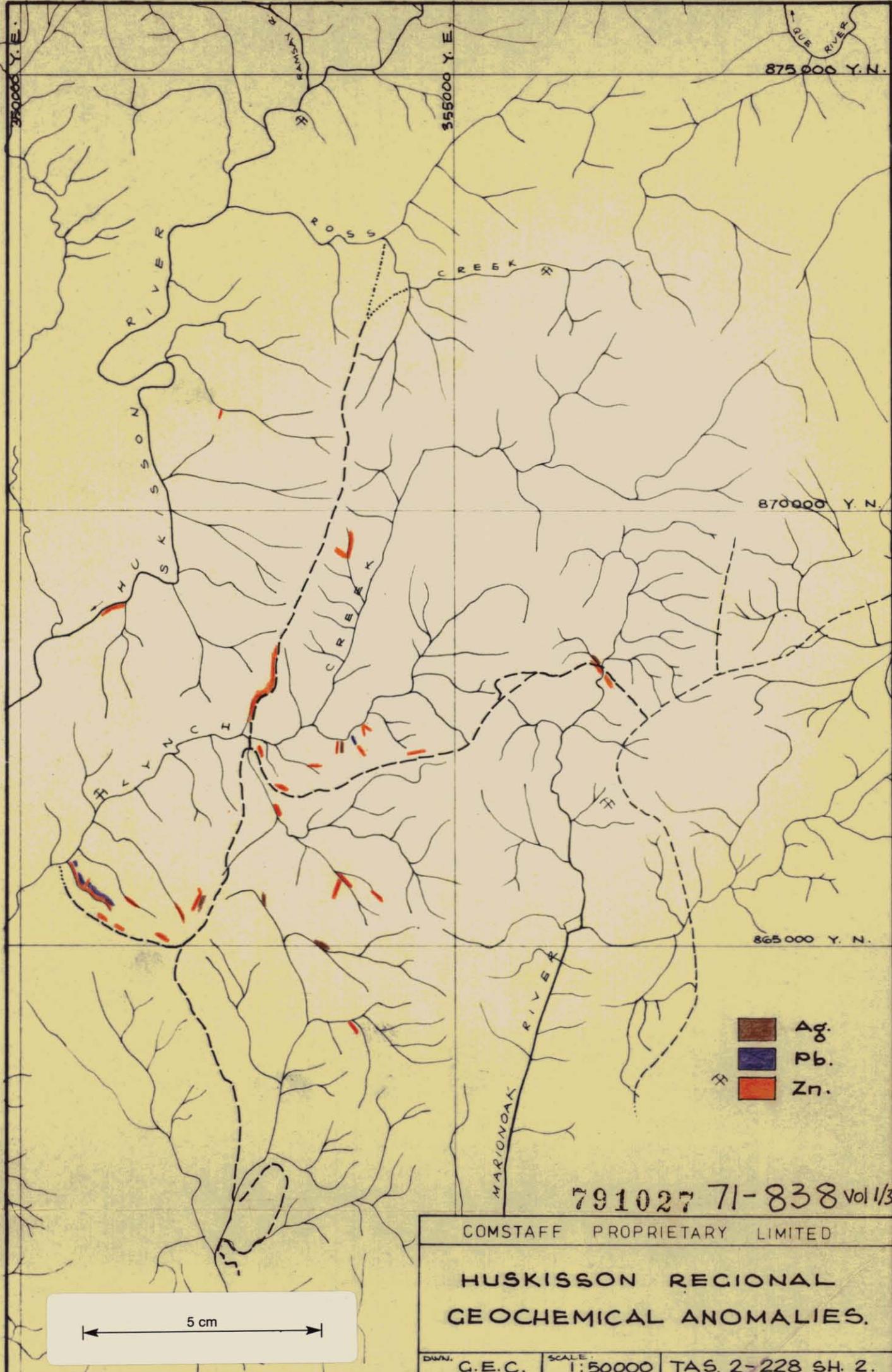
791026 71-838
 Vol. 1/3

COMSTAFF PROPRIETARY LIMITED

**HUSKISSON REGIONAL
 GEOCHEMICAL ANOMALIES.**

5 cm

DWN. C.E.C.	SCALE. 1:50000	TAS 2-228 SH. 1
----------------	-------------------	-----------------



5 cm

791027 71-838 Vol 1/3
 COMSTAFF PROPRIETARY LIMITED
**HUSKISSON REGIONAL
 GEOCHEMICAL ANOMALIES.**
 DWN. G.E.C. SCALE 1:50000 TAS. 2-228 SH. 2.

000

DK

780001

72-849

OPEN FILE		DEPT. M. O.	CG	CCR M.	ISSUE
		RECEIVED			REGISTER
				23	AUG 1972
		ANSWERED			E & IL
		DEPT. OF MINES			
		REF. No.			

aac

MICROFILMED

COMSTAFF PROPRIETARY LIMITED

EXPLORATION LICENCE 5/63

1971/1972 SUMMER FIELD SEASON REPORT

HUSKISSON GRIDS

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

72-849

HUSKISSON GRIDS

1. SUMMARY

2. RESULTS

- 2.1. Grid 1
- 2.2. Grid 2
- 2.3. Grid 3

3. PLANS

HUSKISSON GRIDS

(see TAS 2-288)

1. SUMMARY

Three grids totalling 50,900' were cut, mapped, and sampled during January 1972 as a follow up to recommendations made after the 1970/71 Huskisson regional programme. No significant anomalies were recorded. Low order Cu and Ni anomalies are due to the high background value in the basic tuff and greywacke sequences, sporadic Pb values are associated with quartz limonite veining, and low order anomalous Zn values are associated with a high background in the black shales. No further work is recommended.

2. RESULTS2.1. Grid 1 (TAS 2-290)

This grid was cut to follow up probably anomalous lead, zinc stream samples adjacent to the eastern contact of the Huskisson serpentinite. The soil samples were analysed for Zn, Cu, Ni, Co, and Pb. The results were plotted and anomalous values chosen. The grid was then geologically mapped.

The serpentinite trends 330° MN and reaches a maximum width of 3200'. A small area (300' x 1000') of less than 1% cross fibre asbestos occurs to the north. Insignificant low order anomalies for Ni, Co, and Zn occur on the serpentinite. A microgabbro which intrudes the country rocks has a high Cu background. The quartzite and shales give low background values, sporadic possibly anomalous Zn values are observed over black shales. The tuffs and greywackes have a high Cu background, and have sporadic lead anomalous values which appear to be associated with limonite cappings exhibiting cubic voids.

None of the values are considered to be significant and no further work is recommended.

2.2. Grid 2 (TAS 2-291)

Grid 2 was cut to investigate the possibly anomalous Cu, Zn, and Ni zone on the southern part of the Lynch Creek road and the high Cu values in the streams to the NW. Soil samples were analysed for Zn, Cu, Ni, Pb, Ag, and Hg, and the grid geologically mapped.

The area is comprised of basic tuffs, greywackes, and siltstones which have a high background in Ni and Cu, overlying quartzites and shales which have sporadic possibly anomalous values in Zn associated with black shales.

No significant values have been recorded and no further work is recommended.

003

2.3. Grid 3 (TAS 2-292)

Grid 3 was cut to investigate the arcuate zone of scattered possibly anomalous Cu, Zn, Ni, and Hg values in unit 3 (1970/71 Huskisson Regional Report). The soil samples were analysed for Zn, Cu, Pb, Ag, and Hg, and the grid geologically mapped.

This area is of basic greywackes and tuffs with quartzite and shales to the NW. A thin veneer of moraine deposit overlies the rocks in part of the grid. Possibly anomalous Pb and Zn values are associated with minor quartz-limonite veins in the tuffs, but there are no gossans. Cu values are relatively high due to the high background in the greywackes and tuffs.

None of the values are considered to be significant and no further work is recommended.

