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REPORT ON EXPLORATION LEASE 32/70

for Graham Roberts

August, 1970,
Geology Department,
University of Tasmania.

Survey by - Adrian W. Fleming,
Jonathan M. Knight.

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CONTENTS

- 1. INTRODUCTION
- 2. PREVIOUS WORK
- 3. FIELD WORK
- 4. DISCUSSION OF RESULTS

APPENDIX

- 1. GEOCHEMICAL ASSAY RESULTS
- 2. MINERAL RESOURCES MAP AND LEASE LOCATION
- 3. PIPUS RIVER GEOLOGICAL SHEET
- 4. LISLE: SOIL SAMPLE LOCATION MAP
- 5. ENTERPRISE: SOIL SAMPLE LOCATION MAP

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Maps

Pipers' river - In back of folder

1. INTRODUCTION

Geochemical sampling and geological investigation were carried out on Exploration Lease 32/70 for Graham Roberts.

Following a stream sediment survey conducted by Mineraux Pty. Ltd. in May 1969, and consultation with Mr. A.J. Noldart, Mines Department, Hobart, geochemical sampling was undertaken in an anomalous area indicated by that survey. The anomalous area, which is located in the Lisle Forestry Plantation, is readily accessible by Forestry Commission roads.

Geochemical sampling was also carried out at the abandoned Enterprise gold field.

The results from these geochemical surveys failed to define any anomaly.

2. PREVIOUS WORK

The stream sediment survey by Mineraux Propriety Ltd. indicated a high of 1.6% tin at the location of their sample number 91. It appears that this sample was taken at the junction of a creek and forestry road corresponding to the location of geochemical sample number JGR 40 (see map). This high value was verified by duplicate assay at that location. This was the only assay in the samples area with a value greater than 700 p.p.m. (see Mineraux Propriety Ltd., Geochemical Survey, Lilydale, Tasmania, May 1969).

3. FIELD WORK

The accessible areas of contact and metamorphosed Mathinna Beds were investigated to the extent permitted by existing outcrop. In the Lisle area the Mathinna Beds grade from siltstones to hard grey hornfels higher up Bessells Ridge. The well jointed metamorphosed Mathinna Beds are veined with quartz which shows some iron mineralisation along fractures.

In the area of JGR 40 there is outcrop of greyish metamorphosed siltstone striking E-W and dipping 45° N. The creek from which the high tin sample was taken carries a considerable flow of water. However it disappears approximately 300ft. up the hill which strongly indicates that it flows underground.

Elsewhere on the lease the only mineralisation observed was at Enterprise where quartz veins are found to contain rare blebs of molybdenite close to the granite contact.

Soil samples for geochemical analysis were taken in the Lisle and Enterprise areas. These samples were taken by hand auger from the B soil horizon at intervals of fifty feet (see maps 4 and 5). These intervals are marked with numbered seismic tape tied to pegs driven into the ground. At Lisle the sample grid used followed Forestry Commission access tracks which cross the regional strike at a high angle. To complete the grid a traverse was also cleared through the thick pine forest undergrowth. At Enterprise soil samples were taken on a zig-zag traverse along the granite Mathinna Beds contact.

The soil samples were assayed for copper, gold, tin and molybdenum by Geochemical and Mineralogical Laboratories Pty. Ltd.. The results are tabled in the appendix (1).

4. DISCUSSION OF RESULTS

The geochemical assay results tabled in the appendix failed to locate an anomaly at Lisle or Enterprise. In fact assay of a sample from the same location as the high tin sample proved by Mineraux resulted in only 6 p.p.m. As pointed out in the Mineraux report a stream sample assay of 16000 p.p.m. would require some tin mineral to actually be present in the sample. Since there is neither geological nor geochemical evidence of tin mineralisation at the surface the high value obtained by Mineraux is considered to be due to deeper mineralisation. The hypothesis of a deep seated mineral lode is a plausible one in view of the continual mining of alluvial gold for over 100 years in this area, during which time no mineral source has been discovered. The fact that the high tin value obtained by Mineraux was taken from a stream with a possible underground source supports this view. The low geochemical values obtained could therefore be due to a lack of surface outcrop of mineralised rock and thus little expression of mineralisation in the overlying soil.

