M.I.M. EXPLORATION PTY. LTD.

TECHNICAL REPORT

No. 1982

EXPLORATION LICENCE NO. 7233 "ST VIDGEON" N.T.

PARTIAL RELINQUISHMENT REPORT:

YEAR ENDED 10.01.1994

ISSUING DEPARTMENT:	EXPLORATION
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DATE:	MARCH 1994
1:250 000 MAP SHEET:	URAPUNGA (SD53-10)
1:100 000 MAP SHEET:	URAPUNGA (5868).

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CONTENTS

1.0 INTRODUCTION AND SUMMARY

Exploration Licence No. 7233 is located immediately south of the Roper River on St Vidgeon Station, Northern Territory (Figure 1). It was granted to Mount Isa Mines Limited on the 10th January 1991 for a term of six years.

The Licence is located on a local gravity and magnetic high in the Urapunga Tectonic Ridge, a part of the McArthur Basin where the sedimentary sequence is thinner than to the north or south. Major north-south and east-west faults converge in the Licence. Both McArthur Group (Vizard Formation) and Nathan Group (Balbirini Dolomite) outcrop.

The Licence was reduced from 84 blocks to 42 blocks as part of the fourth year partial relinquishment, effective from 10th January 1994.

This report describes the exploration carried out on those parts relinquished from EL 7233, since the original date of grant of the Licence.

Regional stream sediment sampling, and rock chip sampling formed the basis of the exploration in the area. Results did not delineate targets that warranted detailed follow-up work.

A regional stream sediment sampling orientation program highlighted the -200 mesh sieve fraction as the most useful in copper and base metal exploration. Follow-up sampling however, only produced inconclusive results.

No evidence of gold mineralisation has been found to support past claims of gold workings in the area. Gold assay results from rock chip samples failed to register above the detection limit of 0.01 ppm Au.

