REPORT ON EXPLORATION

MINERAL CLAIMS N4211-4213

YAM CREEK AREA

NORTHERN TERRITORY

MORESTOE PTY LTD
WA JETTNER
SEPTEMBER 1994

LIST OF CONTENTS

LIST OF FIGURES

1. INTRODUCTION

Mineral Claims N 4211 to 4213 are pegged to cover the extension of a known auriferous drainage system that has its origins at the northern end of the Priscilla Line of Gold Reefs in the Grove Hill Area of the central Pine Creek geosyncline.

The three claims cover a total area of 84.5 Ha along the postulated strike of the Yam Creek anticline which is the structural host for the Priscilla Line.

The pegged areas also cover what was probably a late Tertiary to Modern drainage system that starts to the east of North Point and heads northwards until it joins Yam Creek.
It is this system that has been the focus of our exploration efforts which are directed towards proving up an alluvial gold deposit based on the available strike length of 1 km.

The claims were pegged in late July and early August 1991 and granted on the 22nd of October of the same year for a period of three years.

This report covers the exploration done in that time.

2. LOCATION AND ACCESS

Mineral Claims N 4211 to 4213 are located in the Yam Creek area to the west of Grove Hill in the central Pine Creek Geosyncline.

Their location may be found easily by referring to the Department of Mines and Energy's 1:50000 Tenement Map No 14/3-III "Ban Ban".

The claims lie within the graticular block number 1369 and lie between 131 32'E and 131 33'E and 13 28'S and 13 29'S.

The claims lie to the north and south of the Mt Wells Road and are accessible from this all weather road.

Access to the prospect area from Darwin is via the Stuart Highway to the Fountain Head Road thence down this road for approximately 17km to the Mt Wells Road then down this road to the old Yam Creek Siding which is located to the north of the road about 7km from the Fountain Head Siding at the junction of the Fountain Head and Mt Wells Roads.
The claims are then located to the north and south of the old Yam Creek Railway Siding.