Field evidence of mineralisation at Enterprise, i.e., molybdenum in quartz veins, was not reflected in the limited geochemical survey undertaken there. However only a very small area close to the granite contact, was covered by this survey. Further more intensive geochemical sampling would be necessary to establish the extent of mineralisation in the region of this contact.

It is recommended that further work should be carried out in this area in the form of an airborne geophysical survey followed by groundwork, and possibly drilling, in indicated anomalous areas.

APPENDIX 1

Geochemical Assay results in P.P.M.

SOIL SAMPLES

<u>Sample No.</u>	<u>Cu</u>	<u>Au</u>	<u>Sn</u>	<u>Mo</u>
JGR 1	18	x	4	x
2	24	x	6	x
3	42	x	10	x
4	32	x	6	1
5	44	x	10	2
6	38	x	6	1
7	26	x	4	x
8	48	x	10	1
9	24	x	6	x
10	10	x	4	4
JGR 11	-	-	-	-
2	18	x	8	x
3	28	x	6	x
4	52	x	6	1
5	30	x	6	x
6	44	x	8	2
7	22	x	8	x
8	40	x	6	2
9	13	x	6	x
JGR 20	34	x	4	1
21	60	x	6	2
2	40	x	12	1
3	16	x	6	x
4	38	x	7	1
5	28	x	8	x

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<u>Sample No.</u>	<u>Cu</u>	<u>Au</u>	<u>Sn</u>	<u>Mo</u>
JGR 6	14	x	6	x
7	20	x	6	1
8	22	x	10	x
9	20	x	6	x
JGR30	24	x	8	1
1	20	x	8	x
2	14	x	10	x
3	26	x	6	x
4	40	x	8	1
5	36	x	10	x
6	18	0.30	6	x
7	28	x	6	x
8	16	x	8	x
9	12	x	6	x
JGR40	22	x	6	x
1	24	x	6	x
2	18	x	4	x
3	62	x	16	4
4	46	x	10	2
5	28	x	10	1
6	18	x	8	x
7	12	x	10	x
8	8	x	6	4
9	24	x	8	x
JGR50	8	x	6	x
1	12	x	8	x
2	8	x	6	x
3	12	x	4	x
4	18	x	8	x
5	14	x	6	x
GJR56	38	x	10	3
7	58	x	8	4
8	20	x	4	x

