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E.L. 2848 PIKER POCKET

NORTHERN TERRITORY

FINAL REPORT

DIAMOND, PRECIOUS AND

BASE METALS EXPLORATION

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MINERAL DEPOSITS LIMITED

OCTOBER 1982

SUMMARY

Exploration activity over E.L. 2848 during the period of tenure was directed at the location of base metals, precious metals and diamonds. Two discrete programmes were undertaken, employing the following methods.

For base and precious metals' exploration, stream sediment sampling, soil and rock sampling, geological mapping and geophysical traversing were carried out by Mineral Deposits Limited. Ashton Mining Limited, in joint venture with Mineral Deposits Limited, was the manager and operator of the regional gravel sampling programme to test for kimberlitic rock indicator minerals and diamonds.

No significant new mineral locations were found during the base and precious metals programme. However, an anomalous zone named Casper isolated by an earlier explorer, was mapped and resampled and found to be anomalous in Cu, Ba and Hg.

Twelve regional gravel samples were collected and processed by Ashton, for diamond indicator minerals. At one location in Scissors Creek abundant andradite garnets were noted. Two series of follow-up gravel sampling traverses were carried out. The eight additional samples were duly processed but no further anomalous results were returned.

A recommendation to relinquish the E.L. 2848 was implemented on 24 August, 1982, effective 30 August, 1982.

CONTENTS

1. INTRODUCTION

1.1 Location and Tenure

Exploration Licence 2848, Piker Pocket (longitude 131°10'E, latitude 14°44S) is located approximately 120 km in a direct line south-west of Pine Creek which is situated on the Stuart Highway 248 km south of Darwin (see Figure 1).

E.L. 2848 was held in the name of Mineral Deposits Limited and was granted on 27 April, 1981 for an initial term of 12 months with a minimum expenditure covenant of $10,000. Renewal of the licence was granted on 11 May, 1982 by the Department of Mines and Energy for a further 12 months tenure.

Exploration Licence 2848 was surrendered on 24 August, 1982. The exploration licence covered an area of 132.4 sq. km. and straddled the Flora River and Scissors Creek.

1.2 Regional Geology

The oldest geological unit cropping out within the E.L. is Adelaidean or Carpentarian age Bynoe Formation (a unit of the Bullita Group). Lithologies represented include siltstones, dolomitic siltstones and dolomite, and the rocks crop out in the north-western and south-western corners of the E.L. Conformably overlying the Bynoe Formation is the most significant unit - the Banyan Formation - which is the upper member of the Bullita Group. Lithologies include stromatolitic limestone and dolomite, oolitic limestone, calcareous siltstone, sandstone and chert bands. The Banyan Formation covers a major part of the E.L. and is regarded as the likely host for Pb/Zn mineralization.

In the eastern part of the E.L., the Lower Cambrian Antrim Plateau Volcanics are represented by a large flow of vesicular basalt.

Columnar basalt residuals are mapped along the eastern bank of Piker Pocket Creek. The extent of the basalt flow has been governed by a monoclinal structure in the older rocks trending west-north-west on the southern side of Flora River.

Cainozoic sand and soil covers the basalt flow almost entirely. Topographic highs are also capped with the Cainozoic sand cover elsewhere in the E.L. Quaternary alluvium has been deposited on the flood plains of Flora River and its tributaries.

In addition to the monocline mentioned above, a normal fault with its downthrown block to the east trends north-south, centrally through the E.L.

Throughout the southern half of the E.L. the Bynoe and Banyan Formations' sediments dip at steep angles and strike in west-north-westerly direction parallel to the Flora River Monocline and the other structural influence in the region, the Wombungi Fault which lies outside the E.L. to the south. In the northern half of the E.L., the

