

**CARPENTARIA GOLD PTY. LTD.**

**TECHNICAL REPORT**

**No. 167**

**TITLE**

EXPLORATION LICENCE No. 5491 "MARGARET RIVER" N. T.

FINAL REPORT : RELINQUISHED 27TH OCTOBER, 1990

**AUTHOR** I. N. BRUCE  
**DATE** DECEMBER 1990  
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AUTHOR(S) I. N. BRUCE

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ACCOMPANIMENTS 1 APPENDIX 4 PLANS

DRILL CORE ? -

LICENCE NO. EL 5491

PROJECT YEAR(S) 3

LICENSEE(S) CARPENTARIA GOLD PTY LTD

JOINT VENTURE(S) -

OPERATOR(S) CARPENTARIA GOLD PTY LTD

1:1 000 000

1: 250 000 PINE CREEK (50 52-8)

1: 100 000 Mc KINLAY RIVER (5271)

1: 50 000 BAN BAN (5271-3) / MT RINGWOOD (5271-4)

PROSPECT NAME(S) MARGARET RIVER

SITE LOCATION

TECTONIC UNIT BURRELL CREEK FORMATION / MARGARET GRANITE

MAJOR TERM ☐ PETROLEUM GEOLOGY ☒ METALLIFEROUS MINERALS

☐ - NONMETALLIFEROUS MINERALS

## DRILLING

- ☐ DIAMOND  
☐ PERCUSSION  
☐ AUGER  
☐ ROTARY

- ☐ GEOPHYSICS
  - AERIAL SURVEYS
    - ☐ MAGNETIC
    - ☐ RADIOACTIVITY
    - ☐ EM SURVEYS
  - GROUND
    - ☐ EM SURVEY METHOD
    - ☐ IP SURVEY METHOD
    - ☐ SEISMIC SURVEYS
    - ☐ RESISTIVITY SVYS
    - ☐ GEOPHYSICAL ANOM
    - ☐ GRAVITY SURVEYS

- ☒ GEOCHEMISTRY
- SAMPLING
- ☒ STREAM SEDIMENT
- ☐ SOIL
- ☒ ROCK CHIP
- ☐ WATER
- OTHER
- ☐ DRAINAGE TESTING
- ☐ DRILL CORE ANALYSIS
- ☐ ASSAYING
- ☐ GEOCHEMICAL ANOM

- ## GENERAL

- ☒ GEOL MAPPING
- ☒ PHOTOGEOLOGY
- ☐ GRIDDING
- ☐ METHODS
- ☒ REGIONAL GEOLOGY
- ☒ LOCAL GEOLOGY
- ☐ STRATIGRAPHY
- ☒ RECONNAISSANCE
- ☐ LOGGING

## NOTES

## ABSTRACT

INDEXED BY/DATE

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# CARPENTARIA GOLD PTY. LTD.

## TECHNICAL REPORT

No. 167

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EXPLORATION LICENCE No. 5491 "MARGARET RIVER" N. T.  
FINAL REPORT : RELINQUISHED 27TH OCTOBER, 1990

ISSUING  
DEPARTMENT

EXPLORATION

AUTHOR

I. N. BRUCE

INVESTIGATIONS  
CONDUCTED BY

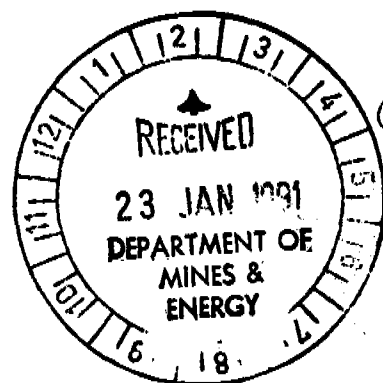
DARWIN BASED FIELD STAFF

SUBMITTED BY

P. G. SIMPSON

DATE

DECEMBER 1990



# DISTRIBUTION

1. Carpentaria Gold Pty Ltd - Brisbane
2. Carpentaria Gold Pty Ltd - Darwin
3. Department of Mines and Energy
4. Spare

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# LIST OF DRAWINGS

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EXPLORATION LICENCE No. 5491 "MARGARET RIVER" N. T.

FINAL REPORT : RELINQUISHED 27th OCTOBER 1990

1. INTRODUCTION AND SUMMARY

Exploration Licence No. 5491 "Margaret River" was granted to Woodleigh Nominees Pty Ltd for a period of six years on 19th November 1987. On 21st February 1988 the mining tenements were purchased by Carpentaria Gold Pty Ltd. The EL is centred approximately 120km southeast of Darwin, Northern Territory.

R. D. M. Wilson (1989) described the work carried out by Carpentaria Gold Pty Ltd on "Margaret River" from the date of purchase until the second anniversary. Twenty-four blocks were relinquished from the Licence on 19th November 1989, and the details of the location of those blocks and exploration conducted therein is provided by Wilson (1990).