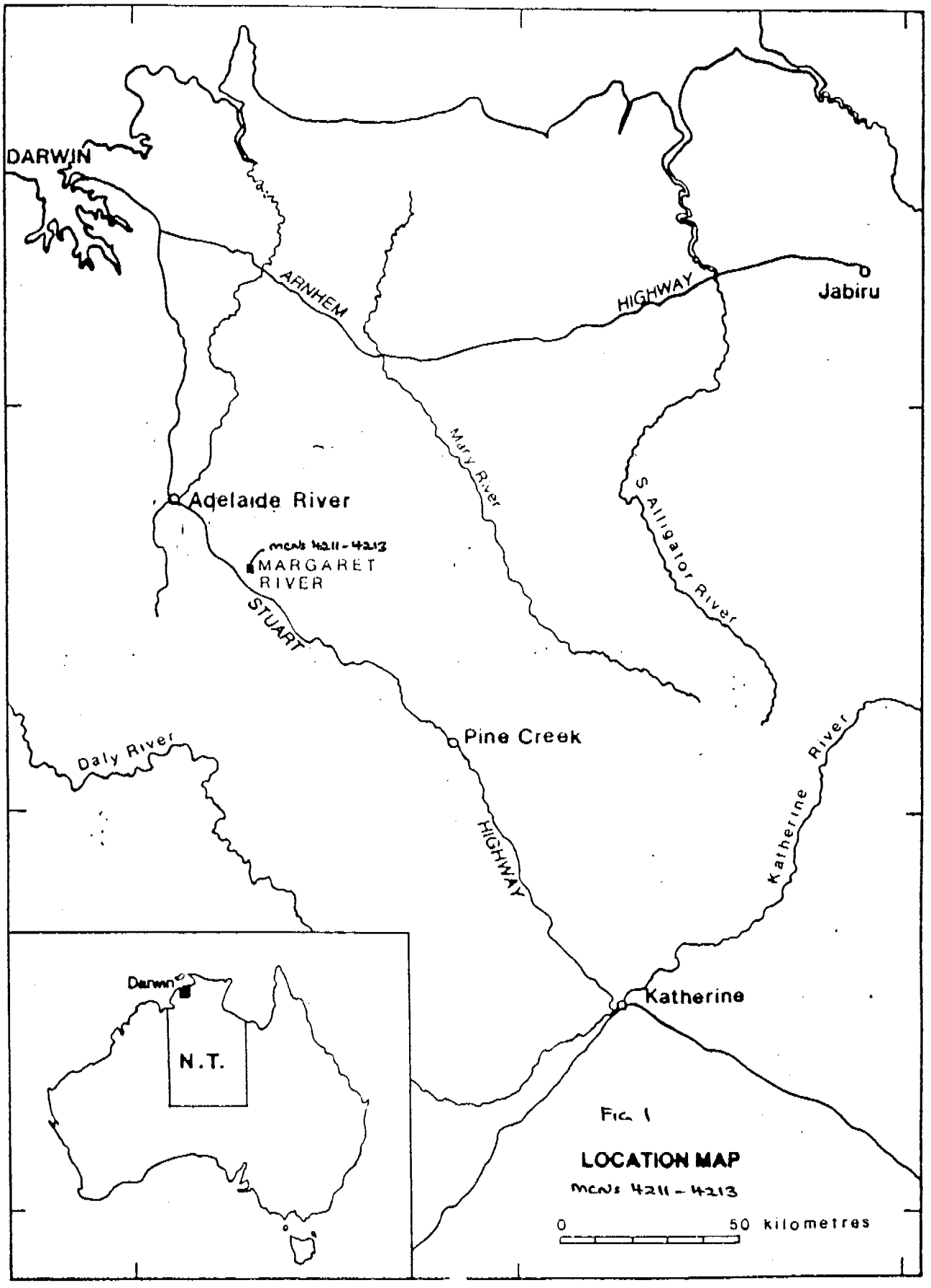


Fig. 1

LOCATION MAP

mcNs 4211 – 4213

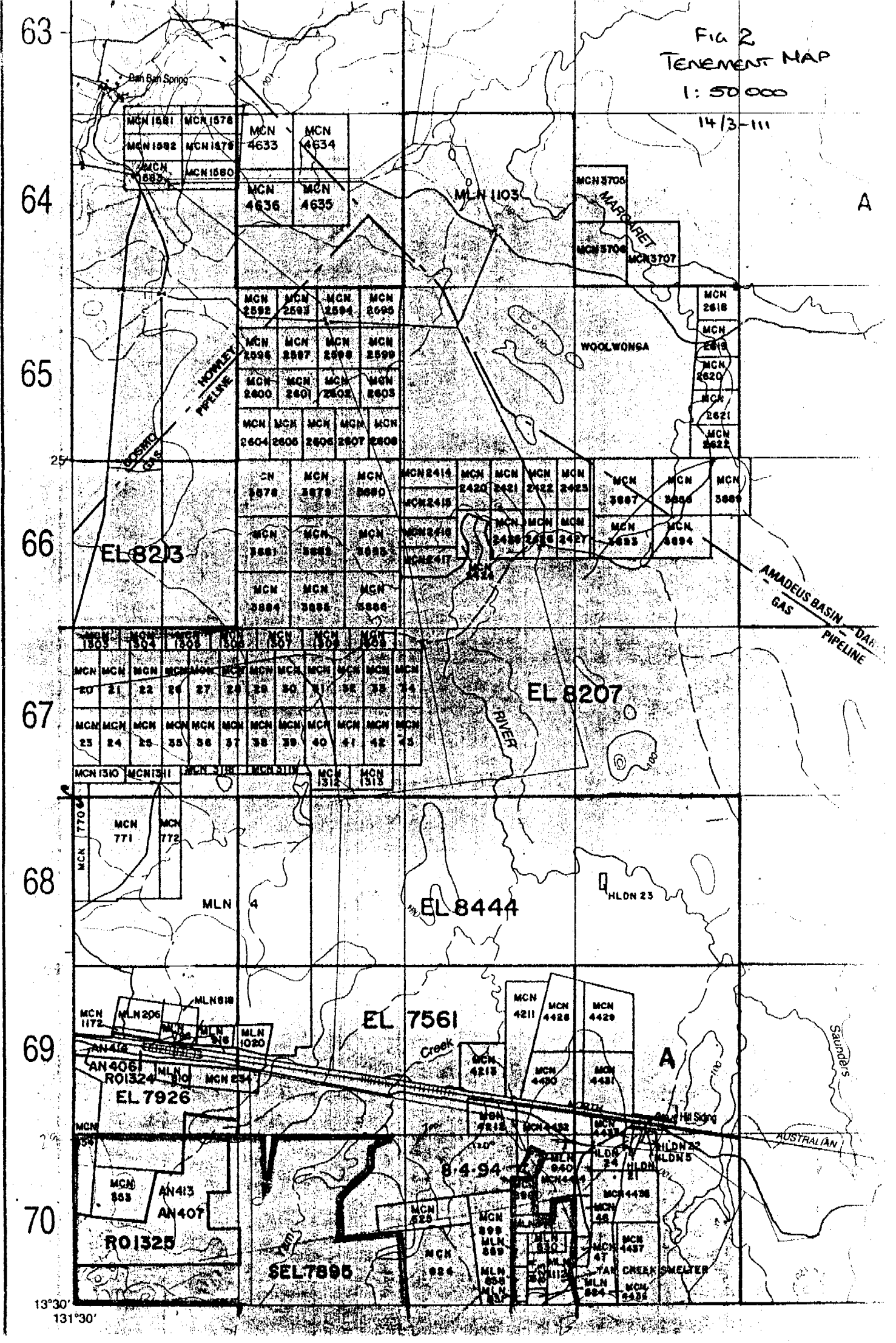


Fig 2.
TENEMENT MAP
1:50 000
14/3-111
63
64
65
66
67
68
69
70
25
Ban Ban Spring
MCN 1581
MCN 1578
MCN 1582
MCN 1579
MCN 1583
MCN 1580
MCN 4633
MCN 4634
MCN 4636
MCN 4635
MLN 1103
MCN 3705
MARQUET
MCN 3706
MCN 3707
MCN 2592
MCN 2593
MCN 2594
MCN 2595
MCN 2596
MCN 2597
MCN 2598
MCN 2599
MCN 2600
MCN 2601
MCN 2602
MCN 2603
MCN 2604
MCN 2605
MCN 2606
MCN 2607
MCN 2608
MCN 2618
MCN 2619
MCN 2620
MCN 2621
MCN 2622
WOOLWONGA
MONKLEY PIPELINE
COSMO GAS
MCN 3878
MCN 3879
MCN 3880
MCN 3881
MCN 3882
MCN 3883
MCN 3884
MCN 3885
MCN 3886
MCN 2414
MCN 2415
MCN 2416
MCN 2417
MCN 2418
MCN 2419
MCN 2420
MCN 2421
MCN 2422
MCN 2423
MCN 2424
MCN 2425
MCN 2426
MCN 2427
MCN 3887
MCN 3888
MCN 3889
MCN 4893
MCN 4894
EL 8213
AMADEUS BASIN — DARWIN GAS PIPELINE
MCN 1309
MCN 1308
MCN 1307
MCN 1306
MCN 1305
MCN 1304
MCN 1303
MCN 1302
MCN 1301
MCN 1300
MCN 20
MCN 21
MCN 22
MCN 26
MCN 27
MCN 28
MCN 29
MCN 30
MCN 31
MCN 32
MCN 33
MCN 34
MCN 23
MCN 24
MCN 25
MCN 35
MCN 36
MCN 37
MCN 38
MCN 39
MCN 40
MCN 41
MCN 42
MCN 43
MCN 1310
MCN 1311
MCN 1312
MCN 1313
EL 8207
RIVER
MCN 770
MCN 771
MCN 772
MLN 4
EL 8444
HLDN 23
MLN 818
MCN 1172
MLN 206
MLN 1020
AN 414
AN 406
R01324
EL 7926
EL 7561
Creek
MCN 4211
MCN 4426
MCN 4429
MCN 4213
MCN 4430
MCN 4431
Saunders
Alice Hill Siding
AUSTRALIAN
HLDN 22
HLDN 5
HLDN 24
HLDN 21
MCN 4436
MCN 4437
MCN 4438
MCN 4439
MCN 4440
MCN 4441
MCN 4442
MCN 4443
MCN 4444
MCN 4445
MCN 4446
MCN 4447
MCN 4448
MCN 4449
MCN 4450
MCN 4451
MCN 4452
MCN 4453
MCN 4454
MCN 4455
MCN

3. REGIONAL GEOLOGY

Mineral Claims N 4211 to 4213 are located in the central part of the Pine Creek geosyncline. This area consists of the upper portion of the Early Proterozoic sequence with numerous intruded volcanics

Regionally the project area is underlain by siltstones and greywackes of the Burrell Creek Formation of the Finnis River Group and this formation generally outcrops very poorly.

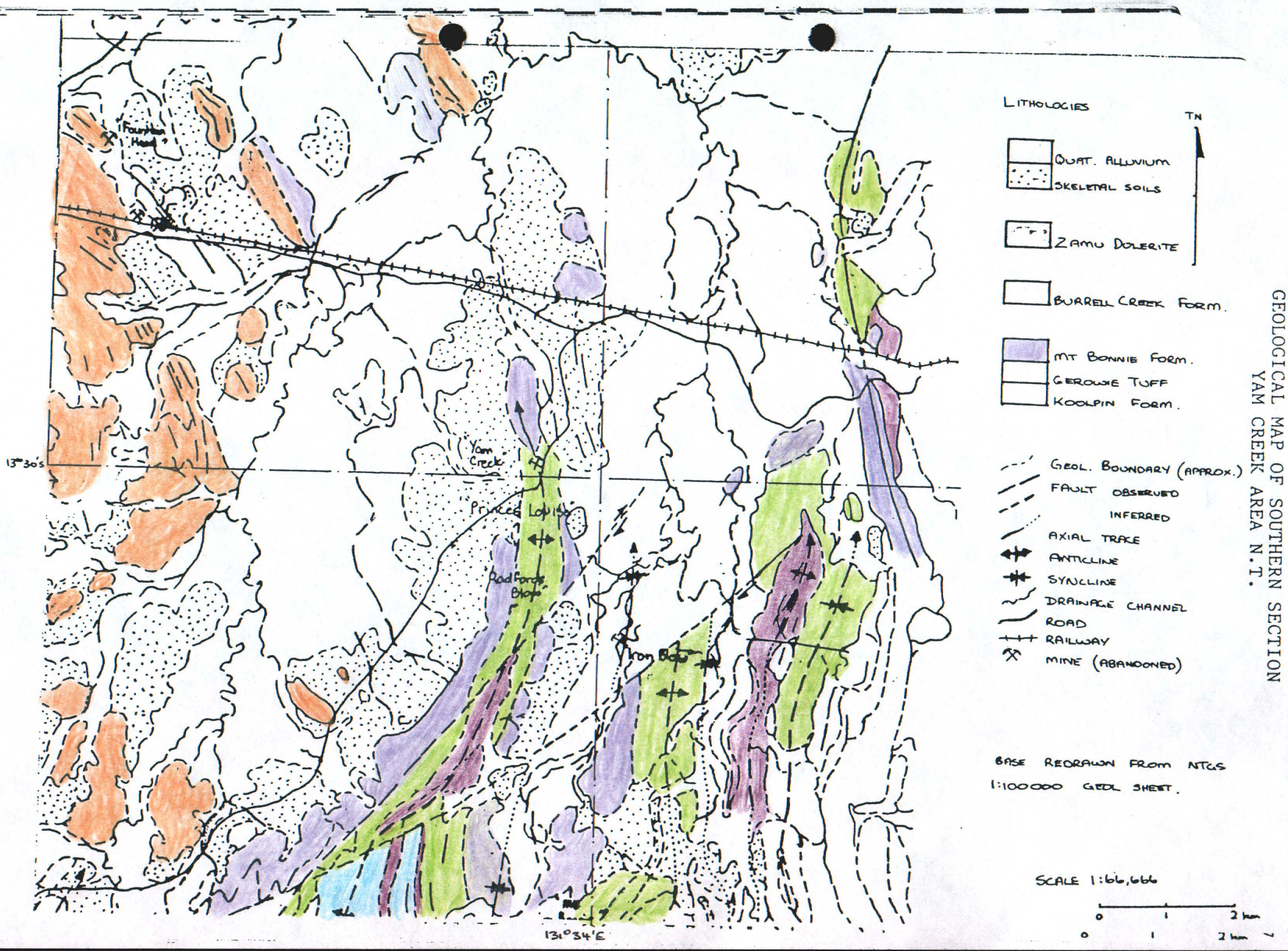
The Burrell Creek Formation forms a complex fold sequence that lies between two domal structures which are formed by the underlying South Alligator Group rocks to the south-east (Golden Dyke Dome) and the northwest (Burnside Granite Area).