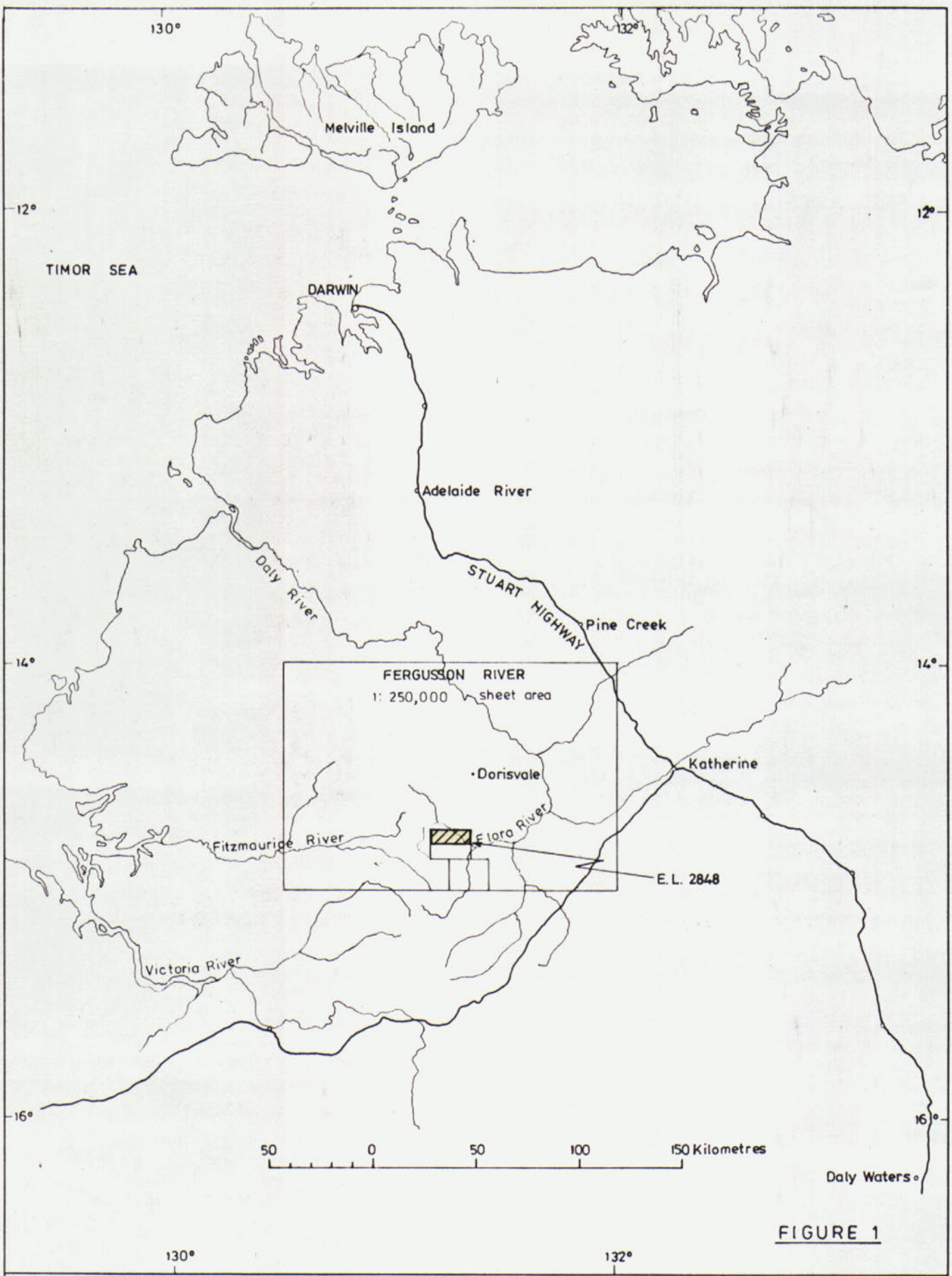

FIGURE 1

MINERAL DEPOSITS LIMITED,- SOUTHPORT, QUEENSLAND.	NUMBER: A4-0020
	TRACED: J.B.F.
E.L. 2848 PIKER POCKET N.T. LOCATION MAP DARWIN-KATHERINE AREA, N.T.	DRAWN: F.W.C.
	DATE: 7·5·82
	SCALE: 1: 2,500,000

CR 82/338.

Proterozoic sediments are flat lying.

This geological summary has been compiled from regional mapping carried out by Mineral Deposits Limited geologists and from the descriptions contained on the Fergusson River 1:250,000 geological sheet SD/55-12 (Pontifex and Mendum, 1972).

1.3 Physiography

The physiography of the E.L. is controlled, in the main, by the course of the Flora River which has been influenced by the structural features, the Flora River Monocline and the Wombungi Fault. The plateau area in the south of the E.L. is a horst structure and is drained by the tributaries of the Flora River. The Flora River maintains a straight course, flowing parallel to and on the downthrown side of the Flora River Monocline. The river traverses the basalt flow which is now seen as a flat plain with sparse vegetation cover. A few small basalt capped buttes are distributed across the E.L.