This report describes the exploration undertaken in the 1990 field season on the twenty-four remaining blocks.

The original Licence enclosed much of the poorly exposed Margaret Granite. Exploration work concentrated on the rim of Burrell Creek Formation that form ridges in the northern and eastern portions of the Licence area. In the first phase of exploration a stream sediment survey was done. In conjunction with this all rock outcrops with gold or base metal potential were sampled.

The gold stream sediment geochemistry showed a broad zone of enrichment to lie in the northeast corner of the Licence area. Several other isolated anomalies were also delineated. As access is poor these targets were followed-up by helicopter. This showed the source to most of the gold anomalism to be isolated white quartz veins with up to 0.64 g/t gold.

The reconnaissance rock sampling programme outlined an area of minor tin mineralization. Grades of up to 150 ppm were returned.

## 2. LOCATION AND ACCESS

"Margaret River" is centred approximately 120km southeast of Darwin in the Northern Territory. It is bounded by longitudes 131°30' East and 131°39' East and latitudes 13°10' South and 13°20' South. The Licence totals twenty-four one-minute blocks, approximately 78km<sup>2</sup>.

Access to and within the Licence area is poor. Carpentaria Gold made a bulldozed road from a track that runs east from Deepwater to the McKinlay River (latitude 13°03' S). The bulldozed road runs south through the Mt. Ringwood Range to 13°15' S. The Ban Ban Springs, Mount Ringwood Station boundary fence lies on latitude 13°15' S. The bulldozed track has the approximate longitude of 131°35' E. There are no tracks on the eastern side of the Margaret River within the Licence area.

Exploration Licence No. 5491 lies within the Pine Creek 1:250 000 scale sheet (SD52-8), the McKinlay River 1:100 000 scale sheet (5271) and the Ban Ban (5271-3) and Mt Ringwood (5271-4) 1:50 000 scale sheets.

## 3. TENURE

Exploration Licence No. 5491 was granted to Woodleigh Nominees Pty Ltd for a period of six years on 19th November 1987. Government committed expenditure was set at \$24 000.

On 21st February 1989 Carpentaria Gold Pty Ltd purchased EL5491 along with EL5490 "Burnside" and EL5507 "Ringwood", for \$30 000. On the 19th November, 1989, twenty-four of the original forty-eight blocks were relinquished. The expenditure commitment for the third year of tenure was set at \$5 000.

## 4. GEOLOGY

The geology of EL5491 is dominated by the Margaret Granite, a coarse porphyritic granite. Siltstones and minor greywackes of the Burrell Creek Formation are exposed on the northern and eastern portions of the Licence area. The contact zone of the granite and sediments is poorly exposed. The Margaret River runs along much of the contact. There appears to have been little contact metamorphism within the Burrell Creek Formation.

Minor gold mineralization has been located in quartz veins orientated sub-parallel to bedding in the Burrell Creek Formation. Minor tin workings have been found to the east of the Margaret Granite. The tin is hosted by pods of pegmatite.



The reader is referred to the McKinlay River 1:100 000 scale map (5271) and explanatory notes produced by the BMR for further details.

## 5. WORK BY CARPENTARIA GOLD PTY LTD

### 5.1 Reconnaissance Surveys

The Exploration Licence area was stream sediment sampled at 500m to 1 000m intervals. At the same time outcrops with gold or base metal potential were rock sampled. A total of 174 stream sediment and 64 rock samples were collected during 1989.

Stream sediment samples were sieved to a -6mm mesh size in the field and sent for analyses to Australian Lab. Services, Townsville. Each sample was analysed for gold by the bulk cyanide leach method. In addition a sub-sample was sieved to a -80 mesh size and analysed for Cu, Pb, Zn, Ag, As, Fe, Mn, Sn, U, and Ba. Except for Sn, U and Ba which were tested by XRF, these elements were analysed by I. C. P.

Rock samples were analysed for Au, Cu, Pb, Zn, Ag and As at Classic Comlabs, Darwin. A selection were also analysed for Sn, W, Ta and Nb by XRF.

Regional work has shown anomalous gold stream sediment values to be those of 1 ppb and above. Background values are those below 0.10 ppb.

The stream sediment geochemistry showed the northeastern portion of the Licence area to be anomalous for gold. A cluster of twelve anomalous samples gives a peak value of 11.2 ppb. To the south six isolated streams are also anomalous. In the northern corner of the Licence two anomalous creeks were defined. Four samples gave low order anomalous values in the central portion of the Licence. They appear to drain from the contact zone of the sediments and the granite.

Anomalous stream sediment tin values have been taken to be those over 10 ppm. Background is below the detection limit. Five samples returned anomalous tin values. They form a cluster about the area where old workings were found. Rock sampling in this area gave a peak tin value of 150 ppm. Arsenic appears to be associated with the tin mineralization.