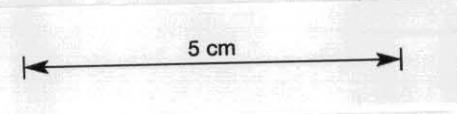
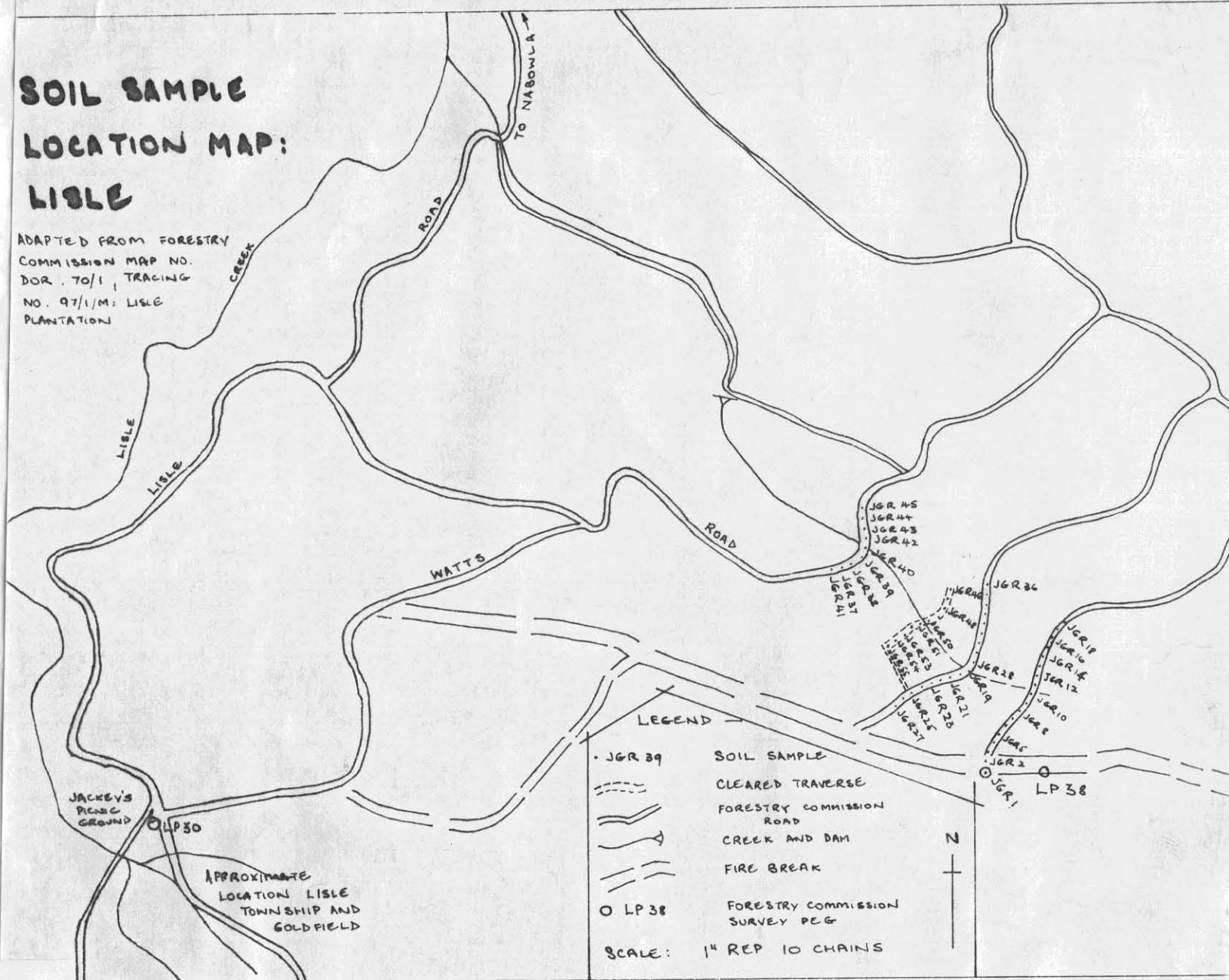
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<u>Sample No.</u>	<u>Cu</u>	<u>Au</u>	<u>Sn</u>	<u>Mo</u>
GJR59	16	0.32	6	x
60	16	x	8	3
1	42	x	10	x
2	44	x	12	x
3	58	x	10	6
4	42	x	10	4
5	38	x	6	x
6	26	x	6	x
7	54	x	6	x
8	22	x	4	x
9	36	x	6	x
GJR70	92	x	6	6
1	24	x	6	x
2	20	x	6	x
3	22	x	8	x
4	14	x	6	x
5	62	x	10	x
6	40	x	10	x
7	24	x	10	x
8	23	x	6	x
9	28	x	8	x
GJR80	40	x	8	x
1	28	x	14	x
2	16	x	12	1
GJR83	10	x	6	x