The South Alligator Group forms relatively well outcropping low hill ranges, and includes black shales, acidic tuffs, slates and greywackes, together with many thin exhalative horizons including cherts and stratiform sulphides.
The Priscilla Line is located within the Mt Bonnie Formation along the western limb of the Yam Creek regional anticline which is disrupted by various north-east/south-west trending faults along virtually its entire length.

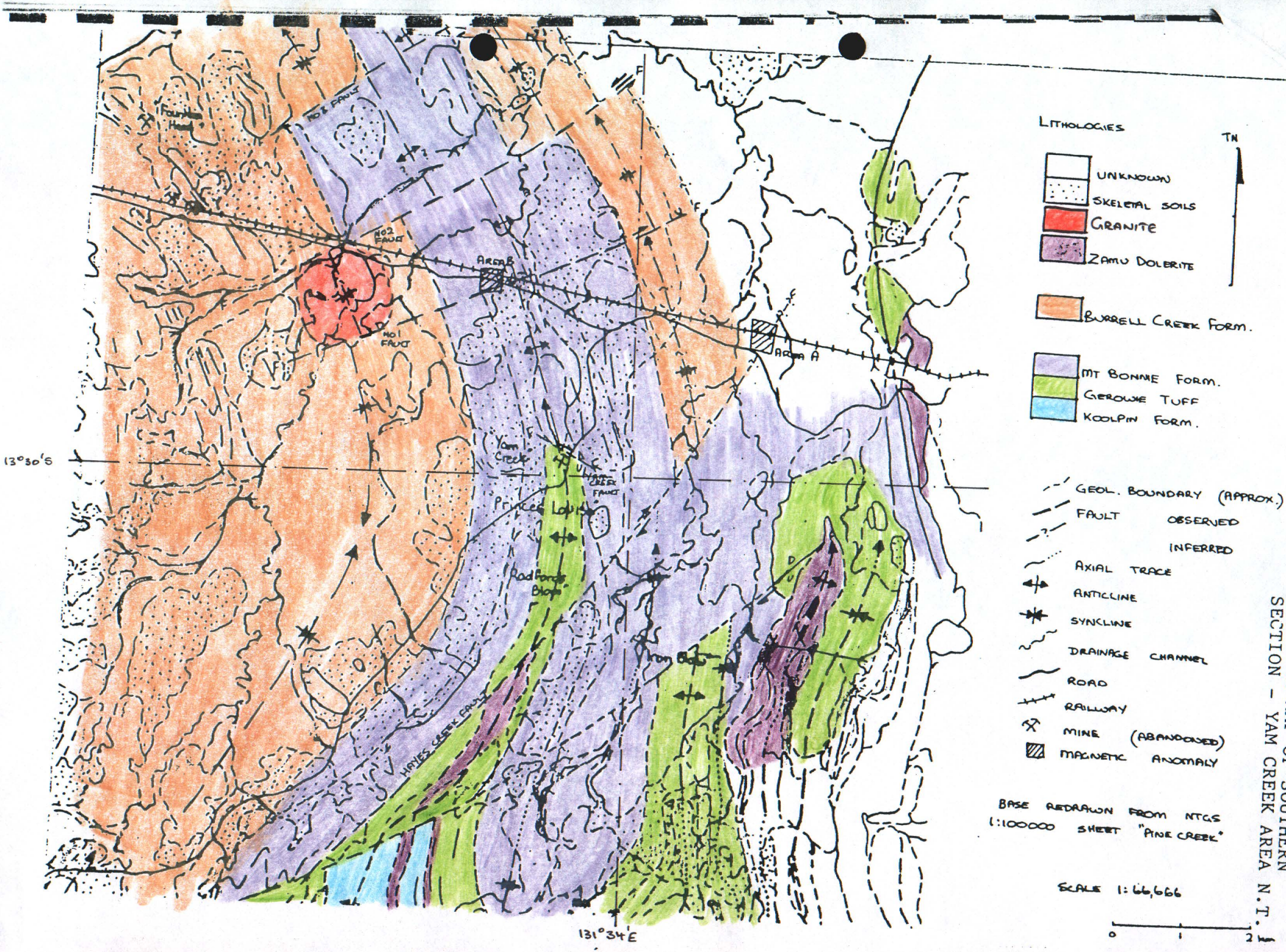
There is a small granite intrusion located under the present day Yam Greek drainage system to the south of the Mt Wells Road and this has provided the heat engine for the mineralisation along the anticline.

Tertiary and Quaternary deposits cover most of the area. They include alluvial silts which cover extensive areas on the flood plains of the main rivers, and an older series of colluvial and alluvial gravels which flank the outcrop areas and also underlie parts of the flood plains.

The older gravels are commonly laterised and rest on a clay substratum which has formed by in situ weathering of the underlying bedrock. The gold placer deposits worked in the last century by the Chinese were located in these gravels.



GEOLOGICAL MAP OF SOUTHERN SECTION
YAM CREEK AREA N.T.



- INTERPRATIVE GEOLOGICAL MAP OF SOUTHERN SECTION - YAM CREEK AREA N.T.

4. ECONOMIC GEOLOGY

The regional area surrounding these claims is the heart of a mining centre which would hold its own with any in Western Australia.

To the south there were the deposits, now mostly mined out;

Yam Creek	Au
Princess Louise	Au
Mt Bonnie	Au, Ag, Pb, Zn
Iron Blow	Au, Ag, Cu, Pb
Golden Dyke	Au, Ag
Langleys	Au, AG
Davies No2	Au
Fishers Lode	Au
Temperance	Au
Sandy Creek	Au
Red Hill	Au
Black Rock	Au.

To the west there were/are the following deposits;

Cosmo Howley	Au
Howley Line	Au
Fountain Head	Au
Klondike	Au
Black and White	Au
Faded Lily	Au
Zapopan	Au
Alligator	Au
John Bull	Au
Crocodile	Au.

To the north there are the following deposits;

Glencoe	Au
Woolwonga	Au.

5. PROSPECT GEOLOGY

The geology that underlies MCNs 4211 to 4213 where exposed is the Burrell Creek Formation of the Finnis River Group.

As there is a large part covered by alluvium the only way to identify the substratum is via geophysics or direct observation by costeaning or drilling.

From observations there is a small section of Mt Bonnie formation located in the southernmost part of MCN 4212.

We believe this to be part of the covered extension to the Yam Creek anticline.

This is borne out by the fact that like most of the gold bearing anticlines in the central geosyncline there is a number of Dolerite dykes and sills that are usually associated with the central axial shatter zone which show up as excellent marker beds on high intensity aeromagnetic contour maps.

The aeromagnetic maps covering this area show that the Yam Creek anticline trends to the northwest as it crosses the Mt Wells Road and goes through the claims as pegged by ourselves. They also show that there are a number of disruptions to the anticlinal trace in the form of faulting in a north-east/south-west direction which are consistent with those faults observed in the exposed part of the anticline.

Located under the present day course of the Yam Creek is a hidden granite which probably accounts for the heat engine for the mineralisation along the Priscilla Line. This granite was located in the mid 80s during a costeaning program in the area.

The folding of the axial trace of the Yam Creek Anticline around this granite as probably a F3, or even F4, event and the asymmetry of the anticline with the associated stresses from the west may well account for the disappearance of the mineralised greywacke beds to the east of the Yam Creek anticlinal axis.

It is known that the anticlinal axis dips to the west so the structure is slightly overturned and the beds on the eastern side of the anticline dip steeply to the east, there so far has been no discovery of the two mineralised greywacke beds on the eastern side of the axial plane.

The mineralisation that is of interest to us is the type that is hosted on the two westerly dipping greywacke beds and the surrounding mudstone units.