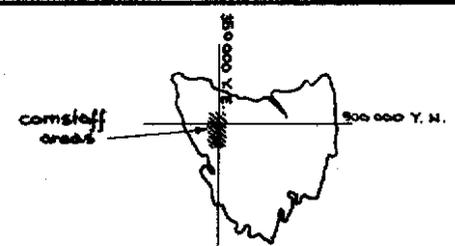
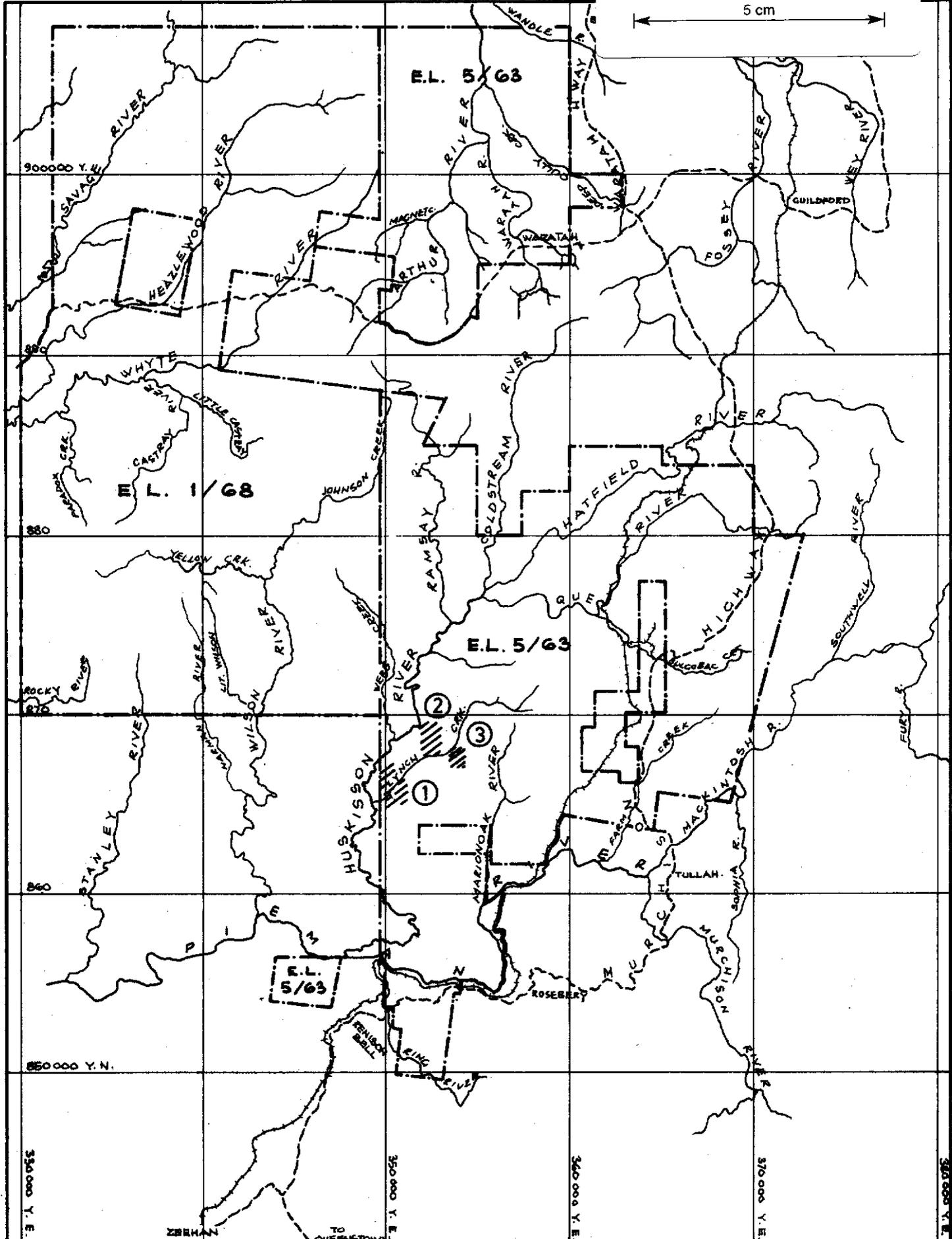
3. PLANS

TAS 2-305	Huskisson Grids		
2-290	" "	Grid 1	Geology/Anomalies
2-291	" "	Grid 2	" "
2-292	" "	Grid 3	" "