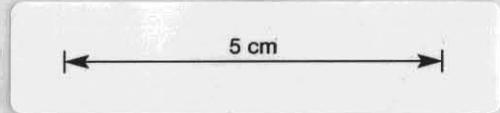
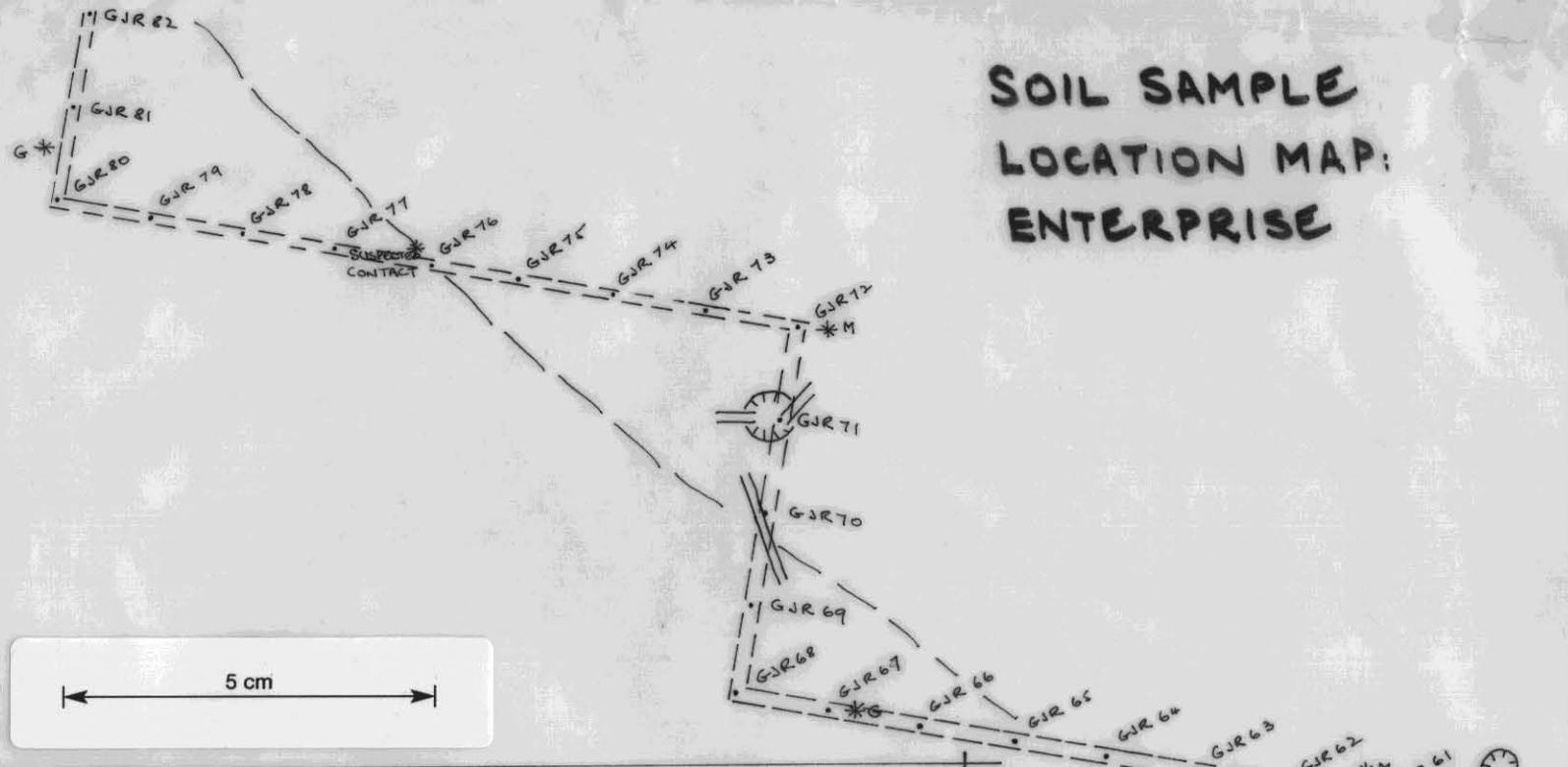
SOIL SAMPLE LOCATION MAP: LISLE

ADAPTED FROM FORESTRY
COMMISSION MAP NO.
DOR. 70/1, TRACING
NO. 97/1/M: LISLE
PLANTATION



SOIL SAMPLE LOCATION MAP: ENTERPRISE

APPENDIX
5.



- LEGEND -
-  CLEARED TRAVERSE
 -  SOIL SAMPLE
 -  ROAD
 -  TRENCH
 -  ADDIT
 -  INFERRED GRANITE MATHINNA CONTACT
 -  *G, M OUTCROP; GRANITE, MATHINNA

SCALE: 1" REP 100'