This mineralisation becomes lost in the axial zone shatter system to the south of the North Point area and although it is present the overprinting of the barren shatter system in this area may well confuse the issue.

As the anticline has a shallow plunge to the north (approximately 10) from the geophysical data we would expect it to be present under the claims, although at what depth is not clear at this time.

6. PREVIOUS EXPLORATION

Previous exploration was conducted on the claim area by Ken Day Pty Ltd and Territory Resources in the 1980s.

This exploration consisted of the flying of a high intensity aeromagnetic survey by Geoterrex in 1985.
The aeroplane was a Rockwell Shrike Commander with a stringer mounted Caesium vapour optical absorption magnetometer.
Traverse line direction was east/west, traverse line spacing was 250m and nominal terrain clearance was 80m.

Other exploration was done later by Territory Resources and included a costeaning program that covered the Yam Creek and Margaret River systems with the objective of generating one or more large scale alluvial gold targets or deposits.
From the work that was done at this time there is the basis for a more systematic follow-up program of this entire concept at some time in the future.

This however was not our objective at the time of application for the mineral claims under renewal.

7. EXPLORATION BY MORESTOE PTY LTD

Exploration conducted by Morestoe Pty Ltd on these tenements consisted of a literature survey conducted on data generated by Territory Resources in the 1980s, interpretation of the aeromagnetic data of 1985, numerous geological traverses across the claims, investigations of the old workings located on MCN 4212, and a costeaning program across all three tenements.

This data is presented in the following pages.
The costeaning program involved the excavating of 18 pits and costeans along 6 traverse lines.
Of these 18 pits there were 3 long costeans and 15 pits.
Originally it was proposed to have 8 long costeans across the area of interest but it was decided to only have 6 lines, the majority of which were composed of pits, for disturbance and economic reasons.
During operations it was found that the laterized alluvium was very hard to excavate and the amount of time and effort necessary to excavate long costeans far outweighed the information to be gained from such an exercise.

In general there is no clearly defined central drainage line but what appears to be a series of small meandering shallow stream beds not unlike a braided stream system paralleling the modern drainage system.

In previous exploration in the mid 80s it was found that the drainage system further to the south was composed of a classical braided stream system and work done on these tenements would seem to indicate that this type of drainage system continues and does not join to form the classical deep lead type of placer deposit.

Across the various section lines there appear to be a number of areas of coarse basal wash with little or no vertical displacement in the areas of postulated stream beds.

In general it is these areas of coarse basal wash that we were most interested in sampling with secondary targets being the areas of laterized wash and the bedrock type and profile.

The six traverse lines were composed of the following pits:

Pit Line No 1 (Traverse 1)
East to West Pit 1 to Pit 4

Pit Line No 2 (Traverse 2)
East to West Pit 5 to Pit 11

Pit Line No 3 (Traverse 3)
East to West Pit 12

Pit Line No 4 (Traverse 4)
East to West Pit 13

Pit Line No 5 (Traverse 5)
East to West Pit 14

Pit Line No 6 (Traverse 6)
East to West Pit 15 to Pit 18

The results obtained to date from the panning and visual grading of the samples collected from this program are as follows:

PIT No	VISUAL GOLD	ESTIMATED GOLD GRADE
1	2 fine 6 very fine 15 extra fine	0.10 g/m³
2	3 fine 10 very fine 21 extra fine	0.20 g/m³
3	1 fine 6 very fine 14 extra fine	0.10 g/m³
5	3 fine 20 very fine 25 extra fine	0.25 g/m³
6	1 medium 2 fine 20 very fine 30 extra fine	0.40 g/m³
8	2 very fine 3 extra fine	0.01 g/m³

COSTEAN No	VISUAL GOLD	ESTIMATED GOLD GRADE
9	1 very fine 2 extra fine	0.01 g/m³
10	1 very fine	0.01 g/m³
12	1 fine 5 very fine 10 extra fine	0.10 g/m³
14	1 coarse 1 fine 2 very fine 5 extra fine	0.25 g/m³
18	2 extra fine	0.01 g/m³

Also presented is part of the high intensity aeromagnetic survey covering the tenement areas and immediate surrounds along with the authors interpretation of their meaning.

Sheet 2

13°18'30"S

13°24'S

13°31'S

8508000N

8507000N

8506000N

8505000N

8504000N

775000E

774000E

773000E

Yan Leece Anticline

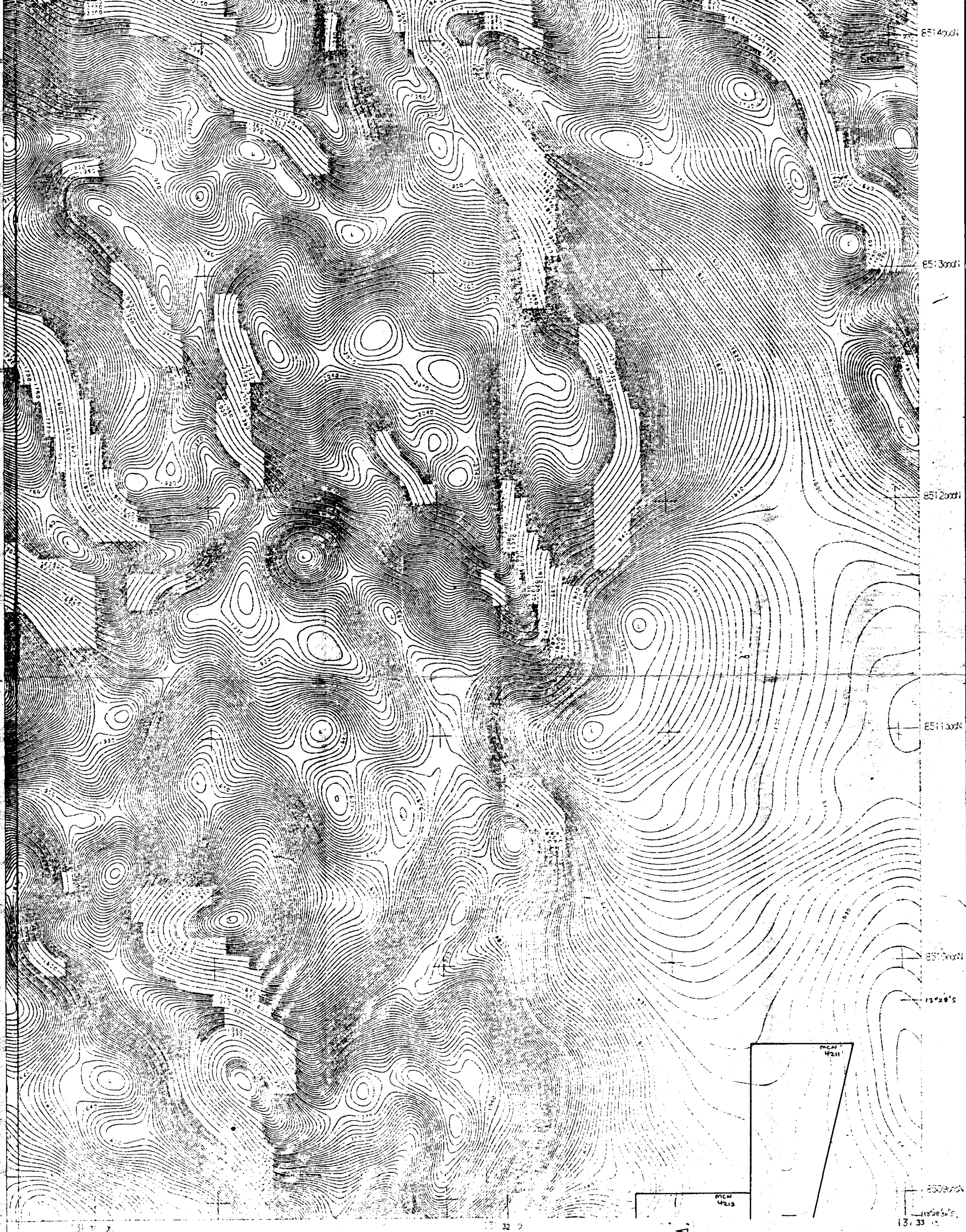
Yan Leece Mine

Idaho Gulpa Mine

mud tank

mud tank

granite



GR94/738

joins Sheet 2.