G. PIGOTT

March 1972

004
780005



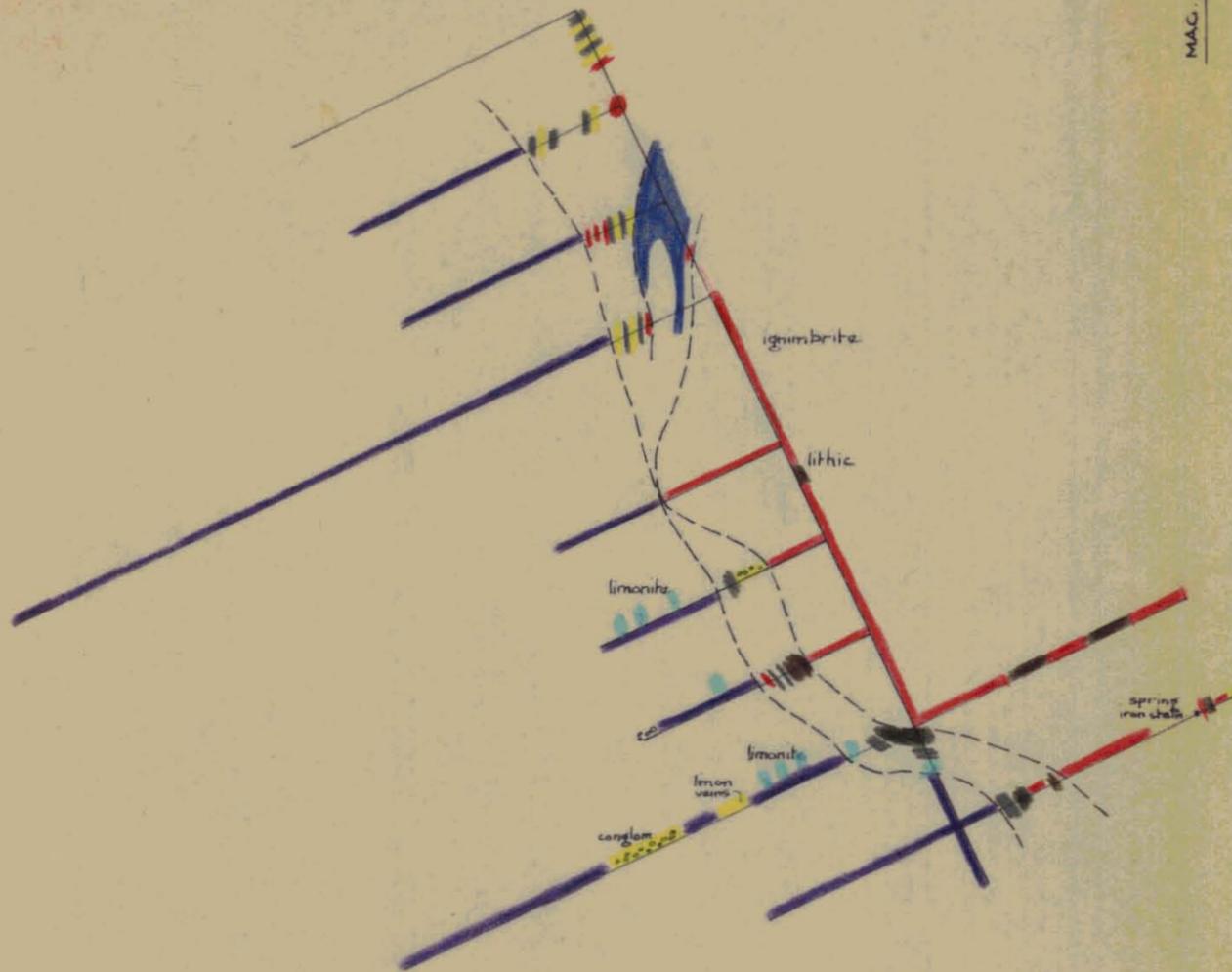
COMSTAFF PROPRIETARY LIMITED

HUSKISSON GRIDS

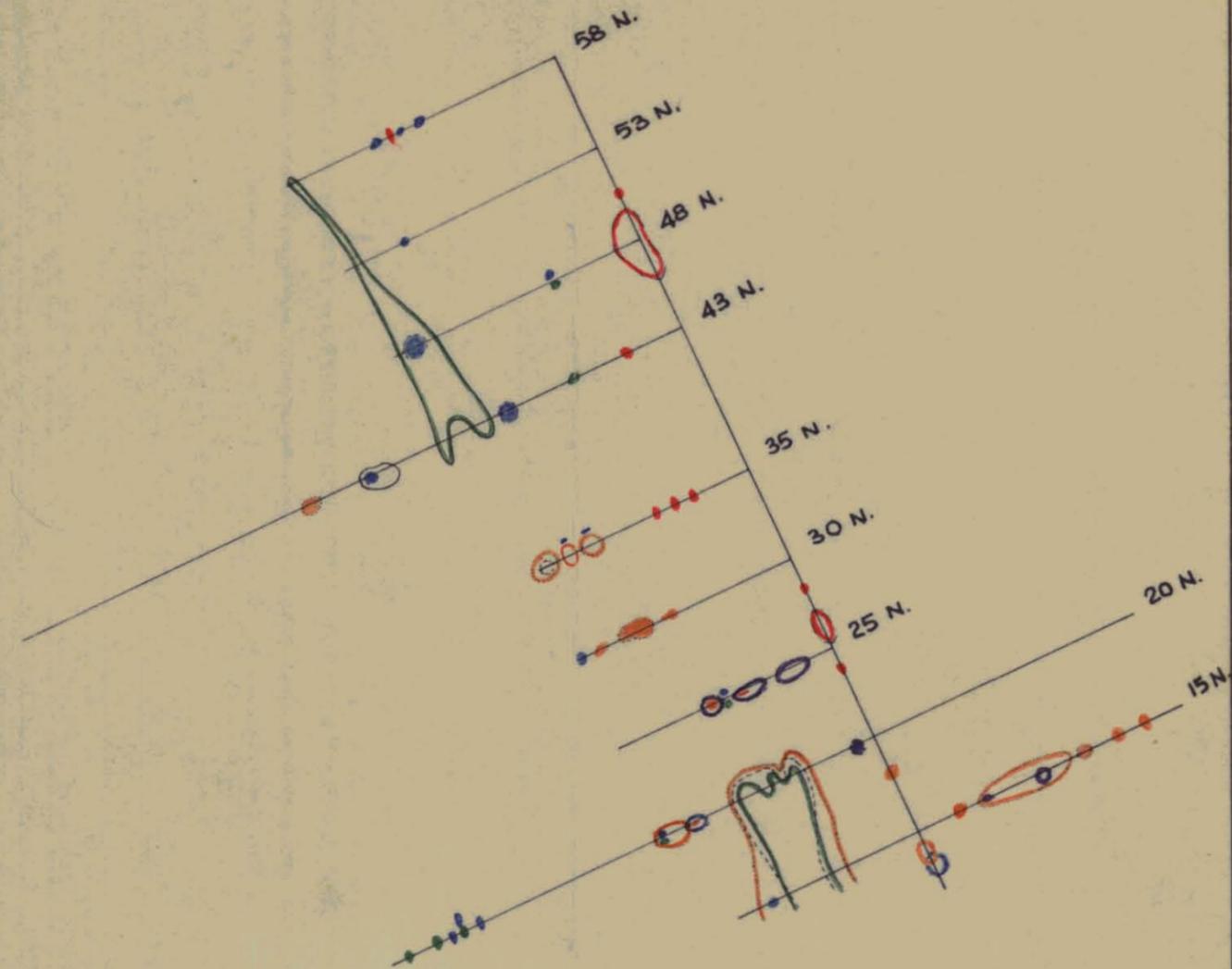
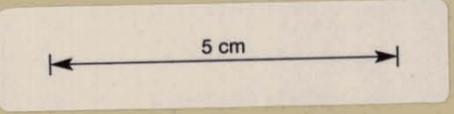
LOCATION PLAN - SUMMER 1972

DRAWN GC.	COMPILED	SCALE 1:250,000.	TAS-2-306
--------------	----------	---------------------	-----------

MAG. NORTH



- SANDSTONE/QTE
- GREY SHALE
- BLACK SHALE
- GREYWACKE
- GABBRO
- SERPENTINITE
- TUFF
- LIMONITE



- Pb.
- Zn.
- Cu.
- Ni.
- Co.

COMSTAFF PROPRIETARY LIMITED		
HUSKISSON GRIDS		
SUMMER 1972		
GRID 1 GEOLOGY/ANOMALIES		
SCALE 1: 10000	DWN G.E.C.	No TAS. 2-290

006

780007

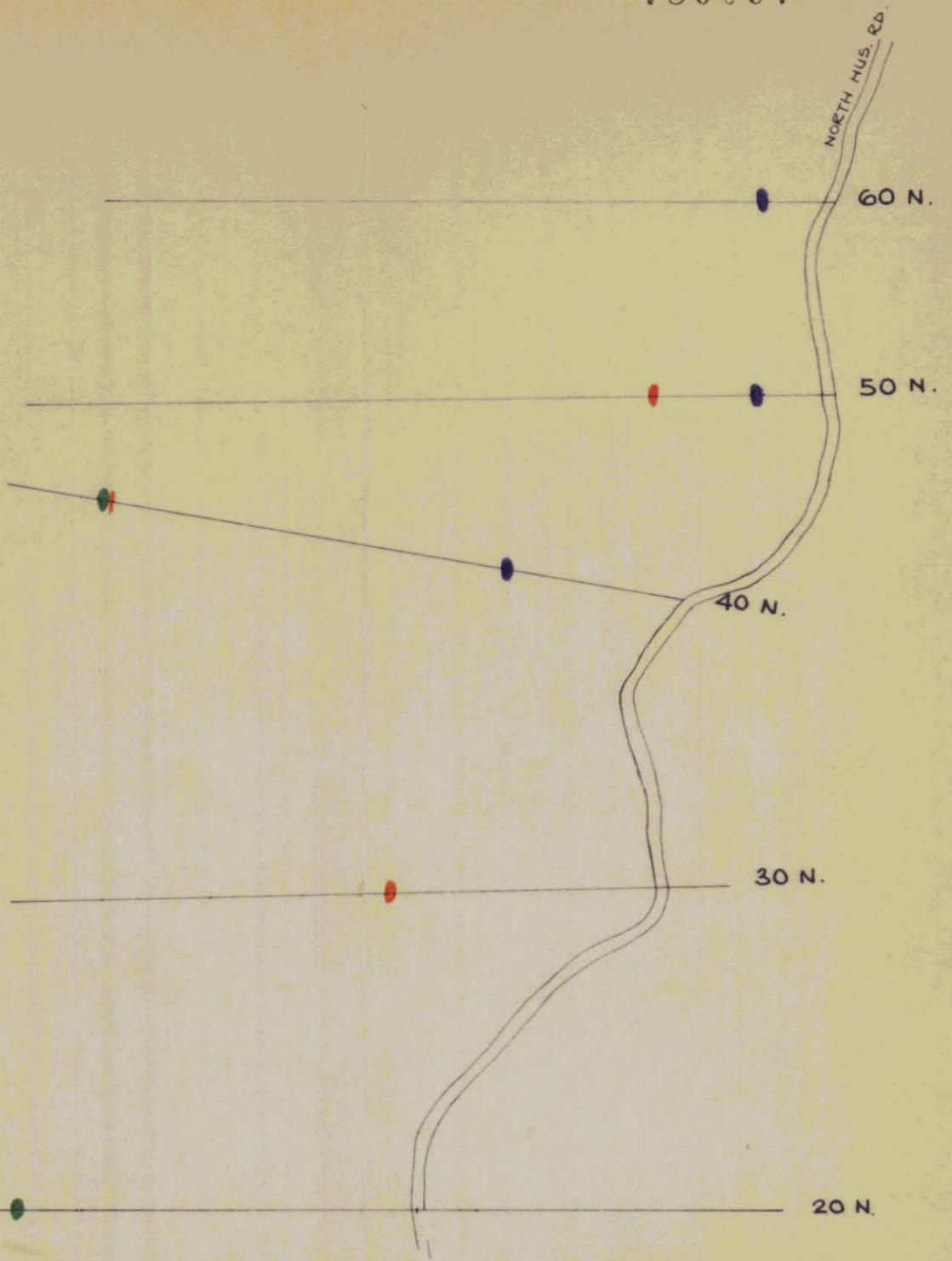
NORTH MUS. RD.

MAG. NORTH



- SANDSTONE/QTE
- GREY SHALE
- BLACK SHALE
- SILTSTONE
- MUDSTONE
- GREYWACKE
- TUFF.

- Ni.
- Pb.
- Zn.



COMSTAFF PROPRIETARY LIMITED		
HUSKISSON GRIDS		
SUMMER 1972		
GRID 2 GEOLOGY/ANOMALIES		
SCALE 1:10000	DWN G.E.C.	Nº TAS. 2-291

007

780008

distinct vegetation change.

seric. mica.

limon.

hydrothermal
silic.