Flora River flows all year round and its course is lined with *Melaleuca* and pandanus. Bloodwoods, ironbarks and other eucalypts occur in open forest away from the water courses and spinifex *(Triodia Sp.)* grows on the rocky ridges.

1.4 Exploration Objectives and Genetic Considerations

The exploration objectives over the region were to locate Pb/Zn/Cu mineralisation of the Mississippi Valley type and Au within the dolomites of the Banyan Formation and to detect diamonds or diamond indicator minerals.

The association of dolomitic rocks, halite casts, possible gypsum layers, biohermal layers, algal reef situations and observable lead and zinc mineralisation, suggests an environment similar to the Mississippi Valley and/or Sabkha types. The distribution of such mineralisation as orebodies is considered to be controlled by palaeogeography. Superimposed on the palaeogeography creating favourable trap situations faulting is often found to have occurred. (Stanton, 1971) (Keene, 1971) (Renfro, 1974).

The lithologies of the Banyan Formation, particularly the massive oolitic and stromatolitic dolomites within the middle dolomite sequence and the presence of the Wombungi Fault and the Flora River Monocline support these concepts. Thus the search for base metals was concentrated on areas with outcropping Banyan Formation.

A record of anomalous Hg at Casper suggested that Carlin style gold may occur in the dolomitic rocks of the Banyan Formation. Gold and mercury geochemistry was undertaken on anomalous base metal samples from Casper to test this concept.

The base and precious metals programme was carried out by Mineral Deposits Limited as part of an integrated exploration project over a group of 12 contiguous exploration leases in the Flora River headwaters. Ashton Mining Limited conducted the EL 2848 diamond programme also as part of a regional exploration project over a large joint venture area

west of the Daly River Basin.

The exploration work was carried out during the 1981 dry season.

2. BASE AND PRECIOUS METALS EXPLORATION

Reconnaissance stream sediment and soil sampling were carried out initially. Follow-up soil sampling, rock chip sampling, geological mapping and magnetics traversing were completed over the Casper Grid area. Control was achieved using airphotos (Comm. of Aust, 1962) and LANDSAT (CSIRO, 1977).

2.1 Stream Sediment Geochemistry - Methods

20 samples were collected from Flora River tributaries. Preparation in the field consisted of sieving to -10#. The samples were freighted to the Mineral Deposits Limited laboratory, Southport, for further preparation and analysis. The procedure employed was as follows:

Samples were sieved to -20# and this fraction was pulverised to -80#. A 0.5 gm split was digested in perchloric acid ($HClO_4$) for one hour at 180°C and determined for Cu, Pb and Zn. 6 samples were determined for Ni.

2.2 Stream Sediment Geochemistry - Results

The locations are plotted on figure 3 and the results are listed in Appendix A. Background values only were returned.

2.3 Soil Geochemistry - Methods

2.3.1 Reconnaissance Soil Sampling

Reconnaissance soil sampling was carried out over five locations within EL 2848. Traverses were surveyed with tape and compass (Glauser MK4 prismatic no. 1271) and samples were collected at 50m intervals from a depth of 10-15 cm in a poorly formed B horizon.

Traverse details are listed in Table 1 below:

Traverse Name	No. of Samples	Orientation (Magnetic)	Rationale
Wallop	21	N - S E - W	Evaluation of malachite occurrence
Susan	17	N - S	Reconnaissance of Flora Fault
Banjo	11	N - S	Reconnaissance of Flora River Monocline
Hexagon	17	N - S	Evaluation of reported sphalerite/galena occurrence
Scissors	5	N - S	Check of previously reported radiometric anomaly (Geopeko, 1980) (B.M.R., 19?)
TOTAL	71		

TABLE 1 - Reconnaissance Soil Sampling

- MINERAL DEPOSITS EXPLORATION AREAS
- BAROID EXPLORATION AREAS RELINQUISHED
- MINERAL DEPOSITS AREAS RELINQUISHED
- RIVERS & STREAMS
- E.L. BOUNDARIES
- BUSH TRACKS

N

EL 2358
EL 2848
EL 2849
EL 2434
EL 1847
EL 1648
EL 2287
ELA 3021
ELA 3091
EL 2357
EL 1850
ELA 3083

Dorisvale
Flora River
Hayward Ck
Wombungi Outstation

Application is in abeyance due to an aboriginal land claim.