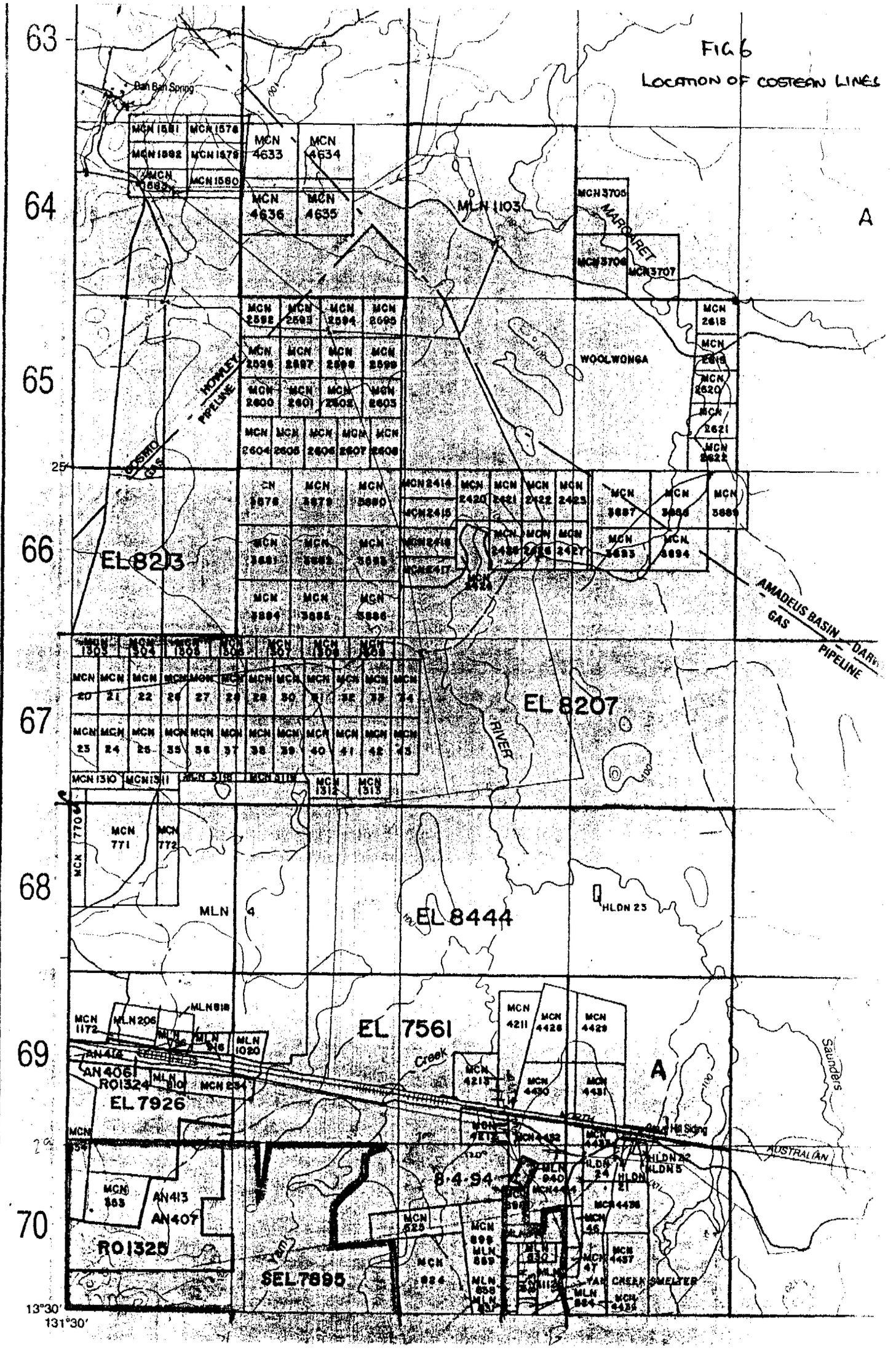
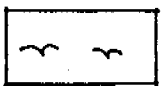
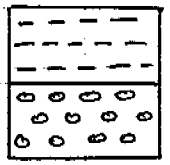


FIG 6
LOCATION OF COSTEAN LINES
EL 8213
EL 8207
EL 8444
EL 7561
EL 7926
SEL 7895
MLN 1103
MLN 4
HLDN 23
WOOLWONGA
MARQUET
HOWARD PIPELINE
COOPER GAS
AMADEUS BASIN — DARWIN GAS PIPELINE
RIVER
Creek
Saunders
Old Hill Siding
AUSTRALIAN
SMELTER
AN 406
AN 407
AN 413
AN 414
R01324
R01325
8·4·94
63
64
65
66
67
68
69
70
25
20
13°30'
131°30'



TOPSOIL

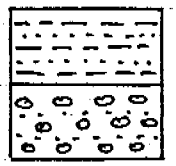
MODERN



SOILS/SILTS

WASH

TERTIARY (LATERISED)

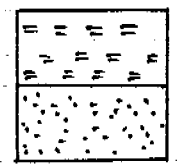


SOILS/SILTS

WASH

COARSE WASH

MT BONNIE FORMATION



MUDSTONE

GREYWACKE

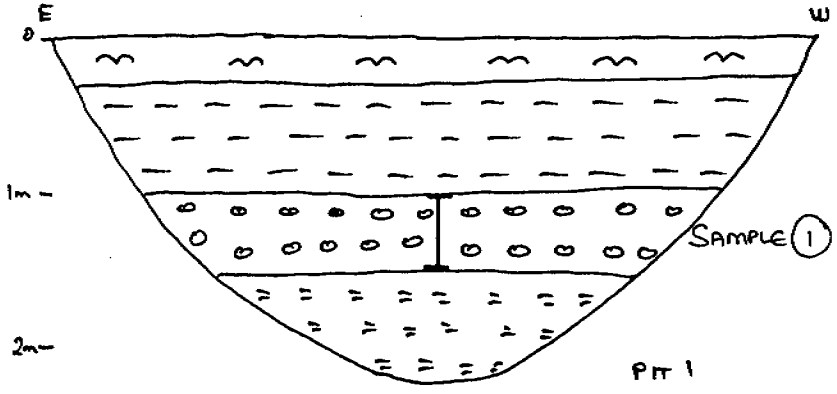
SAMPLING DETAILS

SAMPLE (16) 12ℓ SAMPLE VOLUME

1.5-2.1 SAMPLE INTERVAL

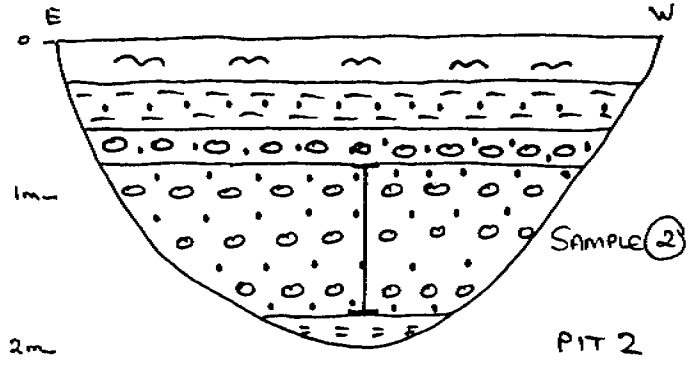
1f (fine) VISUAL GOLD PARTICLES
2vf (v.fine)
3ef (e.fine)

0.05 g/m³ VISUAL ESTIMATED GOLD GRADE



SAMPLE (1)

1.0–1.5 2f 6vf 15ef 0.10 g/m³



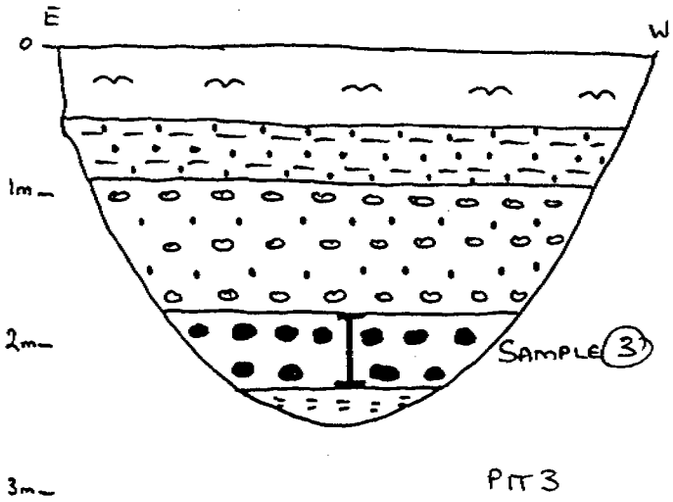
SAMPLE (2)