 SANDSTONE / QTE
 TUFF

recent conglom.

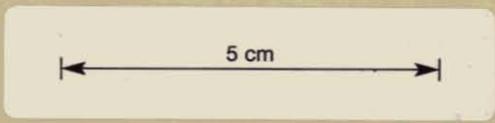
MAG. NORTH

20 E.

31 E.

42 E.

 Cu.
 Pb.
 Zn.



COMSTAFF PROPRIETARY LIMITED		
HUSKISSON GRIDS		
SUMMER 1972		
GRID 3 GEOLOGY / ANOMALIES		
SCALE 1:10000	DWN. G.E.C.	INP TAS. 2-292



1969 - 1970

**CHESTER
SILVER FALLS
PINNACLES**

M. Ewert

85-2392

ANGLO AMERICAN CORPORATION (AUSTRALIA) LIMITED

AMG REFERENCE POINTS ADDED

AN ASSESSMENT AND REVIEW OF THE CHESTER
SILVER-FALLS AND PINNACLES AREAS (162-170)

	JUN 1985	
	DEPT. OF MINES	
	6000/85	

ABSTRACT

In an attempt to provide an overall picture and a composite assessment, the areas of Chester, Silver-Falls and Pinnacles are regarded as one.

The history and past exploration of the area are described briefly. The geology is dealt with in more detail and includes a description of the known ore-bodies.

This season's programme is outlined and conclusions drawn where possible.

GENERAL

The area under consideration is located 15 miles to the south of Waratah (see Map No. 1). From the Murchison Highway, good graded tracks run to Chester (Camp Charlie), Pinnacles Mine and Shale Basin and to the North Pinnacles area (Lynch Creek).

The climate and vegetation of the area are nauseatingly typical of the North West corner of Tasmania.

HISTORY

In 1890, silver-lead ore was discovered at Ross Creek, a tributary of the Muskisson River. The discovery was made by Mr. Jack Lynch and was named by him the Silver-Falls Mine. Owing to the remoteness of the area, there was no possibility of the ore-body becoming a payable mine at that time.

/2. Mining int rests.

Mining interests in the area remained dormant until in 1896 two men named McGuinness discovered copper-zinc-lead ore at the Pinnacles Hills.

Soon after, the large pyrites deposit now known as Chester, was located at Mount Kershaw by F. Kershaw and M. Sanderson. In the same year, alluvial gold was discovered in Shong's Creek.

Subsequently, several small companies were formed to work their Pinnacles holdings. The results of this work were considered unsatisfactory and active operations ceased.

By 1900, the Esau Bay Railway linked the North West mining areas to the seaport of Burnie. This improved access gave impetus to the mining/exploration activities of the area.

In 1908, the Mount Lyell Company began exploratory work at the Chester ore-body. From 1909-1913, inclusive development and exploration led to the mining of a considerable tonnage of first-grade lump-ore carrying over 37% sulphur. In 1913, the working costs had increased so much, owing to the necessity of removing large quantities of second grade material to obtain first grade ore, that active operations were discontinued.

Subsequent attempts at profitable development have failed, both at Chester and the Pinnacles Mines.

Intensive exploratory work in the area was resumed in 1956 by R.T.A.E. A gravity survey over the Chester ore-body indicated 2½ million tons of 40% sulphides with the possibility of a second ore-body of 1.8 million tons to the west. These results were not confirmed by E.M. techniques but the latter together with Afmag results suggest a further conductor north east of Chester.

/3. After 1962,

After 1962, Mining Exploration Pty. Ltd. continued work in the area but do not appear to have made any detailed studies of Chester other than fly an Aomag survey which failed to reveal the ore-body.

In the Pinnacles area, between 1956 and 1962, R.T.A.E carried out extensive geophysical, geological and geochemical surveys. Geophysical techniques included E.M., magnetics and gravity. Neither these, nor the geochemistry gave any indication of the known lodes.

From 1963 to 1968, M.E.P.L. geochemically sampled across the Pinnacles lodes. Some indication of the presence of the lodes was obtained but not their continuity or extent. After 1968, Comstaff Pty. Ltd. made a further intensive study of the area (see later).

GEOLOGY (see Map No 2)

The geology of this area is dominated by two structural features:-

- (i) The Que Syncline
- (ii) The Owen Rift Fault

and by three readily distinguishable successions,

- (a) the overlying shales, tuffs and greywacke sequence of probably Middle to Upper Cambrian age.
 - (b) the underlying Reid Volcanic Group of Lower to Middle Cambrian age,
- and (c) the separate sedimentary sequence to the west of the Owen Rift Fault.

/4 (1) The Que Syncline.

(1) The Que Syncline

The syncline plunges 15° - 20° to the north north east and has a steeper eastern limb. It may be observed clearly on aerial photographs, its nose being just north of the Pinnacles Mines. It has two major stratigraphic components in this area, the overlying Middle to Upper Cambrian sequence and the underlying Reid Volcanic Group. The western limb of the syncline is truncated by the Owen Rift Fault.

(ii) The Owen Rift Fault

This fault trends approximately north-south throughout the area and is a zone of shearing separating the formations of the Que syncline from those to the west. The fault has been traced as far north as the Silver-Falls ore-body and indeed it seems to be a structural control on the latter.

The fault has not been observed, neither on aerial photographs nor in the field, to the north of Silver-Falls and in fact photo-interpretation suggests its displacement by a north west - south east trending fault - this is highly tentative. In any case, it does not appear to be related to the zone of shearing observed in the Coldstream (see Coldstream report, 1969-70). Much more detailed mapping is necessary, in the area between the Que River and Silver-Falls, if the position of this fault is to be determined accurately.

However, it does seem certain that the Reid Volcanic Group terminates at Silver-Falls by faulting-out against the Owen Rift Fault - no volcanics were observed in Ross Creek. Photo-interpretation supports this hypothesis and indicates a Coldstream-type succession (greywacke-mudstone sequence) to the north.

/5. In the Chester.

The latest mapping (Everett 1970) shows the ore-body to be along the Owen Rift Fault (see earlier).

No accurate assaying has been done but a small sample gave Pb. 9.4%, Zn. 1.7%, Ag. 14 dwt 9gr/ton (McIntosh Reid).

It is believed that Electrolytic Zinc may have carried out a small drilling programme sometime between 1945 and 1955. None of these results have been made available to Comstaff P/L.

A cursory personal examination of the Silver-Falls area failed to reveal any massive sulphides but merely a disseminated deposit of no apparent economic interest.

(C) LYNCH CREEK PROSPECT

2½ miles west of the Pinnacles Mines is a small lode of Pb. and Ba. discovered by McIntosh Reid. This is distinct from the porphyroid belt of mineralisation to the east but is probably continuous with the "Just-in-Time" prospect to the north.

No exploratory work of any description has been undertaken over or adjacent to the lode.

(D) STRONGS CREEK GOLD DIGGINGS.

Strong's Creek is a small tributary of the Marianoak River and has its source on the west side of the Pinnacles Hills.