Few stream sediment samples returned Cu, Pb, or Zn values over 200 ppm. However copper values up to 4.55% were found in quartz veins approximately 1km east of the areas enriched in tin.

## 5.2 Follow-up Surveys

Apart from a brief visit to the old tin workings, follow-up work in 1989 was done by helicopter.

At QP68595 two 1.5m high piles of rubble are situated halfway up a hillside. The rubble appears to be at the downhill end of what was possibly an aerial ropeway. The rubble consists of pegmatite with variably disseminated cassiterite. To the east and on top of the ridge two small pits (5mx1m) have been dug into a heavily kaolinized quartz and felspar rock. Many quartz veins (QP68603) cross-cut the kaolinized rock.

The area outlined as being anomalous for gold by the stream sediment geochemistry were checked by helicopter borne field teams. Additional reconnaissance stream sediment samples from within the granite were also collected. A total of 35 stream sediment and 39 rock samples were collected. Each team consisted of a geologist and field assistant. Repeat stream sediment samples were collected from the anomalous sites. Additional samples at closer intervals were collected as required. Outcrops with auriferous potential were rock sampled.

The additional stream sediment samples from within the Margaret Granite failed to detect any zones of gold enrichment.

Reconnaissance geological mapping and rock sampling failed to locate any targets worthy of additional work. The stream sediment gold anomalies are thought to have been caused by numerous white quartz lenses orientated sub-parallel to bedding. These were shown to have gold grades of up to 0.64 from similar veins within the Pine Creek Geosyncline has shown such veins to sometimes contain minor isolated vugs with coarse gold. Such mineralization is detected by stream sediment sampling but is sub-economic at its bedrock source.

## 5.3 1990 Field Programme

The potential of the previously defined anomalies was progressively assessed during 1990 and several site inspections made accordingly.

Rock chip sampling of selected mineralized zones failed to substantiate any large tonnage potential of the zones. (Appendix 1).

## 6. CONCLUSION

A decision was reached in early October, 1990 to direct no more exploration expenditure toward Margaret River, and the Licence was accordingly surrendered on 27th October, 1990.

## 7. REFERENCES

WILSON, R. D. M., 1990:

Exploration Licence No. 5491 "Margaret River " N.T.  
Report on ground relinquished on 19th November 1989.

Carpentaria Gold Pty Ltd Report No.142

(unpublished report to the N.T. Department of Mines and Energy)

WILSON, R. D. M. and BALL, SIMON, 1989:

Exploration Licence No.5491 "Maragaret River" N.T.

Second Annual Report : Year Ended 19th November 1989

Carpentaria Gold Pty Ltd, Technical Report No.139

(unpublished report to the N.T. Department of Mines and Energy)

I. N. Bruce

APPENDIX 1

ROCK CHIP SAMPLE ASSAY RESULTS



CLASSIC LABORATORIES LTD

Job: ODN0983  
O/N: QP 81381

Preliminary

ANALYTICAL REPORT

SAMPLE Au Au Dpl

MARGARET  
RIVER.