0.8–1.8 3f 10vf 21ef 0.18 g/m³

PIT LINE No 1

SOUTH WALL

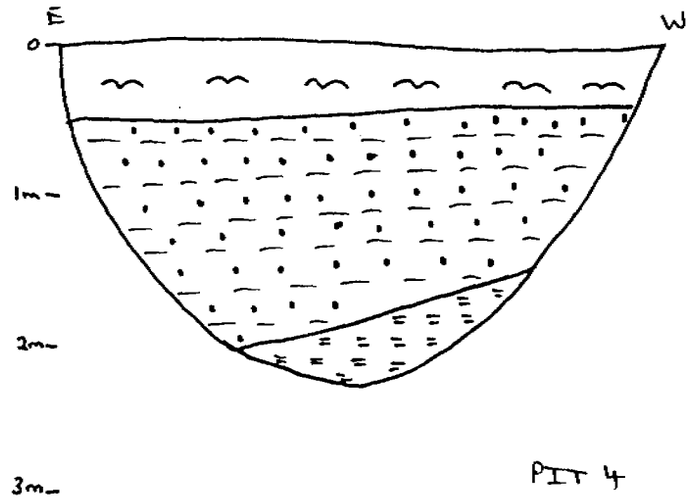
SCALE $\frac{V}{H}$ = 1:1



PIT 3

SAMPLE (3)

1.9-2.2 1f 0.10 g/m³
6vf
14ef

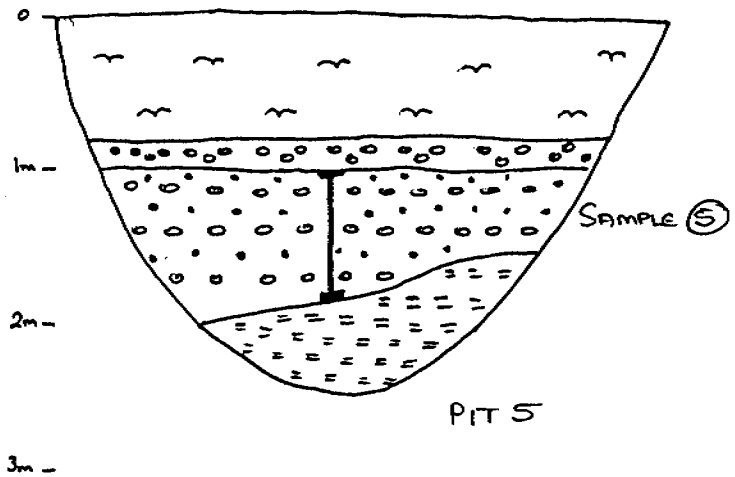


PIT 4

PIT LINE No 1

SOUTH WALL

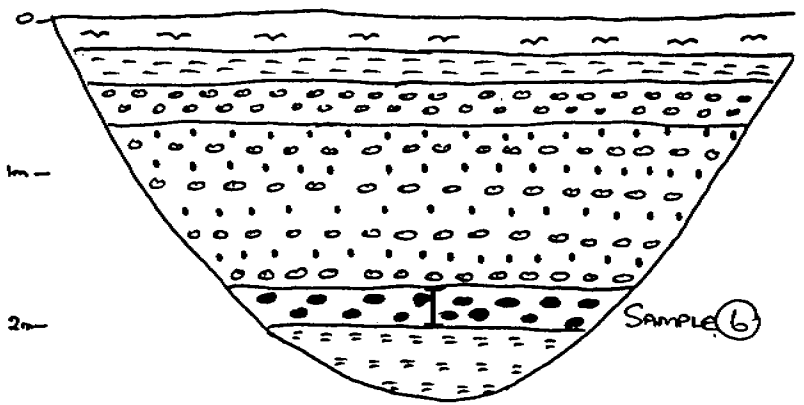
SCALE $\frac{V}{H}$ = 1:1



PIT 5

SAMPLE (5)

1·0-2·0 3 f 0·25 g/m³
20 vf
25 ef



PIT 6

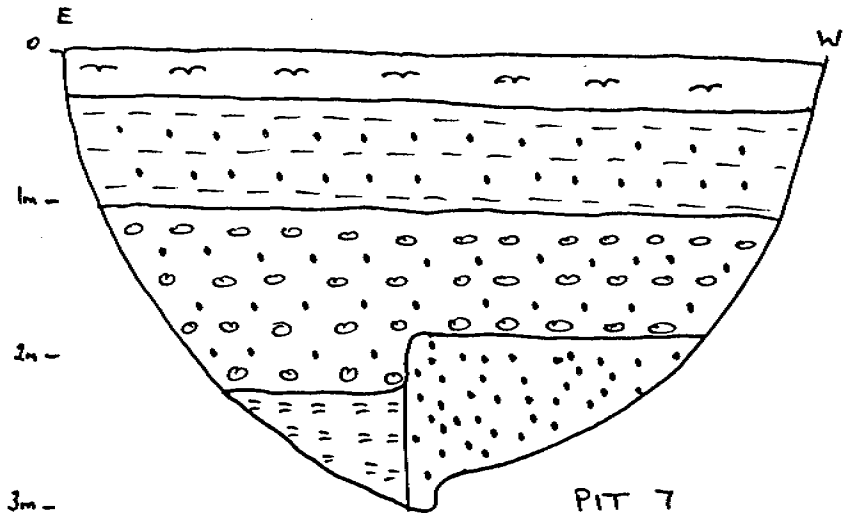
SAMPLE (6)

1·8-2·0 1m
2f
20 vf
30 ef
0·40 g/m³

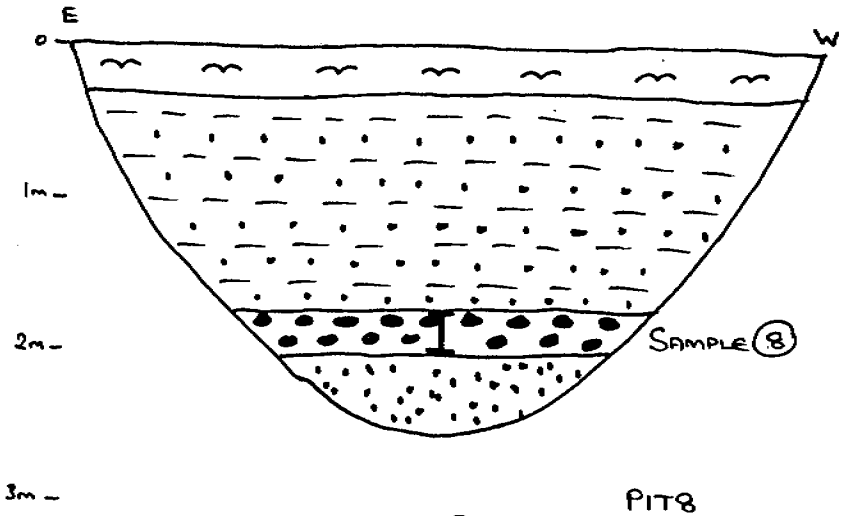
PIT LINE No 2

SOUTH WALL

SCALE $\frac{V}{H}$ = 1:1



PIT 7



PIT 8

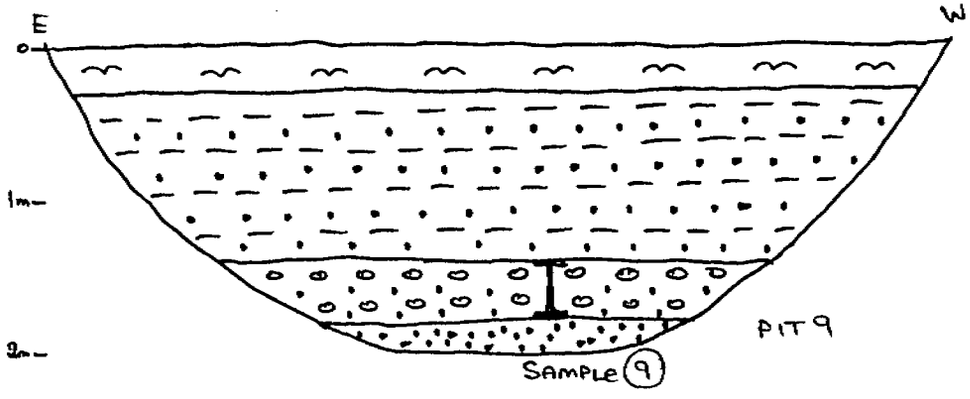
SAMPLE (8)