DARWIN
Pine Creek
Katherine
NORTHERN TERRITORY
Alice Springs

LOCATION PLAN

25 KILOMETRES
20 15 10 5 0 5

FIGURE 2

MINERAL DEPOSITS LTD.

NORTHERN TERRITORY E.L. AREAS

LOCALITY PLAN

Scale:	Date:	Number
1 250,000	6 · 7 · 81	A3 - 2001

CR82/338

The samples were submitted for preparation and analysis at Mineral Deposits Limited laboratory, Southport.

Soil samples were sieved to -80# using nylon sieve and cloth. When necessary the samples were lightly crushed with a mortar and pestle. A 0.5 gram split was digested in perchloric acid ($HClO_4$) for one hour at 180°C and determined by A.A.S. for Cu, Pb and Zn.

2.3.2 Casper Grid Soil Sampling

A 50 metre grid was surveyed over the Casper area using tape and compass. Sampling and preparation techniques were as described in 2.3.1.

Determinations for Cu, Pb and Zn on the 154 samples were carried out at Southport. 32 samples with anomalous base metals analyses were re-submitted for analysis for Sb, As, Hg, Au at Australian Laboratory Services at Everton Park.

Au was determined by the 120C method, *viz*, 30 gram of the -80# fraction was subjected to HF attack, aqua regia digestion, solvent extraction and carbon rod determination by A.A.S.

Sb, As and Hg were determined using the automatic computerised X.R.F. spectrometer.

2.4 Soil Geochemistry - Results

2.4.1 Reconnaissance Soil Sampling

The locations of the traverses are plotted on Figure 3 and the analyses listed in Appendix B.

Clearly, background values were returned from Hexagon, Susan, Wallop and Scissors. Banjo, which traversed the Flora River Monocline, returned slightly anomalous Cu and Pb results in two separate samples. However, the low absolute values and lack of continuity in the results meant that follow-up was not warranted.

2.4.2 Casper Grid Soil Sampling

The sample locations and results are plotted on the 1:1000 scale geological map, Figure 4.

The results confirmed the FIMCO values reported in Harrison (1971). An anomalous Cu area of about 400 m x 200 m (see Figure 6) is correlated with a dolomite bed showing smears of malachite and crystals of barite. Copper results peaked at 1376 ppm.

Mercury analyses were mostly <4 ppm, but a few recorded the limit of detection of 4 ppm.

The low magnitude of the anomalies discouraged further investigation to determine if post depositional sulphides are present and a determination of facies.

The analyses for Sb, Hg and Au are all at background levels indicating little likelihood of the presence of Carlin style gold mineralisation in the areas sampled.

PLATE 1 - Casper Area looking north-east from 1850E/ 1900N. Note band of red sandy soil, centre photo, with dolomite outcrop beyond

PLATE 2 - Close up of dolomite outcrop with hammer embedded in green "glauconitic shale"

2.5 Geological Mapping

The Casper Grid area (600 m x 500 m) was mapped at a scale of 1:1000 (see Figure 4).

The Upper Proterozoic Bullita Group, Banyan Formation, is represented locally by the following stratigraphic sequence -

Massive buff dolomite (youngest)
Finely bedded buff dolomite
Grey marl
Green glauconitic shale
Grey shale
Red marl
Sandstone
Dolomitic limestone (oldest)

The two oldest rock types, sandstone and interbedded dolomitic limestone, crop out in the south-west corner of the area, dipping uniformly to the north-east at 30°. The relative age relationship between these beds and those of the anomaly proper is uncertain. An alluvial cover obscures the area between the outcrops.

The main outcrop displays the sequence of the remaining rock types dipping gently (3-10°) to the south east, and disappearing beneath a broad alluvial plain. The beds appear to show maximum thickness of about one metre.

The following scree and soil types were mapped:

Light brown alluvium and soil
Loose hematitic pebbles and gravel
Yellow limonite pebbles
Red sandy soil
Light brown soil over dolomite
Chert pebbles are represented as float.

Malachite smears on bedding planes and veinlets of barite were noted in the massive and finely bedded dolomites. A crimson mineral, possibly cinnabar, was also detected in minor quantities.