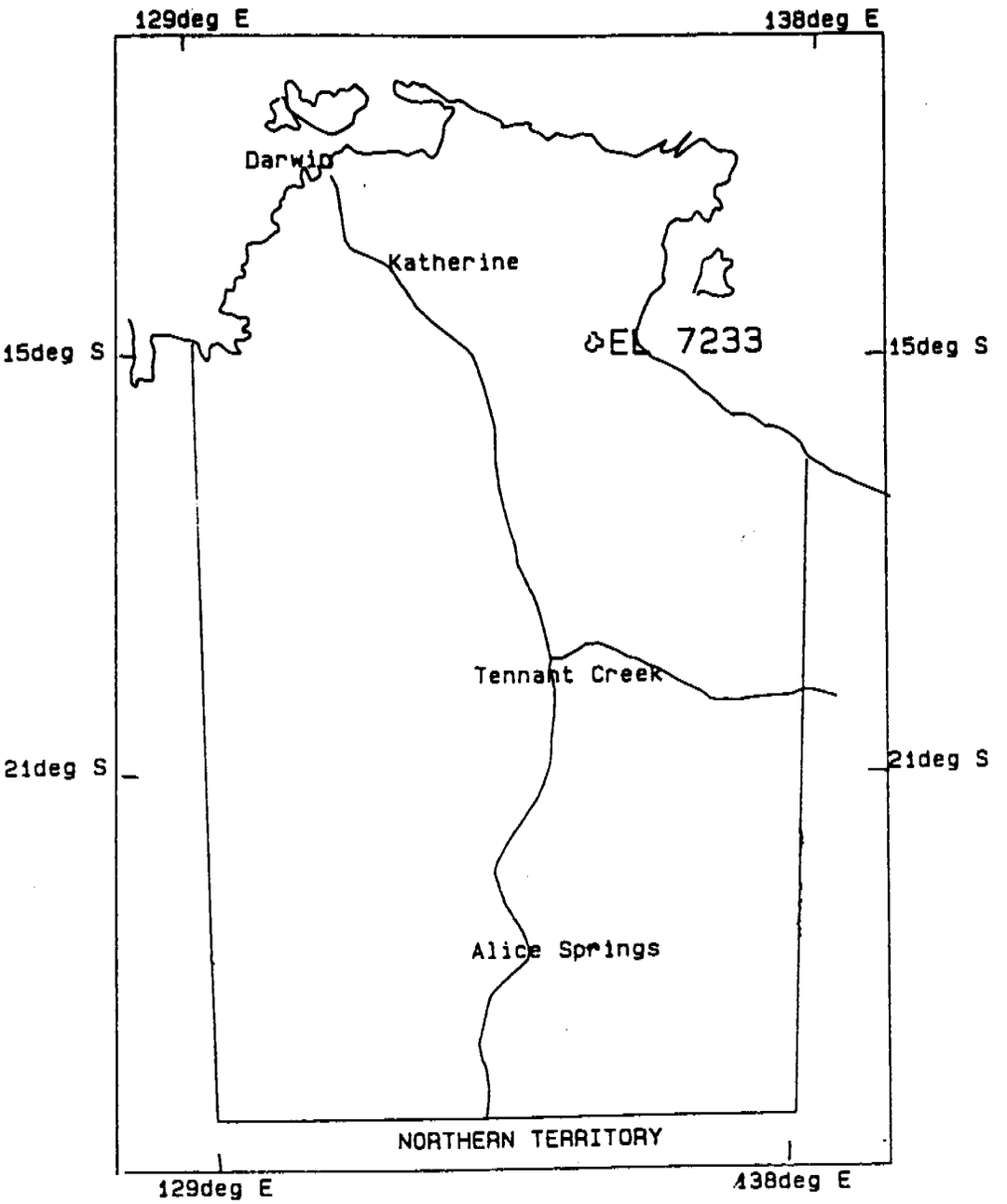

FIGURE 1

EL 7233 "ST VIDGEON"
LOCATION MAP

2.0 LOCATION AND ACCESS

Exploration Licence No. 7233 is located immediately south of the Roper River on St Vidgeon Station about 500 kilometres south-east from Darwin, Northern Territory.

The location of EL 7233 is shown on Figure 1.

The Exploration Licence is located on the Urapunga 1:250 000 geological sheet (SD53-10) and on the 1:100 000 Urapunga topographic sheet (5868).

Access to the northern part of the Licence is via the Roper Highway from Mataranka or via the Nathan River Road from the Roper Bar turn-off on the Carpentaria Highway. A track which turns southeast about 1 kilometre east of the Queensland Crossing on the Hodgson River allows access to the southern part of the area.

During a normal 'Wet Season' the Queensland Crossing on the Hodgson River is closed to vehicular traffic. Much of the central part of the Exploration Licence can only be reached by helicopter at these times.

The Roper Group (Middle Proterozoic) forms resistant mesas and cuestas with a maximum elevation of 140 metres. The Vizard Formation and Balbirini Dolomite (Middle Proterozoic) produce low lying plateau with more resistant dolomites and sandstones forming low strike ridges. Most streams drain towards the Roper River.

Vegetation is open sclerophyll forest over most of the area although thick stands of lancewood are found in the southern part on the Balbirini Dolomite plateau.

3.0 TENURE

Exploration Licence No. 7233 was granted to Mount Isa Mines Limited on the 10th January 1991 for a term of six years. The Exploration Licence originally consisted of 169 blocks with an area of 544 square kilometres. For the third year partial relinquishment a total of 85 blocks were dropped, reducing the EL to 84 blocks with an area of 270.48 square kilometres. For fourth year partial relinquishment 42 blocks were dropped, leaving 42 blocks with an approximate area of 135 square kilometres. The new and original borders of the EL are shown in Figure 2.