1·8 - 2·0 2vf 3ef 001 g/m³

PIT LINE No 2

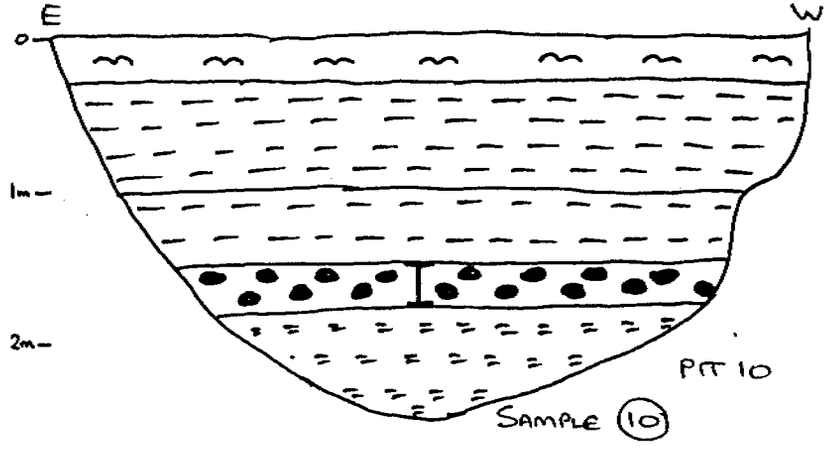
SOUTH WALL

SCALE $\frac{V}{H}$ = 1:1



SAMPLE (9)

1.5-1.9 1vf 2ef 0.01 g/m³



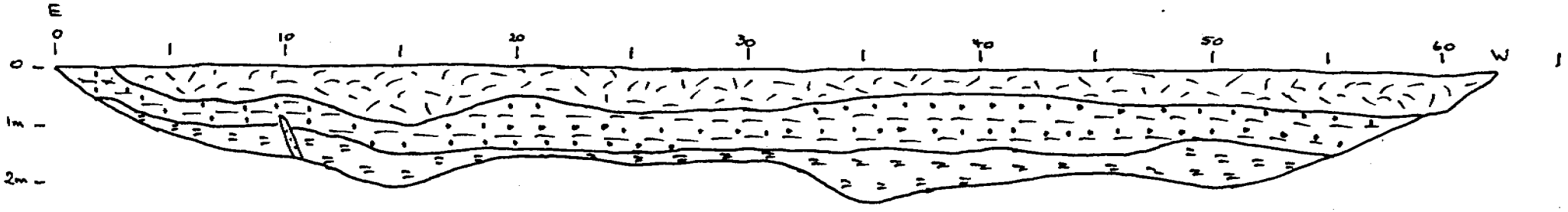
SAMPLE (10)

1.5-1.9 1vf 0.01 g/m³

PIT LINE NO 2

SOUTH WALL

SCALE $\frac{V}{H}$ = 1:1

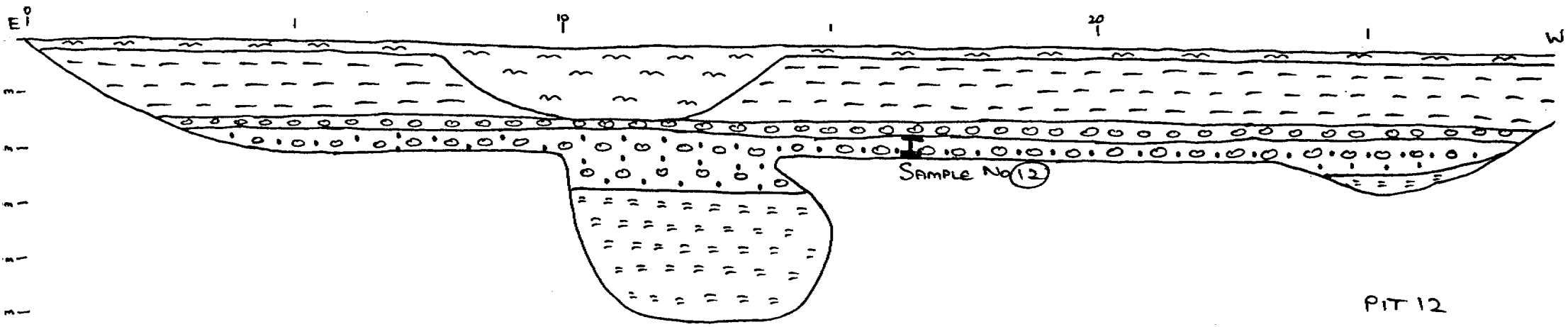


PIT 11

PIT LINE NO 2

SOUTH WALL

SCALE $\frac{V}{H}$ = 1:25



PIT 12

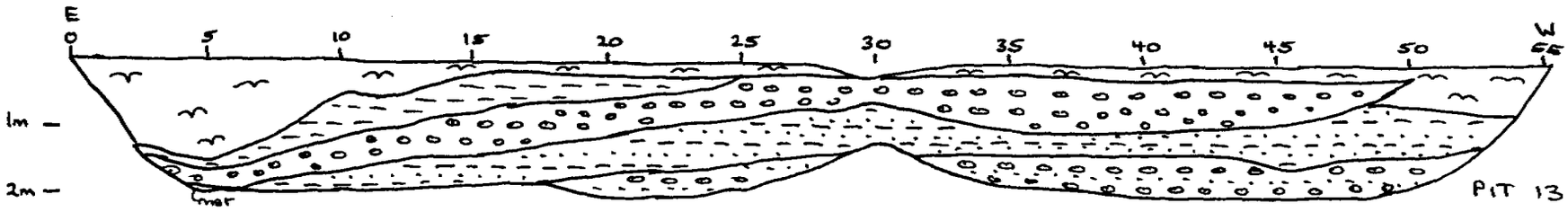
SAMPLE (12)

1.8-2.1 1f 0.10 g/m³
Syf
10ef

COSTEAN LINE No 3

SOUTH WALL

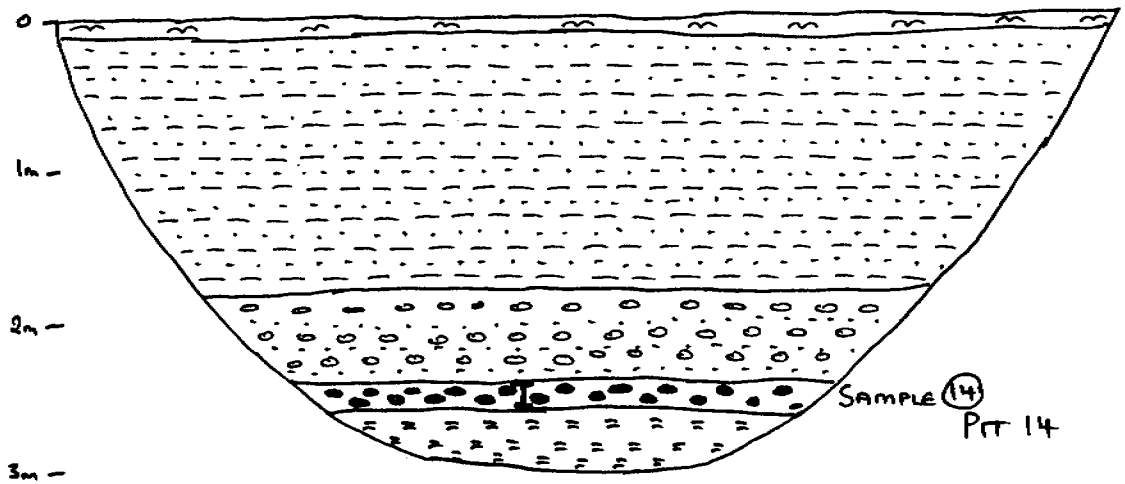
SCALE $\frac{V}{H}$ = 1:1



PIT LINE No 4

SOUTH WALL

SCALE $\frac{V}{H}$ = 1:2.5



SAMPLE (14)