The soil geochemistry indicates clearly that the buff dolomite is the stratum containing the copper mineralisation.

2.6 Rock Chip Sampling

2.6.1 Methods

Two rock chip sampling traverses were completed across the strike of the Casper soil anomaly. A total of 12 samples were collected using the following method. Two centimetre cubes of outcrop (or subcrop) were collected at hammer handle spacing over intervals of up to 25 metres.

The samples were freighted to Southport for preparation. The rock chips were crushed and pulverised to -80# and analysed as described in 2.3.1 for Cu, Pb and Zn.

2.6.2 Results

The sample positions and results are plotted on Figure 6, together with copper-in-soil contours. Generally, anomalous rock chip sample analyses were returned for those samples collected from within the 500 ppm copper-in-soil contour. Contrasting the rock chip results (peak 496 ppm Cu) with the soil results (peak 1376 ppm Cu) it is evident that there has been slight copper enrichment of the soil.

The low absolute values of the rock chip analyses and the likely one metre only thickness of the mineralised bed were discouraging and no further exploration down-dip was undertaken.

2.7 Ground Magnetics

Ground magnetics were read at stations on the Casper Grid centres using a SCINTREX MP 2 proton precession magnetometer. Stacked profiles are plotted on Figure 5.

The profiles are generally quite flat except for a spurious reading at station 1850 E/1950N which shows a 150 nT drop. This isolated gradient is unlikely to be significant due to the limited areal extent (10 metres in any direction) (B.M.R., 19?).

2.8 Base and Precious Metals Programme Interpretation

Reconnaissance stream sediment sampling failed to reveal any significant mineralisation although malachite traces and some galena vug infillings were noted in the dolomites of the Banyan Formation. The reconnaissance soil sampling detected no mineralised rocks near structural features.

Follow-up sampling at Casper confirmed the previous results, a mineralised dolomite bed dipping at a low angle to the south east beneath an alluvial flat. Some potential exists for a base metals mineral concentration beneath the alluvium. Gold mineralisation appears not to be associated with the base metals at Casper.

The limited distribution of the copper and barite at Casper, in one bed, suggests that the mineralisation is *in situ* syngenetic in nature.

It is accepted that the above exploration programme was not exhaustive and the patchy nature of Mississippi Valley Pb/Zn mineralisation (Keene, 1971) is regarded as a difficult geochemical target.

3. DIAMOND EXPLORATION

A regional gravel sampling programme was undertaken by Ashton Mining Limited over the EL 2848 (Ashton Mining Limited, 1981).

3.1 Method of Sampling

Regional gravel sampling is regarded as the most effective exploration technique for the location of kimberlites in this region as there is a well developed drainage pattern and the degree of relief and outcrop conditions provide suitable heavy mineral trap sites. Sample sites were pre-determined and plotted on 1:100,000 scale maps so that sample sites tested drainages at approximate intervals of six kilometres.

Helicopter transport provided access to the 12 selected trap sites where approximately 40 Kgm of gravel were gathered, sieved and the minus 4mm fraction collected for laboratory examination, this fraction generally weighing 25-30 Kgm. The sample sites are plotted on figure 7. (Ashton Mining Limited, 1981).

3.2 Method of Processing

The 12 samples were processed at the Ashton Mining Limited laboratory at Perth where they were concentrated by Wilfley Table and heavy liquid (tetrabromoethane, S.G. 2.96) separation techniques. The concentrates were then screened into various size fractions, further concentrated where required by magnetic and electrostatic separation techniques, and a comprehensive grain by grain examination carried out on the minus 1.0mm plus 0.425mm fractions.

3.3 Diamond Exploration Results

The following fractions of each sample were studied.

- 1.00 mm + 0.8 mm	denoted	+ 0.8
- 0.8 mm + 0.5 mm	denoted	+ 0.5
- 0.5 mm + 0.425 mm	denoted	+ 0.425

Of the 12 reconnaissance samples, heavy minerals were detected in the concentrates of one sample only (WIN 481).

This sample contained abundant andradite, subhedral, euhedral, anhedral orange, yellow, greenish, reddish garnets. Some were zoned and some full of inclusions.

3.4 Follow-up Traversing

8 samples were collected during the 2 follow-up traverses along Scissors Creek using the same methods of sampling and processing described above. The density of sampling increased, as a result, to 1 per kilometre.

No heavy minerals were detected in these additional samples.