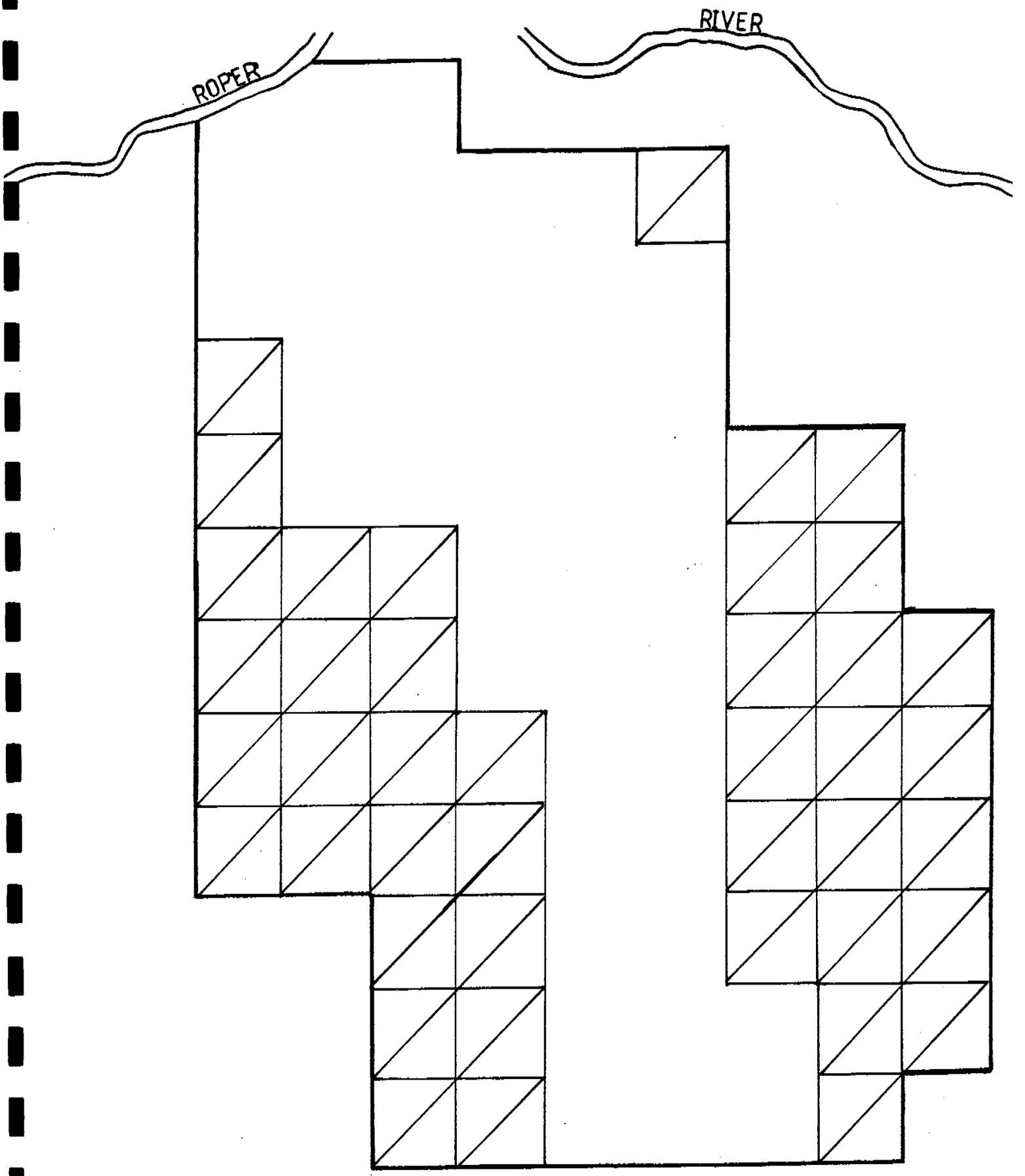

FIGURE 2

EL 7233 BOUNDARY MAP
BEFORE AND AFTER RELINQUISHMENT

RELINQUISHED AREAS

SCALE 1:100 000

4.0 GEOLOGY

Most of the EL overlies the central section of the Urapunga Tectonic Ridge, which forms a part of the McArthur Basin in which the sedimentary sequence has been condensed. The general structure is an anticline which is displaced by a number of north-south and northwest-southeast faults. Dips are gentle, rarely exceeding 20°.

The Vizard Formation crops out in the core of the anticline. This formation is correlated with the McArthur Group (Jackson et al, 1987). It is about 150 metres thick and consists of a sequence of dolomites, quartz arenites, siltstones and shales. The carbonate content decreases up the sequence. Five units can be identified:

5. Thin bedded quartz arenites and siltstones. (top of sequence)
4. Shales with siltstone and rare chert and dolomite.
3. A very white quartz arenite.
2. Dolomite and Siltstones.
1. Dolomites often with silica replacement.

Two pink chert beds in unit 4 can be traced over wide areas. These are most likely tuffaceous.

Lying unconformably on the Vizard Formation is the Nathan Group which comprises the Smythe Sandstone Member, Balbirini Dolomite and the Yalwarra Volcanic Member.