1.5-1.6 — 1c, 1f, 2vf, 5cf — 0.25 g/m³

PIT LINE No 5

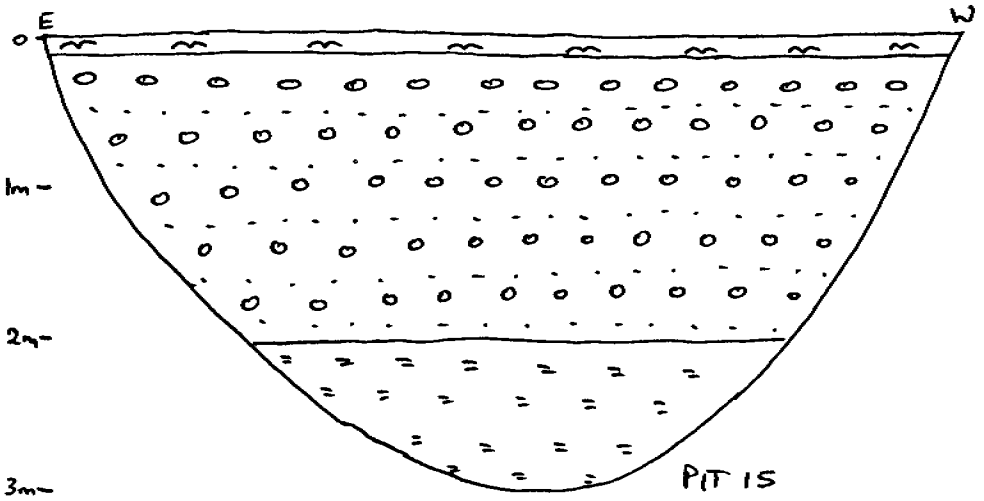
SOUTH WALL

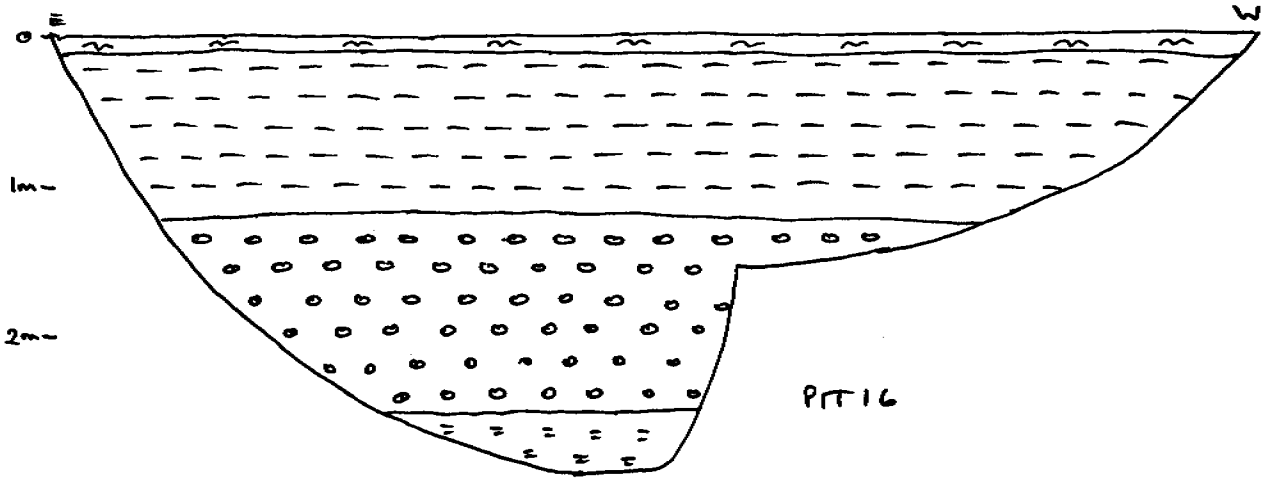
SCALE $\frac{V}{H}$ = 1:1

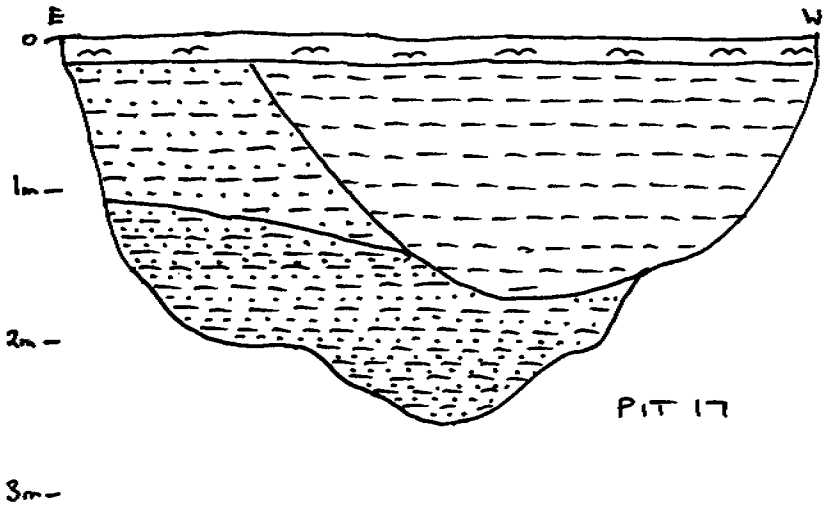
PITLINE No 6

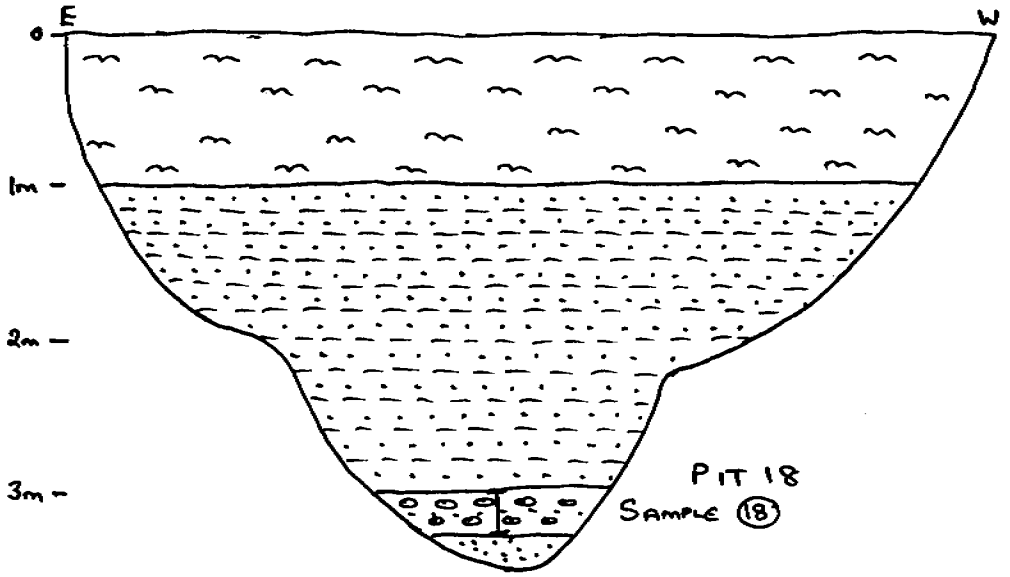
SOUTH WALL

SCALE $\frac{V}{H}$ = 1:1









SAMPLE (18)

3.0 - 3.3 2cf 0.01 g/m² PIT LINE No 6

SOUTH WALL

SCALE $\frac{V}{H}$ = 1:1

8. PROPOSED EXPLORATION

During the following period of tenure it is proposed to do the following further exploration on these tenements.

1. To further explore the palaeochannel that drains the Priscilla Line to the south by means of further costeaning to elucidate the braided stream theory.

2.To further explore the hardrock potential of the tenements by costeaning areas along the postulated strike of the Yam Creek Anticline.