3.5 Interpretation

Considering the high density of sampling upstream from WIN 481, a local source for the andradites noted in the WIN 481 should have shed heavy minerals sufficiently widely to have been detected at another sample site. As this was not the case, it is concluded that no local source exists.

4. CONCLUSIONS AND RECOMMENDATIONS

Evidence of stratiform copper mineralisation associated with barite is noted at Casper within the dolomites of the Banyan Formation. The mineralisation is syngenetic in nature.

No other evidence of significant base or precious metals mineralisation was detected during the geochemical exploration programme.

One site returned an abundance of andradite garnets during the diamond indicator mineral exploration programme. However, intensive follow-up sampling failed to repeat the occurrence and it is concluded that the initial result is spurious and not indicative of a nearby kimberlitic rock source.

The recommendation to surrender the EL 2848 was implemented on 24 August, 1982, effective from 30 August, 1982.

5. EXPENDITURE

Expenditure debited against this project during the period of tenure amounted to $14,935 with the following break-up:

Diamond exploration	$8,000
Direct expenses (analyses, maps, travel and accommodation)	$1,949
Staff salaries	$3,769
Vehicle expenses	$ 315
Overheads	$ 902

6. REFERENCES

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APPENDIX A

STREAM SAMPLE ANALYSES

Sample No.	(ppm) Cu	Pb	Zn	Ni
3	40	16	36	
8	8	8	4	
32	16	48	20	
60	24	32	16	
61	56	16	20	
62	40	32	16	
63	32	32	20	
64	16	48	32	
75	8	<8	8	
76	4	<8	8	
83	8	<8	12	
84	8	16	16	
85	8	<8	8	
86	8	16	12	
5104	20	20	40	10
5106	20	20	25	<5
5107	20	20	25	10
5114	20	20	45	20
5115	15	<10	15	<5
5409	15	20	25	5

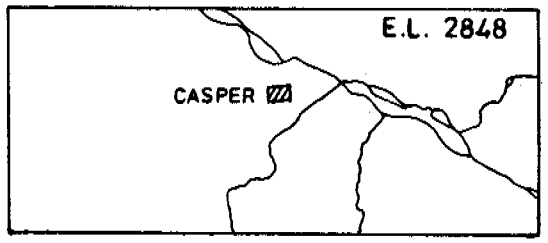
APPENDIX B

RECONNAISSANCE SOIL SAMPLE ANALYSES

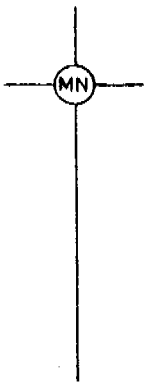
	Sample No.	Analyses ppm Cu	Pb	Zn
Hexagon (Total 17)	1380	32	64	36
	1381	32	48	24
	1382	24	64	20
	1383	24	64	20
	1384	24	48	16
	1385	24	48	20
	1386	24	48	20
	1387	24	48	20
	1388	24	48	16
	1389	24	32	36
	1390	24	48	16
	1391	24	48	16
	1392	40	64	16
	1393	16	48	28
	1394	24	64	24
	1395	32	80	36
	1396	64	32	60
Susan (Total 17)	1556	24	32	28
	1557	16	16	28
	1558	8	16	16
	1559	16	16	12
	1560	8	16	12
	1561	8	16	12
	1562	16	16	20
	1563	8	16	12
	1564	8	16	12
	1565	16	16	20
	1566	8	32	20
	1567	8	16	8
	1568	8	32	12
	1569	8	32	12
	1570	8	16	12
	1571	16	16	20
	1572	8	16	12
Wallop (Total 21)	1574	16	32	20
	1575	8	32	16
	1576	8	16	16
	1577	8	16	16
	1578	8	16	16
	1579	8	16	24
	1580	8	32	20
	1581	8	32	12
	1582	8	8	12
	1583	8	16	16
	1584	8	8	20
	1585	8	16	20
	1586	16	48	28
	1587	16	32	24