PIPERS RIVER

Geological Survey of Tasmania
Department of Mines—Hobart

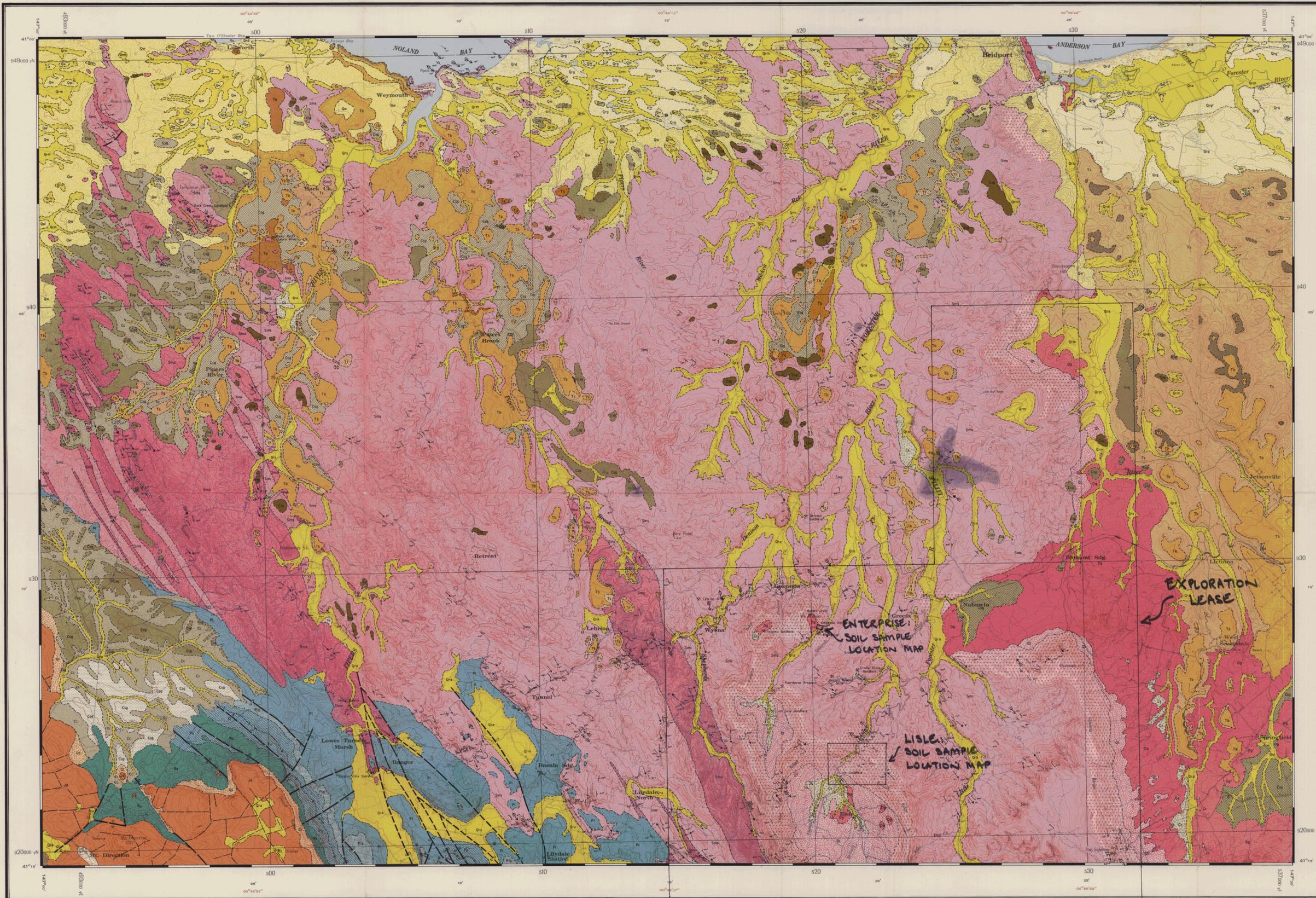
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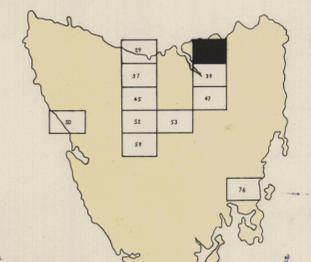
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- REFERENCE**
- QUATERNARY**
 - Qm Marsh and swamp deposits
 - Qra Alluvial deposits, including younger gravels
 - Qds Dune sand
 - Qdl Windblown and locally derived sand
 - Qdt Dolerite talus
 - Qdb Basalt talus
 - Qdm Matchina Beds talus
 - Qgr Older gravels, Qgr' = 25' erosional terrace
 - Cenozoic**
 - Cc Silt and clay with occasional pebbles
 - Cag Angular gravel, mainly vein quartz
 - Crg Rounded and angular gravel, mainly vein quartz
 - Cqr Rounded gravel, mainly vein quartz
 - Cqs Quartz granule sand with pebbles
 - Cms Medium grained sand
 - Cfg Ferruginous, pisolitic gravel with ironstone blocks Cfg' = ironstone horizon
 - Cst Sandstone and conglomerate
 - Tertiary**
 - Ts Siliceous conglomerate
 - Ta Angular gravel, mainly vein quartz
 - Tb Rounded and angular gravel, mainly vein quartz
 - Tc Rounded gravel, mainly vein quartz
 - Tf Ferruginous zone
 - Ts Sandstone and conglomerate
 - Tc Dolerite boulder and cobble horizon
 - Mesozoic**
 - Triassic Unconformity
 - Tri Sandstone
 - Paleozoic**
 - Permian Unconformity
 - Permian Upper with pebbly horizons a and b
 - Permian Liffey Group
 - Permian Lower, including conglomerate and pebbly mudstone and sandstone
 - Devonian Unconformity
 - Devonian Contact metamorphosed
 - Devonian Predominantly siltstone and sandstone
 - Devonian Predominantly slate and phyllite