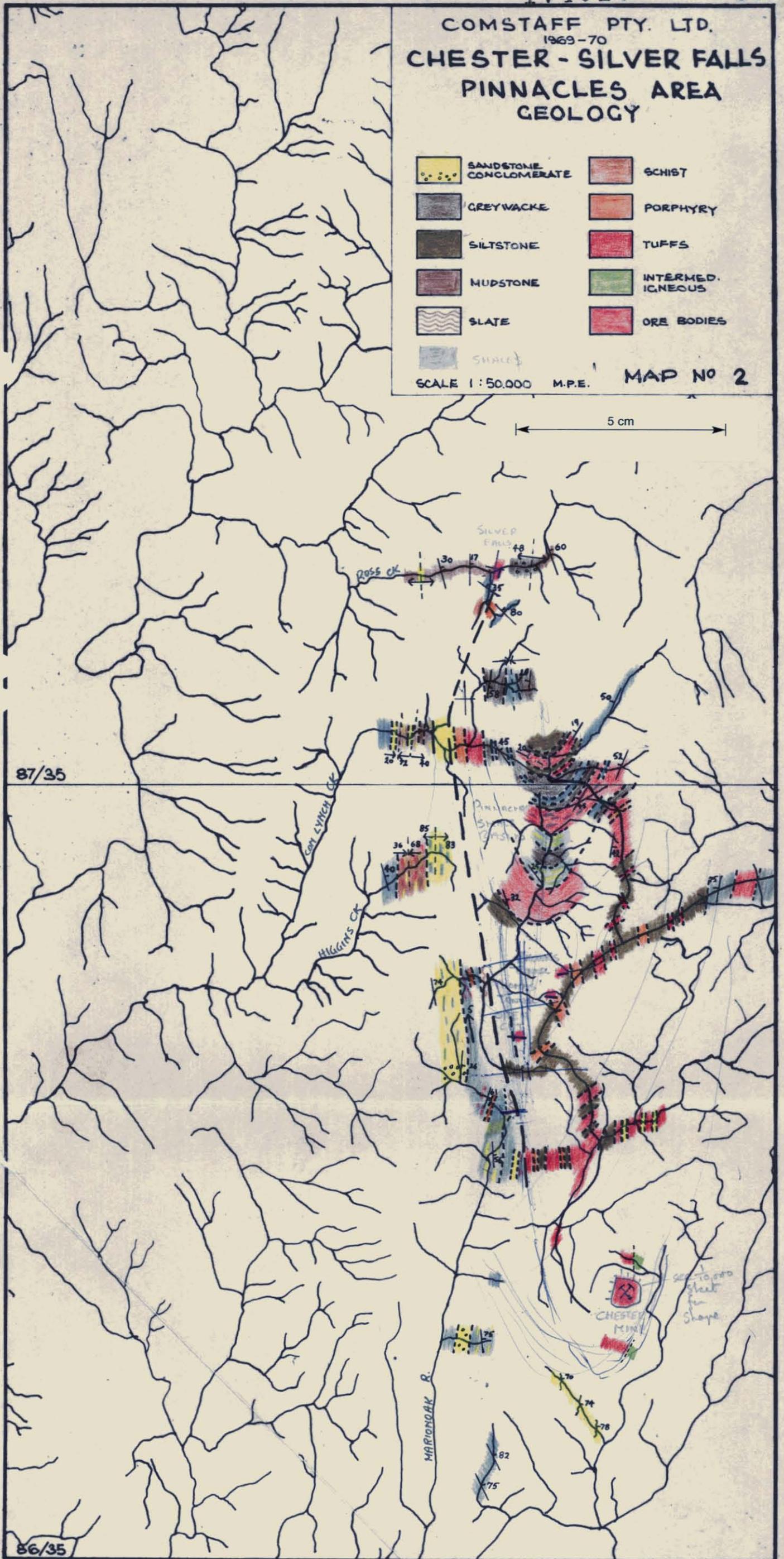
The gold-bearing wash is confined within narrow limits to the Marianoak valley. The gold is undoubtedly near its source and is probably a disintegration product of the Pinnacles ore-bodies which are known to contain appreciable quantities of gold. The alluvial gold is associated with galena, pyrites, chalcopyrites and chromite.

COMSTAFF PTY. LTD.
 1969-70
**CHESTER - SILVER FALLS
 PINNACLES AREA
 GEOLOGY**

- | | | | |
|---|------------------------|---|-------------------|
|  | SANDSTONE CONGLOMERATE |  | SCHIST |
|  | GREYWACKE |  | PORPHYRY |
|  | SILTSTONE |  | TUFFS |
|  | MUDSTONE |  | INTERMED. IGNEOUS |
|  | SLATE |  | ORE BODIES |
|  | SHALE | | |

SCALE 1:50,000 M.P.E. MAP NO 2

5 cm



000

165001

DOC. NO: 11824

QAC

D. DIR.	A.O.	C.G.	E.O.	REGISTRATION
	19 JUN 1985			E & IL
	DEPT. OF MINES			
REF. No.	6030/85			

PROJECT NAME: COMSTAFF PROPRIETARY LIMITED

TITLE: PROPOSALS FOR FURTHER WORK
IN THE WILL O'WISP (CAB) AREA

OF EL 5/63

Area 2

MICROFILMED

AREA NAME/S, STATE 1:250,000 SHEET NO/S & COORDINATES:

COMMODITY/IES:

TEXT PAGES NO: 8
PLAN NOS: See List of Plans

TABLE NOS: -

APPENDICES: -

AUTHOR/S: M P EVERETT

DATE: September 1984

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

Geology

Since the WOW/CAB soil geochemical responses have, to a large extent, already been tested by previous drilling and in view of the muted geophysical responses likely to be encountered while searching for Pb/Zn based mineralisation, much of the forthcoming exploration thrust must be of a direct geological nature.

A wealth of previously acquired geological data exists for the WOW/CAB area and environs. These data must be evaluated and synthesised so that an understanding can be obtained not only of the significance of the local WOW/CAB geology but also of its regional and basinal setting. Selective geological traverses in the field will be required to tie-in the mapping of past workers. The emphasis will be on evaluating the stratigraphy and palaeo-depositional environment of the area as well as defining the broad structural controls.

Whilst specific models for mineralisation have been proposed, careful geological appraisal of the area will ensure that no other styles of mineralisation are overlooked.

In addition to the above, and more specifically, check logging of the old drill holes will continue while the location of the JUST-IN-TIME Pb/Ba prospect will be sought and then sampled and mapped. There appears to be a north-south trend of Pb/Ba mineralisation from WOW/CAB in the north, through the JUST-IN-TIME prospect to the Lynch Creek Pb/Ba prospect to the south and now outside the area of EL 5/63.

Geophysics

GENIE EM traversing will be carried out at 150m spacing along CAB grid line 5700N in order to obtain better definition on a previously located weak anomaly at station 5820E. Lines 5600N and 5800N will be similarly checked and the CR3, CR4 and CR 6 drill profile will be traversed as an orientation exercise across known sub-surface geology.

It is proposed that all the previously acquired geophysical data (SP, magnetics, CRONE EM, GENIE EM) be reviewed with a higher level of geological input and in the context of the proposed models of mineralisation.

Geochemistry

Regional heavy concentrate sampling will be carried out across the Pre-Cambrian block in areas not previously sampled satisfactorily. The existence of, as yet unlocated, Pb, Ba, Au or Sn anomalies will be checked by this method.

Although their source may be sub-basaltic gravels, the tin anomalies in Slippery Rock Creek will also be followed-up by heavy concentrate sampling.

OPEN FILE

MICROFILMED
FICHE No.013606 -07

95-3125

95-3125

SIPA EXPLORATION NL

PIEMAN, TASMANIA
(EL29/91)

ANNUAL REPORT

EL 29/91	
17 MAY 1995	
SEE FOLIO 7B	

95-3725.

Author: Dr Peter Morant
Date: October 1994
Tenement: EL29/91
Holder: A J Hosking (100%)

INTRODUCTION

The Pieman tenement, Exploration Licence 29/91, was granted to AJ Hosking for up to five years from 29 May 1992. The tenement, located to the near north-northwest of Rosebery in northwest Tasmania, covers about 23.5 km² of late Precambrian to Cambrian rocks.

Sipa Exploration NL entered an agreement with AJ Hosking early in 1994 whereby Sipha may earn up to a 100% interest in EL29/91. Exploration by Sipha up to 28 April 1994 is documented in the 1993 Annual Report on EL29/91 (Sipa Exploration NL, 1994).

This report documents two weeks of field reconnaissance on EL29/91 and literature research at Tasmania Development and Resources by Dr Peter Morant for Sipha in May 1994. Geological traverses were completed mainly along tracks and major creeks (Dwg 1507). Reference samples (43) of sedimentary and volcanoclastic rocks were collected from within and adjacent to EL29/91 (locations on Dwg 1507) but have not been submitted for analysis or thin sections. Representative samples of mineralisation from the nearby Pinnacles, Chester and Silver Falls prospects were also collected.

The area of EL29/91 was previously explored for base metals by CRA (1950's), Comstaff (1960's to mid-1970's), Asarco (mid-1970's), Aberfoyle and Shell (mid-1970's to 1988). The exploration programmes by Aberfoyle and Shell are summarised by McNeill (1988) and Hosking (1993).

GEOLOGY

The following discussion is based mainly on the field reconnaissance in May 1994 (Dwgs 1506 and 1507) and the 1:25,000 mapping of the Geological Survey of Tasmania (Corbett and McNeill, 1986).

The Pieman tenement is covered by residual soils (~70%) and glacial deposits (~30%). Outcrop is mainly limited to creek beds (generally fresh) and ridges/spurs (generally very strongly weathered). Some of the best exposure is provided in road cuttings, although these too are rapidly weathered and concealed by vegetation.