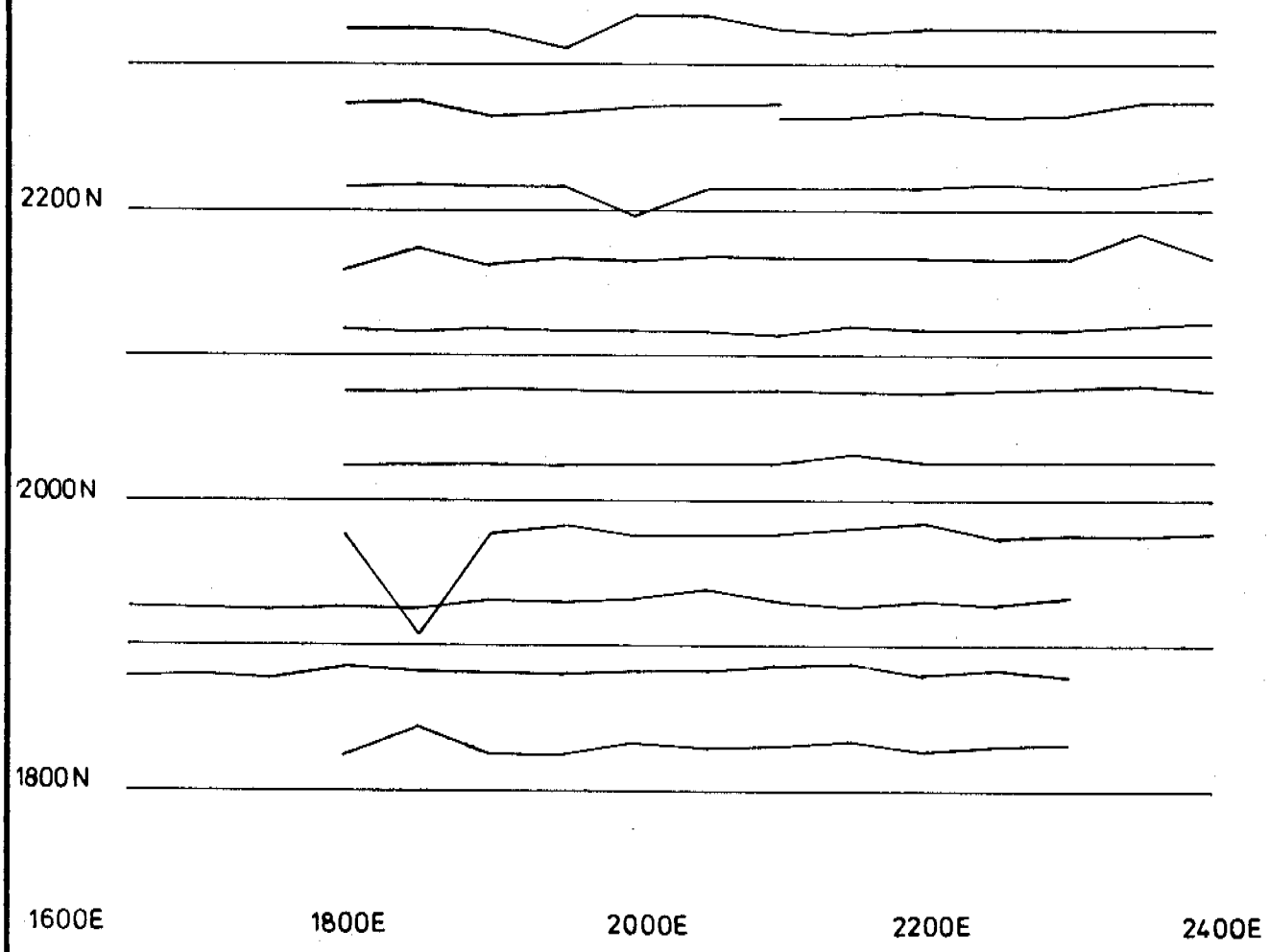
Appendix B (Cont'd).

	Sample No.	Analyses ppm Cu	Pb	Zn
	1588	8	16	24
	1589	104	16	24
	1590	40	16	16
	1591	56	16	16
	1592	16	8	8
	1593	8	16	16
	1594	8	8	8
Scissors (Total 5)	1596	4	16	20
	1597	4	16	20
	1598	4	16	8
	1599	16	32	36
	1600	8	16	28
Banjo (Total 11)	1595	112	32	40
	1624	16	16	28
	1625	32	16	40
	1626	32	16	24
	1627	40	80	40
	1628	40	128	64
	1629	72	96	37
	1630	32	32	32
	1631	72	32	28
	1633	32	32	32
	1634	8	16	12



LOCATION PLAN





Profile Base 48,000 nT.