The Smyth Sandstone Member (formerly the Mt Birch Sandstone) is a very uniform quartzarenite which produces moderate relief. At the base is a very distinctive boulder conglomerate bed which outcrops best on the eastern side of Nagi Hill (722 501 AMG).

The Balbirini Dolomite (formerly the Kookaburra Creek Formation) lies conformably on the Smythe Sandstone Member. This is a sequence of siliceous dolomites, sandstones and shales. It forms a low plateau over most of the western part of the E.L. which has very little drainage and a number of sinkholes. The dolomites are oolitic and stromatolitic.

The Yalwarra Volcanic Member which is interbedded with the Balbirini Dolomite consists of amygdaloidal mafic volcanics, agglomerates and minor feldspathic sandstones.

Above the Nathan group is the Roper Group. The two are separated by a major regional unconformity although this is not seen in the Exploration Licence. The Limmen Sandstone, the lowest formation in the Roper Group, produces the major relief on the margins of the area. It is a sequence of fine-grained, massive quartzarenite with interbedded micaceous siltstone.

Linear quartz-veined siliceous breccias outcrop along the major north-south and northwest-southeast faults. These faults are related to the Showell Fault Zone and appear to post-date the Roper Group.

5.0 PREVIOUS WORK

In 1957 a helicopter survey by Enterprise Exploration Company noted the "siliceous gossans" about 4 miles south of Roper River. A mention is also made of "gold at Mt Birch, 4 miles southwest of the Roper River Mission" (Patterson, 1958).

In 1958/59 BHP held the ground under Authority to Prospect 691. They mapped and sampled the "siliceous gossans" noted by Enterprise Exploration Company. Four shallow trenches were dug and one diamond drill hole was completed (MV 29DDH) in late 1958. No significant mineralisation was intersected (Bennett, 1959).

Geopeko held part of the area as AP 1436 from 1965 to 1966. They concentrated on the Yalwarra Volcanic Member's potential for base metal mineralisation (Swarbrick, 1966).

CRA held part of the area as EL 873 in 1973/74 looking for stratiform lead-zinc deposits. Their main target was the Kookaburra Creek Formation (now redefined as the Balbirini Dolomite). Exploration work included 1:50,000 scale geological mapping and geochemical soil and drainage sampling. All stream sediment samples were assayed from the -80 mesh fraction. Maximum values were 30 ppm for lead and zinc in stream sediment samples and 130 ppm Pb in soils. It was concluded that these values were insignificant and the area was dropped (Polkinghorne & Rudd, 1974).

From 1978 to 1981, W.M.C. spent $161,000 exploring for stratiform Cu-Pb-Zn in EL 1711 which included the southern part of EL 7233. They carried out photogeology, soil sampling, induced polarisation surveys and percussion drilling over areas of Mt Vizard Formation. Results were very discouraging (Hancock, 1982).

In 1981, Geopeko held the area briefly as EL 2532 but after a literature review and consideration of the possibility of an Aboriginal Land Claim they surrendered the ground (O'Conner, 1981).

Ashton Mining Limited carried out a search for diamonds under EL's 3355 and 3356. Results were negative (Ward and McCormick, 1983).

Exploration Licence No. 5751 (which covers the same area as the present tenement) was granted to Mr Lutz Frakenfeld in March 1988 on whose behalf Homestake Australia Limited carried out a BLEG (Bulk Leach Extractable Gold) sampling program designed to quickly assess the gold potential of the area. The highest result was 0.17 ppb Au. No further exploration work was completed (Orridge, 1989).

6.0 EXPLORATION BY M.I.M. EXPLORATION PTY LTD

Exploration of the Licence was originally divided into two phases. The first was a regional helicopter supported stream sediment sampling program. The second was a rock chip sampling program.

6.1 Stream Sediment Sampling

A small number of stream sediment samples were taken during a regional orientation survey of the area. Four of these samples were taken from the relinquished area in the western part of the EL (827526, 527, 531 and 536) and one sample was taken from the eastern part of the EL (827545). The sample locations are shown on Drawing No. 33436A, with the anomalous Cu results shown on Drawing No. 33438A.

The stream sediment samples were sieved to four size fractions to determine which fraction gave the most representative results. The four size fractions are listed below:

-20 to +35 mesh
-35 to +80 mesh
-80 to +200 mesh and
-200 mesh.