The hard-rock geology of the tenement can be subdivided into three structural-stratigraphic domains, separated by the north-striking Rosebery and Bobadil faults (Dwg 1506). These domains differ markedly in their stratigraphy and potential for VHMS mineralisation. The metamorphic grade is very low to low; Phanerozoic rocks are typically massive to weakly foliated and folded about upright structures, whereas Precambrian (?) rocks are typically more complexly deformed.

The eastern domain, east of the Rosebery Fault, only crops out in the extreme northeast corner of the tenement (Dwg 1506). Coarse volcanoclastic breccia (including quartz, feldspar and porphyry clasts) is interbedded with carbonaceous mudstones (assigned to the Dundas Group), which appear to conformably overlie the Central Volcanic Complex in the Pinnacles - Burns Peak area, farther to the east. This domain includes the Pinnacles and Chester VHMS prospects, 2 km east of the Pieman tenement, but the very small area (~0.5 km²) of these rocks in EL29/91 and moderate easterly dip on the Rosebery Fault, severely limit its exploration potential.

The central domain comprises lithic sandstones, mudstones and polymict conglomerates, which generally dip and young to the east to northeast (Dwg 1506). Chert, sedimentary and volcanic clasts abound in the conglomerates, whereas the sandstones include detrital mica and chromite. This domain has previously been interpreted to include components of the Cambrian Dundas, Huskisson and Rosebery Groups (Brown, 1986). In EL29/91 it does not appear to contain volcanic rocks, or volcanoclastic rocks derived from a juvenile volcanic terrain, and is therefore of low prospectivity for VHMS mineralisation.

The western domain includes multiply-deformed meta-sedimentary rocks of the Precambrian (?) Oonah Formation, which appear to be structurally interleaved with essentially undeformed, west-younging, mafic-derived, turbiditic sedimentary rocks of the Eocambrian Crimson Creek Formation (Dwg 1506). These sequences are older than the Mt Read Volcanics and regionally are not known to contain VHMS or significant gold mineralisation.

MINERALISATION

No new occurrences of mineralisation in the Pieman tenement were discovered during the geological reconnaissance in May 1994.

Three Pb-Ba±Ag prospects were reported by Reid (1918) from within and immediately north of the Pieman tenement (Dwg 1506). The Lynch Creek prospect was reported as comprising Pb-Ba mineralisation in the bed of Lynch Creek, but was not located either during this reconnaissance or by previous exploration programmes. It may be similar to the structurally-controlled Just-in-Time barite occurrence 2 km north of the tenement. Minor Pb-Ag-Ba mineralisation at the intensively explored Silver Falls prospect, 1.5 km north of the tenement, is hosted by volcanoclastic felsic breccia adjacent to the Rosebery Fault. This mineralisation extends south across the extreme northeast corner of the Pieman tenement.

The Salmon's Lode prospect, reported by Reid (1918) as occurring about 1.5 km south of EL29/91, is in a mining tenement currently held by Pasminco. Two north-striking parallel lodes of Zn-Pb-Cu mineralisation are hosted by calcitic schist (Reid, 1918), within the central structural domain between the Bobadil and Rosebery Faults. Salmon's Lode was not visited during the field reconnaissance and it is not clear whether mineralisation is syngenetic, or if the host rocks can be correlated north into EL29/91. Brown (1986) interpreted that the now-named Bobadil Fault bifurcates near the southern margin of EL29/91, with the eastern branch extending beneath the valley of the Marionoak River to the Rosebery Fault in the Burns Peak area (Dwg 1506). This interpretation would severely limit the potential for mineralisation in the Pieman tenement along strike of Salmon's Lode. ← !!
Little evidence.

Minor sphalerite-bearing veins were discovered in the south of EL29/91 (the Bastyan Dam Grid prospect) during construction of the access road to the Lower Pieman Dam. The veins and minor pyritic alteration are hosted by interbedded sandstones and mudstones, less than 100 m east of the interpreted position of the Bobadil Fault. Minor disseminated and vein-hosted sphalerite, galena, chalcopyrite and pyrite were intersected in the three diamond drill-holes at this prospect (Dwg 1506). Lead isotope ratios for galena samples from drill-hole MO-1 were interpreted by the CSIRO to be inconsistent with the lead having been remobilised from a Cambrian massive sulphide deposit (Carr & Gulson, 1985). Two populations of lead isotope ratios were recognised, which relate to upper Precambrian (basement) and Devonian (metamorphic) lead. Geophysical aspects of the Bastyan Dam Grid prospect are discussed below.

350001

MICROFILMED
FICHE No. 014096

Exploration Licence 29/91

Final Report

Andrew H White
August 1996

EL29/91

see file EL29/91 PT2
folio 6

96-3907

FINAL REPORT EL 29/91
GOLDEN REEF ENTERPRISES
A H WHITE

Introduction:

Exploration Licence 29/91 covers about 23.5 km strike length of Dundas Formation on the east, separated from Crimson Creek Formation on the west by the Bobadil Fault which strikes more or less north south through the centre of the tenement. PreCambrian Oonah Formation occurs in the north west corner of the tenement.

The area of EL 29/91 was previously explored for base metals by CRA(1950's), Comstaff (1960's to mid 1970's), Asarco (mid 1970's), Aberfoyle and Shell (mid 1970's to 1988), and Sipa Exploration NL (1993-4). The exploration programmes by Aberfoyle and Shell are summarized by Mc Neill (1988) and Hosking (1993). The EL was taken up by A J Hosking in 1991 and transferred to Golden Reef Enterprises Pty Ltd in September 1995.

Some geophysical surveys including IP, gravity, Utem, Dighem, CSAMT and magnetics have been carried out in parts of the EL, and three diamond drill holes have been completed for a total of 1318m to test EM anomalies, without finding significant base metal sulphide mineralization. The EL was taken up by Golden Reef Enterprises Pty Ltd as part of a reconnaissance program searching for gold in early Palaeozoic terrains in eastern Australia, but was not renewed because it did not fit with the company's present exploration strategy.

Location and access:

The location of EL29/91 is shown in Figure 1. The south eastern corner of the EL is 4 km north west of Rosebery.

The southern part of the EL is crossed by the Pieman Road and the central northern part is accessible by a track which leaves the Murchison Highway in the vicinity of the Pinnacles Mine. Access to the northeastern corner is gained by a track to the Silver Falls mine. Apart from the Pieman Road and the tracks, access to the EL is difficult, since it is mostly covered by dense scrub or forest. The Marionoak River affords reasonable foot access, but otherwise the normal access problems for exploration on the Tasmania west coast apply to the licence area.

Previous exploration:

The licence area has been covered by quite thorough first phase exploration of mapping and geochemical sampling by Aberfoyle and Billiton. This work outlined a series of base metal stream sediment anomalies more or less along the Bobadil Fault (Figure 2), most of which remained untested. Considerable reliance was placed on the ability of electrical geophysical prospecting methods to support or rule out anomalies as possible drilling targets, and only one geochemically anomalous area has been tested by drilling.

350004

370 000mE

380 000mE

5 390 000mN

Silver Falls

Launceston ●

HOBART

TASMANIA LOCATION MAP

Higgins Creek

Baco Road

Browns X

Pinacles

Chester X

Pieman Road

Lake Roseberry

5 380 000 mN

Huskisson

Pieman Road

EL 29/91

Salmons Lodes

Lake Pieman

Rosebery

ROSEBERRY

HIGHWAY

MURCHISON

X Renison

5 cm

5 km.

GOLDEN REEF ENTERPRISES P/L

EL 29/91

TASMANIA
LOCATION MAP

AUTHOR A.W.

DRAWN C.J. 8/96

FIGURE 1

Aberfoyle carried out Pb isotope studies of the minor galena vein mineralization found in diamond drill hole MO-1 at the Bastyan Dam prospect (Carr and Gulson, 1985). These studies indicated that the lead isotope ratios were inconsistent with the lead having been remobilized from a Cambrian massive sulphide deposit. Two populations of lead were recognized; one from a possible PreCambrian source, and the other from a Devonian source.

Geophysics:

The Licence has been covered by a significant amount of geophysical exploration. Aberfoyle covered the area in 1978 with an airborne EM survey (flown by Georex using a McPhar H400 dual frequency EM system at 150m line spacing and bird height of 80m). Billiton re flew the area in 1981 with a Dighem AEM system at 200m line spacing and bird height of 36m to provide better data in areas where terrain clearance had been excessive in the previous survey. Both surveys detected a low resistivity zone about 2km west of Bastyan Dam.