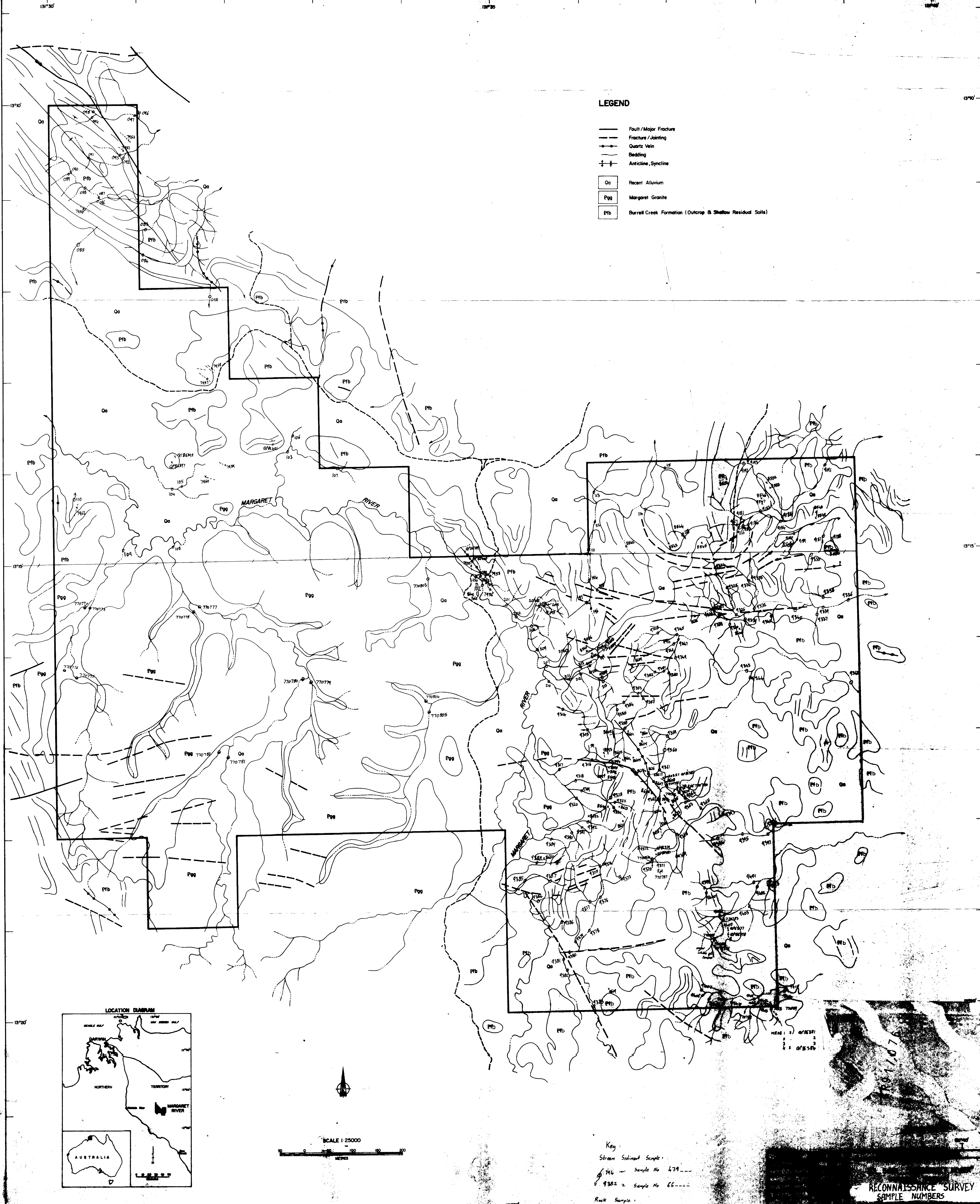
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QP 81405	<0.01	<0.01
QP 81406	<0.01	--
QP 81407	0.06	--
QP 81408	0.02	--
QP 81409	0.04	--
QP 81410	0.01	--
QP 81411	<0.01	--
QP 81412	<0.01	--
QP 81413	<0.01	--
QP 81414	<0.01	--
QP 81415	<0.01	--
QP 81416	<0.01	--
QP 81417	0.51	--
QP 81418	0.03	--

Mr. George (24 samples - but check ones?)  
+ Margaret River (14 samples) \* File