- Igneous Rocks**
- Tertiary Basalt
 - Sub basalt tuff
 - Jurassic Dolerite
 - Devonian Granodiorite (Dg' = finer grained and more leucocratic phases)
- Geological boundary — position approximate
 Geological boundary — inferred
 Strike and dip of beds — right way up
 Strike and dip of overturned beds
 Strike and dip of beds — facing unknown
 Vertical bedding
 Major anticline, inferred
 Major syncline, inferred
 Plunge of F₁, minor anticline
 Plunge of F₁, minor syncline
 Plunge of F₁, folds
 Plunge of F₁, minor antiform
 Plunge of F₁, minor synform
 Fault, position approximate (down thrown side indicated)
 Fault, concealed
 Strike and dip of slaty cleavage (S₁)
 Strike and dip of strain slip cleavage (S₂)
 Plunge of Lineation L₁, bedding/cleavage (S₁) intersection
 Plunge of Lineation L₁, S₁/S₂ intersection
 Plunge of slickensides
 Direction of movement of sediment bearing currents
 Trend of sediment bearing currents
 Macrofossil locality
 Plant fossil locality
 Mine or prospect
 Alluvial Workings
 Minor mineral occurrence
 Lineament, photo interpreted

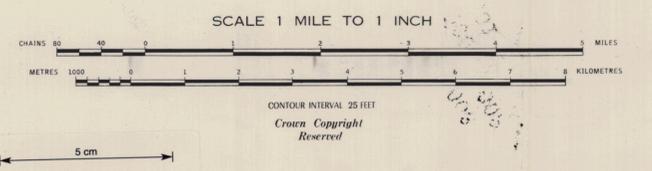


CONTROL: 2nd and 3rd Order Triangulation based on Luchmanes Astronomical Station Lat. 41° 28' 23.28" S Long. 147° 17' 18.75" E
 DETAIL: Aerial Photography 1956
 PROJECTION: Transverse Mercator
 LEVEL DATUM: Mean Sea Level Hobart
 NOMENCLATURE: Approved by the Nomenclature Board of Tasmania
 GRID CONVERGENCE: Based on Longitude 147° 00' E. To obtain True Bearing use correction as shown in margin of map.

Trig. Stations (2nd and 3rd Order) 4th Order
 State Permanent Mark
 House
 Windygap Water Tower
 Mine Lighthouse Waterhole
 Electric Transmission Line
 Roads
 Vehicle Track
 Foot or Path Track
 Gate Cattle-grid Bridge
 Railway

INDEX TO ADJOINING SHEETS

BEACONSFIELD	PIPERS RIVER	BOOBYALLA
FRANKFORD	LAUNCESTON	ALBERTON



Magnetic variation from True North for the centre of this sheet is approximately 12° 00' E
 (ANNUAL CHANGE 0' E)

Swamp or Marsh
 Quarry
 Great Pit
 Cliff
 Contours
 Depression Contours

Geology by B. Marshall, B.Sc., A.R.C.S., F.G.S.
 C. M. Barton, B.Sc., Ph.D., F.G.S.
 D. J. Jennings, B.Sc.
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 Base map adapted from 40 chain to 1 inch sheets produced by the Lands and Surveys Department, Hobart.
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