Billiton subsequently carried out ground Utem, gravity and magnetic surveys over the above area of low resistivity, and there is a regional magnetic map of the district which indicates a north trending magnetic ridge just west of the zone of low resistivity.

Structure and geophysics:

The Bobadil and Rosebery Faults are shown on current geological maps as generally trending north south. Geophysical investigations by Shell in the Bastyan Dam prospect area were interpreted by Shell personnel (Smyth, 1983) to indicate north south trending gravity features, but their map (Figure 3) shows a north west striking inferred fault and parallel EM anomalies, and a north north west trending IP anomaly.

A reinterpretation of this geophysical work indicates that there is a valid alternative, namely a set of north striking faults sub parallel to the gravity anomaly (Figure 4). If continuity of EM anomalies from one grid line to the next is not assumed, it is valid to interpret the anomalies as being spatially closely associated and aligned with the faults. This does not solve the conflicting north east gravity trend which crosses the foliation and newly interpreted fault trends. The assumptions about the EM anomalies are not certain without more closely spaced data, and it is possible that these are also discordant with both the faults and the gravity. A major fault between the window of Rosebery Group and the felsitic tuffs to the north west helps explain the 90° difference in strike of the two formations.

The divergence of strike of foliation in the Rosebery Group sediments in the vicinity of the Bastyan Dam suggests that the structure of these sediments is quite complex, and this would also mitigate against a single, simple explanation of the geophysical data. Because of the extensive overburden of glacial debris and alluvial slope wash, unravelling the structure would be an expensive exercise, but one that may need doing before electrical

geophysical data can be properly interpreted. This conclusion was one of the major reasons for Golden Reef Enterprises' decision not to apply for renewal of the licence.

Mineralization:

The exploration licence area contains Pb-Ba mineralization at the Lynch Creek prospect (which was not located in this program) and stream sediment geochemical sampling carried out by Aberfoyle and Shell between 1975 and 1985 identified several first order base metal anomalies along the Bobadil Fault (Figure 2). Some follow up work was done to test these anomalies but no encouraging results were obtained. The Dundas Group which is generally considered the most prospective unit in the district for VHMS type deposits occurs in such a small area, and is likely to have such a small section preserved above the Rosebery Fault, in the far north east of the licence, that it was not investigated by the present licence holder or previous holders.

The main area of interest in the licence has been the window of mineralised rock exposed in the Pieman Road 100m west of Marionoak River, named the Bastyan Dam prospect in previous Shell investigations. Here minor pyrite / pyrrhotite / sphalerite vein mineralisation is hosted by interbedded black shale, strongly pyritic in bands up to 5cm wide, and greenstone - chlorite altered andesitic greywacke.

A shallow drill hole failed to find anything more than a repetition of the minor sphalerite veining, and the two deep diamond holes (MO 2 & 3) drilled to test a deep conductor at Bastyan Dam intersected graphitic black shales, which were concluded to be the likely source of the EM anomaly (Morant, 1994). Samples from the first drill hole, MO-1 were examined by Fander (1982) who observed that the sphalerite in thin banded intersections of sulphides in the core was low iron sphalerite. Fander also suggested that the sulphides were of syngenetic origin, with an epigenetic overprint due to tectonism and remobilization.

The intriguing aspect of the Bastyan Dam Prospect is that a spring issues from the mineralised rock in the roadside drain, and the spring is depositing remarkable quantities of iron oxide on gravel and anything else in the drain, at a rapid rate (Plate 1). Sipa Exploration sampled sludge from the spring and this assayed 130 ppm Zn, 295 ppm Pb and 513 ppm Cu. In gross appearance the iron deposition from the spring is similar to the iron deposits in streams pictured downstream from the Currawong base metal deposit in Victoria, and Red Dog in Alaska.

Prospecting:

As Sipa Exploration noted in their report (Morant, 1994), the EL has not been prospected for gold. Golden Reef Enterprises P/L took the opportunity when offered to take up the licence to test for gold. A field reconnaissance was carried out, and the intense quartz veining and small scale silicification associated with the minor sphalerite mineralisation at

the Bastyan Dam prospect was the most promising potential gold host found. Stream sediments were panned in the Marionoak River upstream and downstream from the prospect, and four large rock chip samples collected of the quartz veined rock (presumed to be Rosebery Group). These same rocks were sample for base metals by Sipa Resources (Appendix 1). No visible gold was found in heavy mineral concentrates from the panning (using binocular microscope) and the highest gold assay from the samples obtained by Golden Reef Enterprises was 0.028ppm Au (Appendix 1).

Conclusions:

The area within the licence is regarded as being prospective for base metals. The sphalerite veining in pyritic/pyrrhotitic black shale host rocks at Bastyan Dam indicates that mineral bearing fluids have travelled through the system possibly in the Devonian. The opportunity exists for CSA style zinc lead replacement deposits in Dundas Group rocks in appropriate structural settings along the Bobadil Fault.

However, since evidence from scant outcrop and some shallow pits indicates that the structural geology of the area, especially the Rosebery Group, is quite complex, a search for structurally focused ore concentrations beneath extensive alluvial and remnant glacial cover, in densely vegetated terrain, is likely to be a long and expensive exercise. Fander's (1982) note that the sphalerite found in Billiton's MO-1 drill hole was low iron (and hence non conductive) may also indicate that any concentration of sphalerite is unlikely to be detected by electrical geophysical methods which depend on identifying conductors. The presence of probable syngenetic pyrite in black shale lenses, which may be faulted into Rosebery Group strata, further complicates the problem of how electrical geophysical prospecting methods might be used to see through the overburden and also discriminate conductors which host base metal sulphides.

The present licence holder is for strategic business development reasons not willing to pursue zinc lead prospects in this type of terrain and has therefore decided to withdraw from exploration of the area. Following the reconnaissance, the EL is not deemed highly prospective for gold.

References

Carr, G.R., and Gulson, B.L. 1985. Report to Aberfoyle Exploration Pty Ltd on the significance of lead isotopic compositions of samples from the Marionoak Prospect, western Tasmania. CSIRO Division of Mineralogy and Geochemistry Sydney Laboratory. Unpublished report.

Fander, H.W., 1982. Report CMS 82/10/5 - petrology of drill core samples from MO-1. Unpublished report to The Shell Co of Australia.