UNITS	ppm	ppm
DET.LIM	0.01	0.01
SCHEME	FA1	FA1

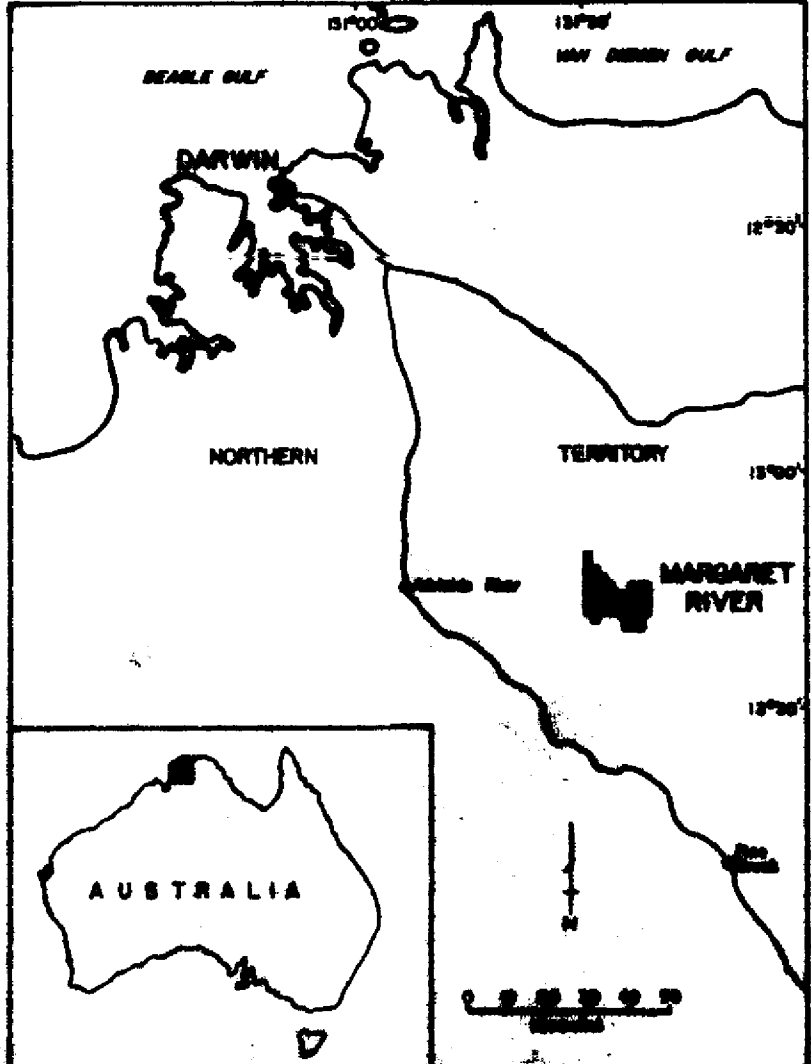
DRAWINGS



LEGEND

- Fault / Major Fracture
- - - Fracture / Jointing
- - - Quartz Vein
- - - Bedding
- ⊕ Anticline, Syncline
- Qa Recent Alluvium
- Pgg Margaret Granite
- Pfb Burrell Creek Formation (Outcrop & Shallow Residual Soils)

LOCATION DIAGRAM



SCALE 1:25000



Key:

Stream Sediment Sample:

9382 = Sample No. 479

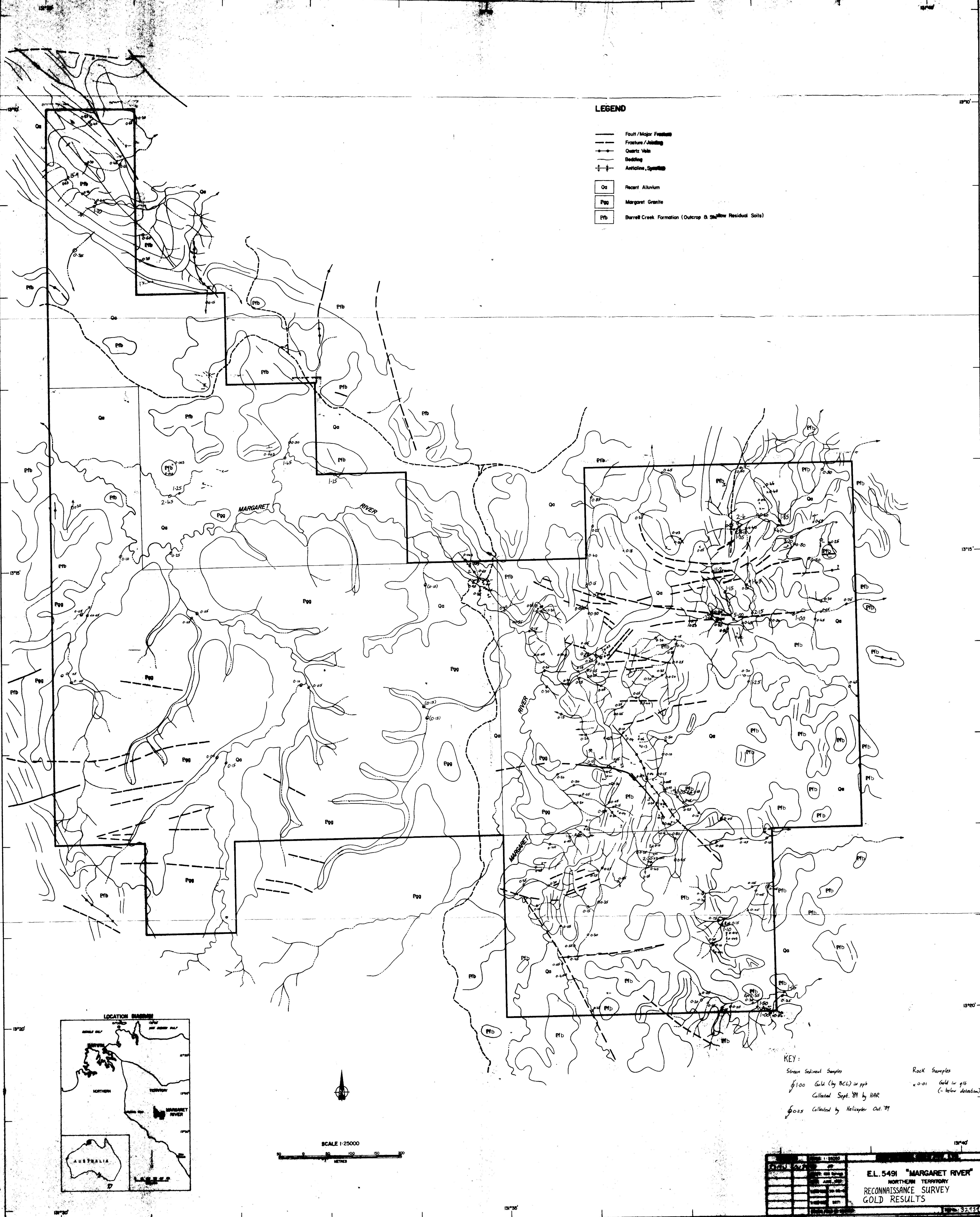
9382 = Sample No. 66

Rock Sample:

9382 = Sample No. QP6

RECONNAISSANCE SURVEY  
SAMPLE NUMBERS

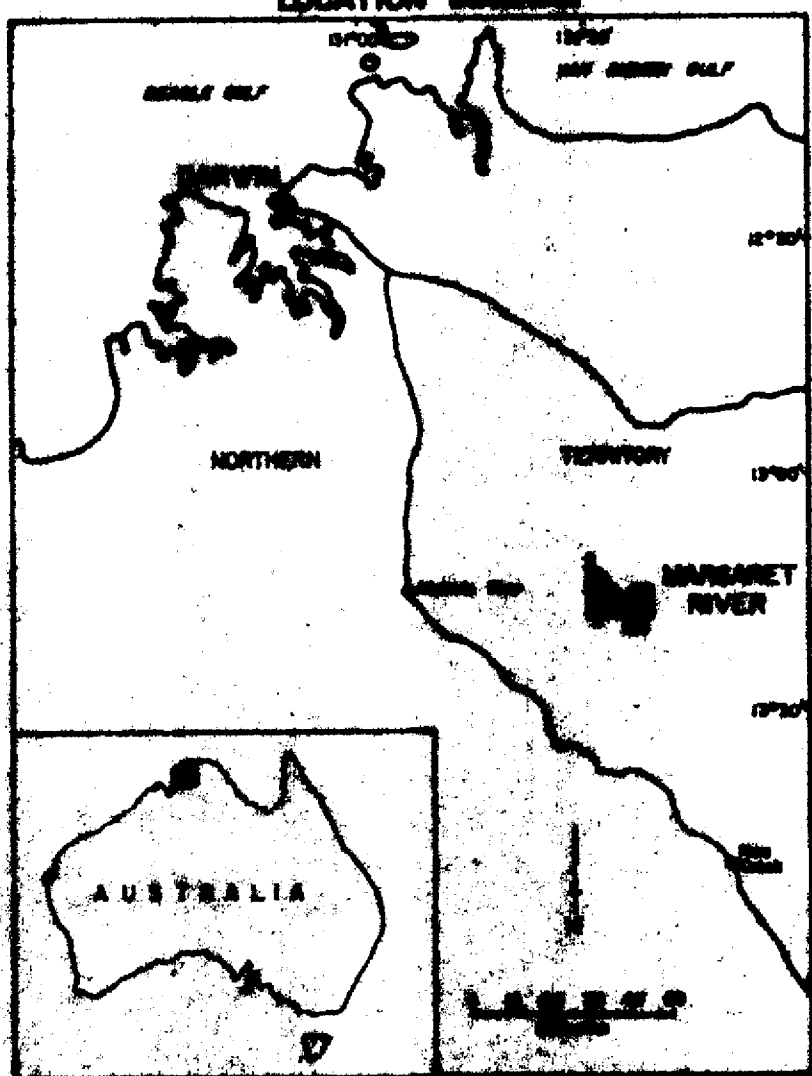




LEGEND

- Fault / Major Fracture
- - - Fracture / Jointing
- Quartz Vein
- - - Bedding
- Anticline, Syncline
- Qa Recent Alluvium
- Pgg Margaret Granite
- Pfb Barrell Creek Formation (Outcrop & Shallow Residual Soils)