The four size fractions were assayed for Cu, Pb, Zn, Ni, Co, Bi, Mn, Fe and Ba. The results are tabulated in Appendix 1, and the peak result for each element is listed below:

Element	Method	Result	Sample	Size
Cu	AAS1	160 ppm	827536	-200 mesh
Pb	AAS1	42 ppm	827545	-20 +35 mesh
Zn	AAS1	45 ppm	827536	-20 +35 mesh
Ni	AAS1	62 ppm	827545	-20 +35 mesh
Co	AAS1	140 ppm	827545	-20 +35 mesh
Bi	AAS1	<10 ppm	all	all
Mn	AAS1	6900 ppm	827545	-20 +35 mesh
Fe	AAS1	18.7 %	827527	-20 +35 mesh
Ba	XRF1	1200 ppm	827545	-20 +35 mesh

The -200 mesh fraction was interpreted as giving the most representative results, and it was decided that the -200 mesh fraction was the most useful for copper and base metal exploration in the Licence area.

Five more stream sediment samples (825974-98) were taken in the western part of the area. These were of -80 to +200 mesh sieve fraction, and were assayed for Cu, Pb, Zn, Fe, Mn and Ba. The sample locations are shown on Drawing No. 33436A, with the anomalous Cu results shown on Drawing No. 33438A. The results are tabulated in Appendix 1, and the peak result for each element is listed below:

Element	Method	Result	Sample	Size
Cu	AAS2	18 ppm	825976	-80 mesh
Pb	AAS2	8 ppm	825976	-80 mesh
Zn	AAS2	34 ppm	825978	-80 mesh
Fe	AAS2	1.95 %	825974	-80 mesh
Mn	AAS2	260 ppm	825976	-80 mesh
Ba	XRF1	115 ppm	825978	-80 mesh

The sampling failed to produce significant results. No further stream sediment sampling was undertaken.

6.2 Rock Chips

One rock chip sample (QP 097506) was taken from the relinquished area in the western parts of the Licence in conjunction with the orientation stream sediment survey. Its location is shown on Drawing No. 33437A, and the assay results are tabulated in Appendix 2. The peak results are listed below:

Element	Method	Result
Cu	AAS2	15 ppm
Pb	AAS2	10 ppm
Zn	AAS2	8 ppm
Fe	AAS2	8400 ppm
Mn	AAS2	120 ppm
As	AAS2	<50 ppm
Ag	AAS2	<1 ppm
Mo	AAS2	2 ppm
Au	FA1	<0.01 ppm

6.3 Gold Mineralisation

Despite past claims of gold workings in the area, none of the rock chip samples assayed for gold returned values above the detection limit of 0.01 ppm.

7.0 CONCLUSIONS

The original orientation and follow up stream sediment surveys have produced low and inconclusive results. Hence, a decision was made to relinquish these areas, and concentrate work on the more central part on the Licence.

No evidence of gold mineralisation has been found to support past claims of gold workings in the area.

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APPENDIX 1

STREAM SEDIMENT SAMPLING ASSAY RESULTS

Final

ANALYTICAL REPORT

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Mn
827526 -20 +35#	11	27	13	8	<4	<10	140
827526 -35 +80#	10	11	6	12	<4	<10	43
827526 -80 +200#	11	8	6	12	<4	<10	36
827526 -200#	23	36	14	9	5	<10	61
827527 -20 +35#	13	11	12	6	<4	<10	130
827527 -35 +80#	12	10	15	14	4	<10	170
827527 -80 +200#	14	6	10	21	6	<10	250
827527 -200#	27	16	17	15	17	<10	740
827531 -20 +35#	19	24	16	19	14	<10	240
827531 -35 +80#	8	<4	8	14	<4	<10	63
827531 -80 +200#	8	<4	8	13	4	<10	71
827531 -200#	66	15	39	11	10	<10	330
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	2	4	2	4	4	10	4
SCHEME	AAS1	AAS1	AAS1	AAS1	AAS1	AAS1	AAS1