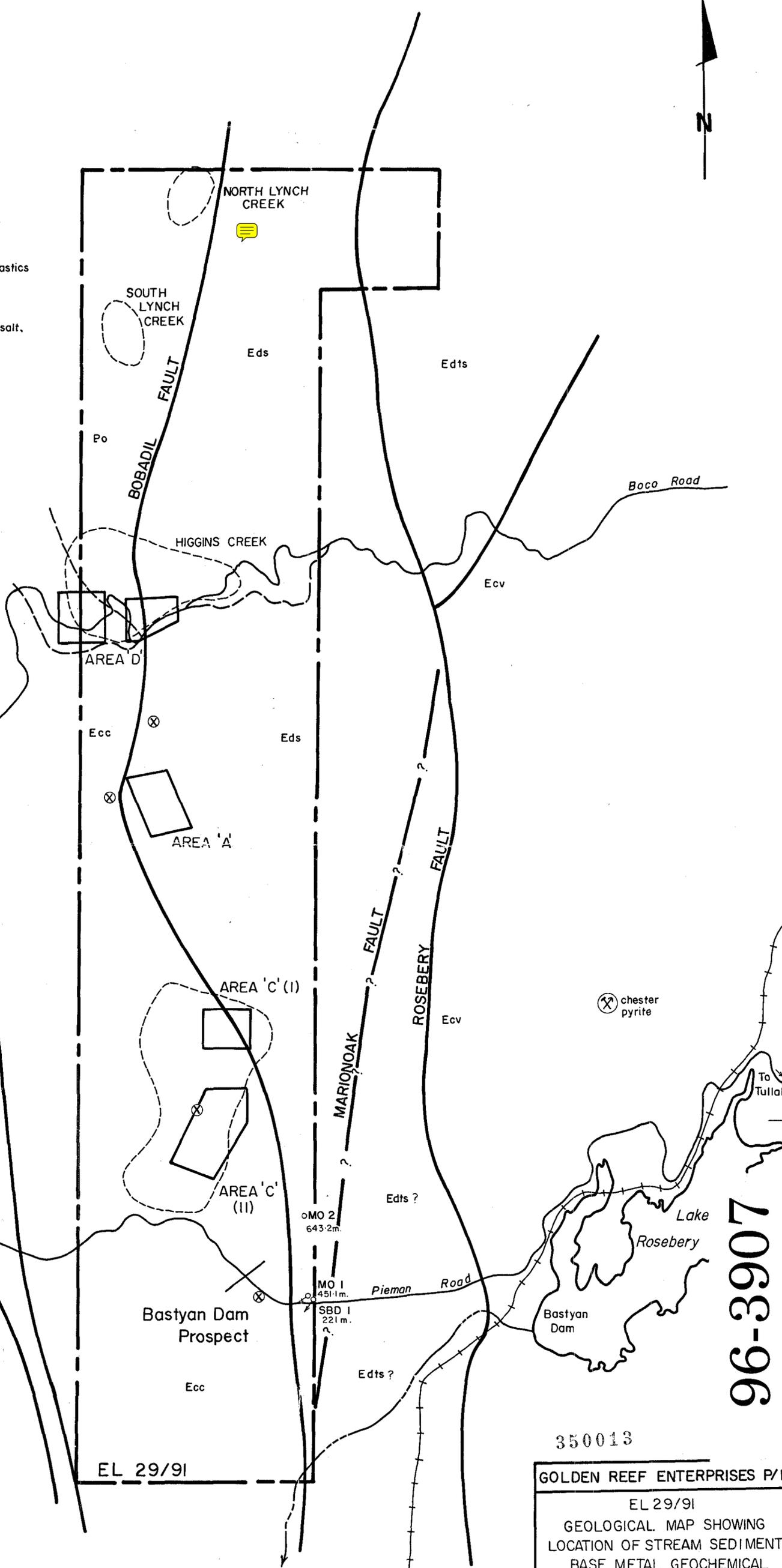
5 390 000mN

375 000mE

378 000mE

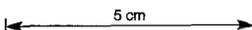
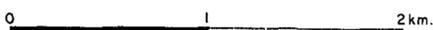
LEGEND

- Tb TERTIARY
Basalt
- Eum CAMBRIAN
Ultramafic intrusives
- Eds DUNDAS GROUP
Greywacke, siltstone & conglomerate
- Edts Interbedded tuffs & sedimentary rocks
- Ecv CENTRAL VOLCANIC COMPLEX
Felsic to intermediate volcanics & volcaniclastics
- Ecc CRIMSON CREEK FORMATION
Mafic-andesitic greywacke, muastone, basalt, conglomerate
- Pa PRECAMBRIAN
OONAH FORMATION
Quartzite, black slate
- Fault
- Fault (possible)
- Geological contact
- STREAM SEDIMENT BASE METAL
GEOCHEMICAL ANOMALIES
- Aberfoyle
- Billiton
- Dighern anomaly
- Prospect
- Mine
- Road
- Track
- Railway



5 380 000mN

SCALE 1:25000



96-3907

FINAL REPORT EL 29/91
GOLDEN REEF ENTERPRISES
A.H. WHITE

350013

GOLDEN REEF ENTERPRISES P/L

EL 29/91
GEOLOGICAL MAP SHOWING
LOCATION OF STREAM SEDIMENT
BASE METAL GEOCHEMICAL
ANOMALIES

Author A.W.	Drawn C. J. 8/96	FIGURE 2
-------------	---------------------	----------

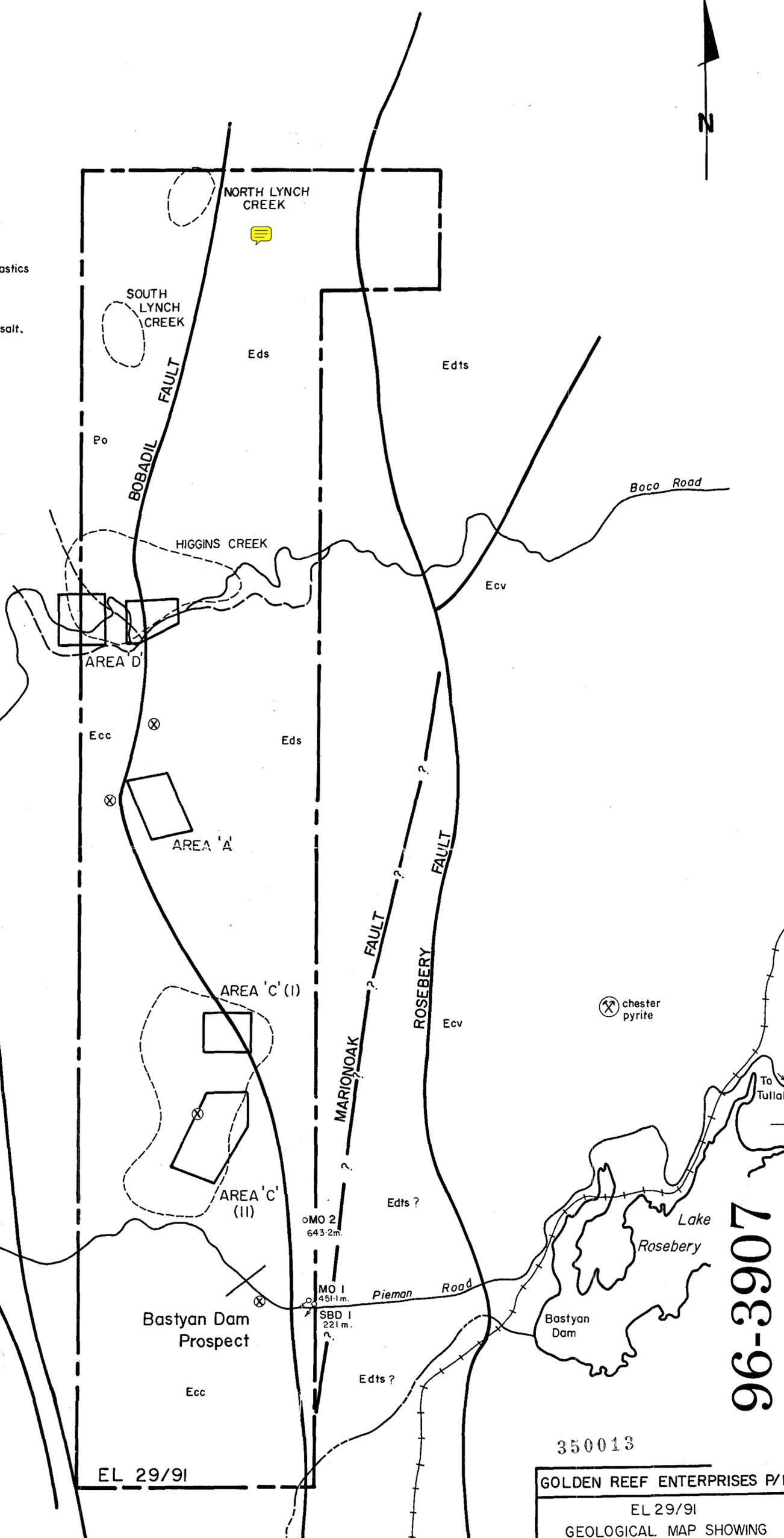
5 390 000mN

375 000mE

378 000mE

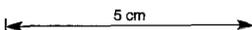
LEGEND

- Tb TERTIARY
Basalt
- Eum CAMBRIAN
Ultramafic intrusives
- Eds DUNDAS GROUP
Greywacke, siltstone & conglomerate
- Edts Interbedded tuffs & sedimentary rocks
- Ecv CENTRAL VOLCANIC COMPLEX
Felsic to intermediate volcanics & volcaniclastics
- Ecc CRIMSON CREEK FORMATION
Mafic-andesitic greywacke, muastone, basalt, conglomerate
- Pa PRECAMBRIAN
OONAH FORMATION
Quartzite, black slate
- Fault
- Fault (possible)
- Geological contact
- STREAM SEDIMENT BASE METAL GEOCHEMICAL ANOMALIES
- Aberfoyle
- Billiton
- X Dighern anomaly
- X Prospect
- X Mine
- Road
- Track
- ++ Railway



5 380 000mN

SCALE 1:25000



96-3907

FINAL REPORT EL 29/91
GOLDEN REEF ENTERPRISES
A.H. WHITE

350013

GOLDEN REEF ENTERPRISES P/L

EL 29/91
GEOLOGICAL MAP SHOWING
LOCATION OF STREAM SEDIMENT
BASE METAL GEOCHEMICAL
ANOMALIES

Author A.W.	Drawn C. J. 8/96	FIGURE 2
-------------	------------------	----------