LOCATION MAP



SCALE 1:25000

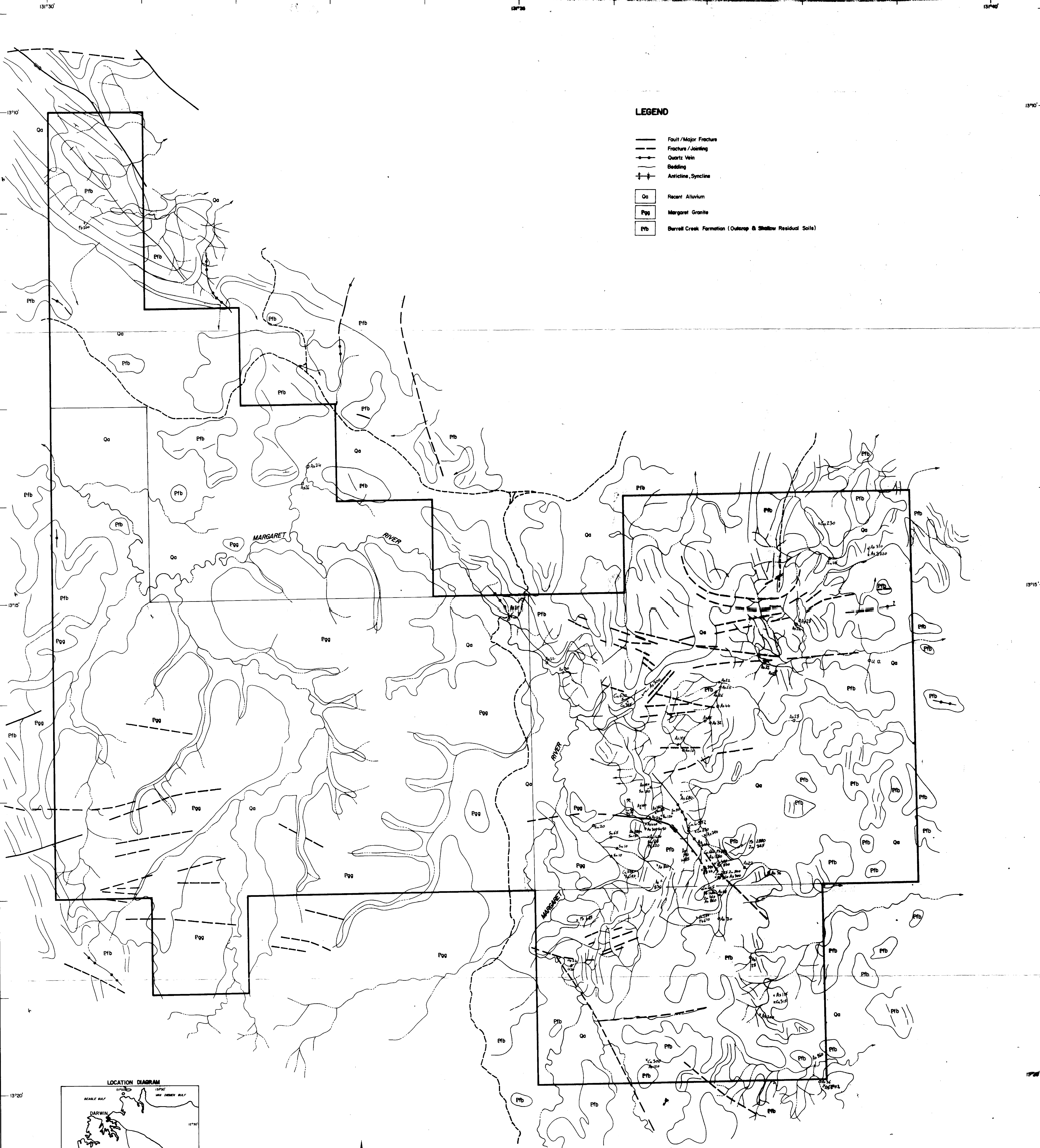
0 50 100 150 200 METRES

KEY:

- Stream Sediment Samples
- Rock Samples
- 0.100 Gold (by BCL) in g/t
- 0.001 Gold in g/t
- Collected Sept. 89 by HAR
- (- below detection)
- 0.025 Collected by Helicopter Oct. 89