Final

ANALYTICAL REPORT

SAMPLE	Cu	Pb	Zn	Ni	Co	Bi	Mn
827536 -20 +35#	18	22	45	15	10	<10	810
827536 -35 +80#	8	<4	4	8	<4	<10	97
827536 -80 +200#	9	<4	5	16	5	<10	140
827536 -200#	160	15	41	54	13	<10	950
827545 -20 +35#	36	42	30	62	140	<10	6900
827545 -35 +80#	10	5	9	16	11	<10	190
827545 -80 +200#	16	5	10	12	11	<10	290
827545 -200#	120	28	42	22	25	<10	640
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	2	4	2	4	4	10	4
SCHEME	AAS1	AAS1	AAS1	AAS1	AAS1	AAS1	AAS1

Final

ANALYTICAL REPORT

SAMPLE	Fe	Ba	Weight
827526 -20 +35#	15.3%	95	182.19
827526 -35 +80#	1.00%	30	161.98
827526 -80 +200#	9880	30	144.10
827526 -200#	1.04%	80	21.44
827527 -20 +35#	18.7%	110	165.93
827527 -35 +80#	1.33%	50	143.07
827527 -80 +200#	1.74%	60	145.44
827527 -200#	2.00%	165	32.91
827531 -20 +35#	8.86%	160	91.59
827531 -35 +80#	9500	20	151.93
827531 -80 +200#	7980	15	166.32
827531 -200#	1.12%	110	6.45
UNITS	ppm	ppm	grams
DET.LIM	4	10	0.01
SCHEME	AAS1	XRF1	PREP0
UPPER SCHEME	AAS1C		

CLASSIC LABORATORIES LTD

Job: 1DN0350B
O/N: 827501

Final

ANALYTICAL REPORT

SAMPLE	Fe	Ba	Weight
827536 -20 +35#	17.7%	175	181.50
827536 -35 +80#	9500	25	203.48
827536 -80 +200#	1.15%	35	133.14
827536 -200#	1.62%	270	6.15
827545 -20 +35#	15.2%	1200	133.87
827545 -35 +80#	1.22%	40	169.88
827545 -80 +200#	1.24%	55	194.10
827545 -200#	1.68%	250	7.72
UNITS	ppm	ppm	grams
DET.LIM	4	10	0.01
SCHEME	AAS1	XRF1	PREP0
UPPER SCHEME	AAS1C		

CLASSIC LABORATORIES LTD

Job: 1DN0797
O/N: 825963

Final

ANALYTICAL REPORT

SAMPLE	Cu	Pb	Zn	Fe	Mn	Ba
825974 -80 mesh	12	5	20	1.95%	70	80
825975 -80 mesh	11	5	12	1.14%	135	70
825976 -80 mesh	18	8	20	1.55%	260	110
825977 -80 mesh	10	<4	12	1.23%	62	80
825978 -80 mesh	18	8	34	1.90%	110	115
UNITS	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	2	4	2	5	4	10
SCHEME	AAS2	AAS2	AAS2	AAS2	AAS2	XRF1

APPENDIX 2

ROCK CHIP SAMPLING ASSAY RESULTS

CLASSIC LABORATORIES LTD

Job: 1DN0350E
O/N: 827501

Final

ANALYTICAL REPORT

SAMPLE	Cu	Pb	Zn	Mn	Fe	As	Ag
QP097506	15	10	8	120	8400	<50	<1
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm
DET.LIM	2	4	2	4	5	50	1
SCHEME	AAS2	AAS2	AAS2	AAS2	AAS2	AAS2	AAS2
UPPER SCHEME				AAS2C			

Final

ANALYTICAL REPORT

SAMPLE	Au	Au1	Mo
QP097506	<0.01	--	2
UNITS	ppm	ppm	ppm
DET.LIM	0.01	0.01	1
SCHEME	FA1	FA1	AAS2

460000mE 465000mE 470000mE 475000mE 480000mE 485000mE 490000mE 495000mE

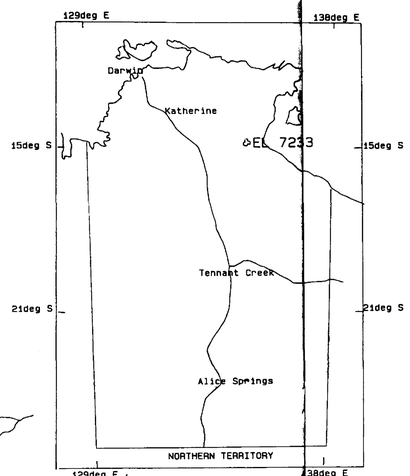
8370000mN 8365000mN 8360000mN 8355000mN 8350000mN 8345000mN