E.L. 5491 "MARGARET RIVER"  
NORTHERN TERRITORY  
RECONNAISSANCE SURVEY  
GOLD RESULTS

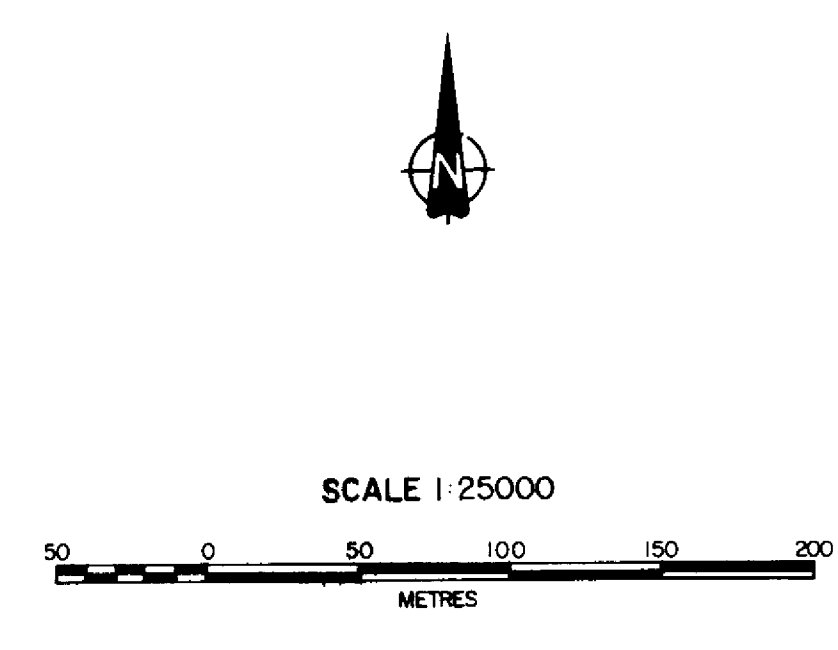
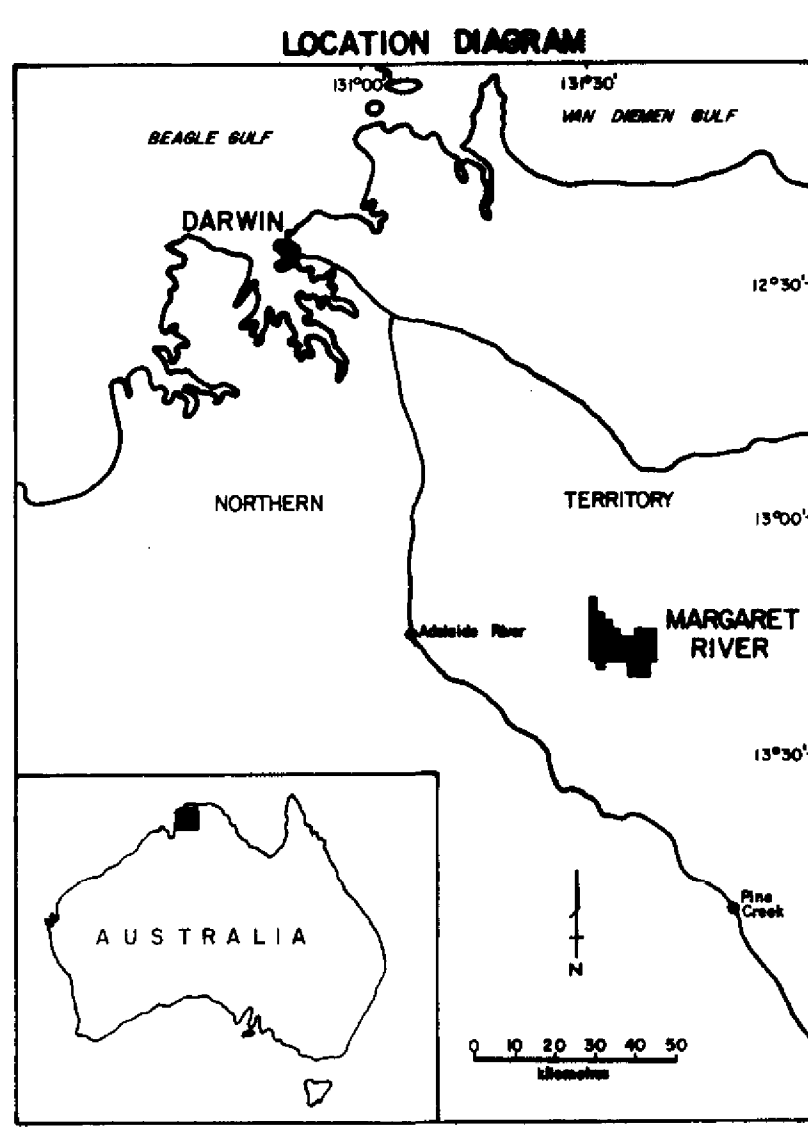




**LEGEND**

— Fault / Major Fracture  
--- Fracture / Jointing  
--- Quartz Vein  
--- Bedding  
--- Anticline, Syncline

Qa Recent Alluvium  
Pgg Margaret Granite  
Pfb Burrell Creek Formation (Outcrop & Shallow Residual Soils)



**KEY:**

Stream Sediment Survey (x)		Rock Sampling (x)	
Cu, Pb, Zn	Values over 100 ppm plotted	Pb, Cu, Zn	values over 200 ppm plotted
Ag	2 g/t plotted	Ag	3 g/t plotted
As	20 ppm plotted	As	100 ppm plotted
Mo	Values all below 5 ppm	Sn	50 ppm plotted
Sn	Values over 5 ppm plotted	W	50 ppm plotted
U	Values over 10 ppm plotted	Ta	peaks at 10 ppm
		Nb	peaks at 64 ppm

CR91/076

REVISION		SCALE: 1:25000		CARPENTARIA GOLD PTY. LTD.	
EDM/W	26/87	DATE	JUN 1988	E.L. 5491 "MARGARET RIVER"	
		DRAWN BY	COB Surveys	NORTHERN TERRITORY	
		DATE	JUNE, 1988	RECONNAISSANCE SURVEYS	
		1:50000	SD 52-4	BASE METAL RESULTS	
		1:50000	5271		
BORNEO FIELD OR DISTRICT					

SDS No.: 326400

South



Scale  $\pm 1: 10\,000$

799 Stream Sediment Sample (770---)  
 (0.10) Gold Value (B.E.L.) p.p.b.

8.343  
9(-) White quartz rock sample (QP 086---)  
with gold value in g/t. Dash denotes  
below 10 ppb.

REVISION		SCALE: 1:1000	CARPENTARIA GOLD PTY. LTD.	
		GEO RDMW/68	MARGARET RIVER EL 5491 N.T. NORTHWEST GEOCHEMICAL GOLD ANOMALIES Check Sampling.	
		DRAFT: RDMW		
		DATE: Oct 89		
		1:250 000 5052-8		
		1:100 000 5271		
		MINING FIELD OR DISTRICT: Northern Mineral Field, N.T.	DRG No.: 32944	