ROPER RIVER

506

460000mE 465000mE 470000mE 475000mE 480000mE 485000mE 490000mE 495000mE

Locality Diagram



NOTES :
Rock Chip Sample Locations and Results

Range
Prefix for 500 nos. is QP097
Order : Cu Pb Zn

50 to 99 ppm = Green
100 to 149 ppm = Black
Greater than 150 ppm = Red

This map is compiled from the URAPUNGA 1:100000 sheet (5868)

AMG GRID

SCALE	DATE	SHEET
1:50000	24/01/92	1 of 1
	REF No. 33437 A	REVISED 3/94 RSL

0 2500 5000m

E.L.7233"St Vidgeon" N.T.
Rock Chip Geochemistry
Locations and Results
Copper, Lead and Zinc

M.I.M. EXPLORATION
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NORTHERN TERRITORY

460000mE 465000mE 470000mE 475000mE 480000mE 485000mE 490000mE 495000mE

8370000mN

8365000mN

827

526

531

525

976

977

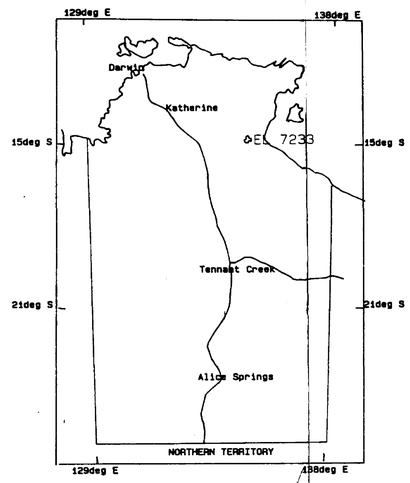
975

978

974

134deg 50'E

Locality Diagram



NOTES :
Stream Sediment Sample Locations

Prefix for samples is 827

Triangles = Bulk Leach Extractable Gold

Squares = Pan Concentrates
Circles = Sieve Samples for Base Metals
Triangles = Bulk Leach Extractable Gold

This map is compiled from the URAPUNGA 1:100000 sheet (5868)

AMG GRID

SCALE	DATE	SHEET
1:50000	07/02/92	1 of 1
	REF No. 33436 A	REVISED 3/94 RJSL

0 2500 5000m

E.L.7233"St Vidgeon" N.T.

STREAM SEDIMENT SAMPLE LOCATION MAP

M.I.M. EXPLORATION PTY. LTD.
NORTHERN TERRITORY

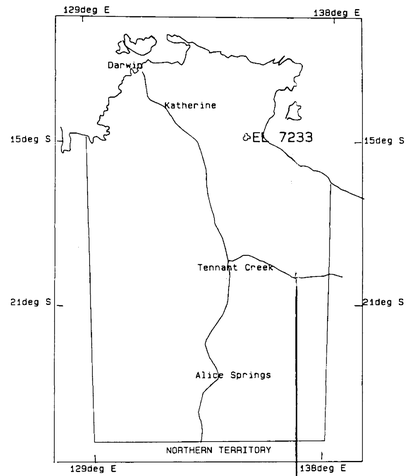
460000mE 465000mE 470000mE 475000mE 480000mE 485000mE 490000mE 495000mE

8370000mN 8365000mN 8360000mN 8355000mN 8350000mN 8345000mN

120

160

Locality Diagram



NOTES :
Anomalous Copper Stream Sediment Results

Range
0 to 49 ppm = Blank
50 to 100 ppm = Green
101 to 150 ppm = Black
Greater than 150 ppm = Red
Triangles = Bulk Leach Extractable Gold

Squares = Pan Concentrates
Circles = Sieve Samples for Base Metals
Triangles = Bulk Leach Extractable Gold

This map is compiled from the URAPUNGA 1:100000 sheet (5868)

AMG GRID

SCALE	DATE	SHEET
1:50000	24/01/92	1 of 1
	REF No. 33438A	REVISED 3/94 RSL

0 2500 5000m

E.L.7233"St Vidgeon" N.T.
Anomalous Copper Stream Sediment RESULTS

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NORTHERN TERRITORY