Profile Scale 1cm = 100nT.

00 100 200m

FIGURE 5

MINERAL DEPOSITS LTD.—SOUTHPORT, QUEENSLAND	NUMBER: A4 0005
	TRACED: J.B.F.
E.L. 2848 PIKER POCKET N.T. CASPER GRID GROUND MAGNETICS	DRAWN: F.W.C.
	DATE: 20·11·81
	SCALE: 1: 5000

CR 82/338

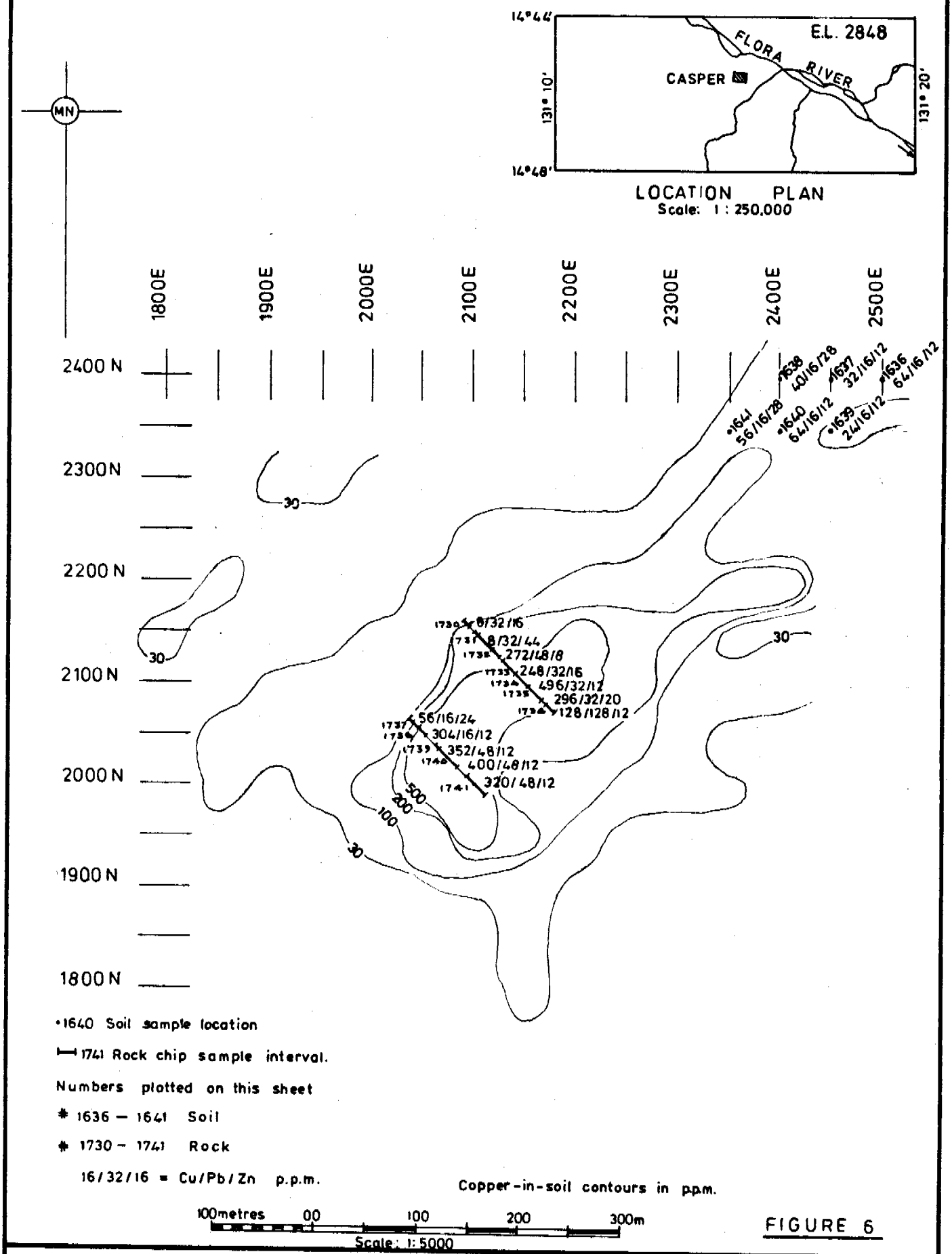
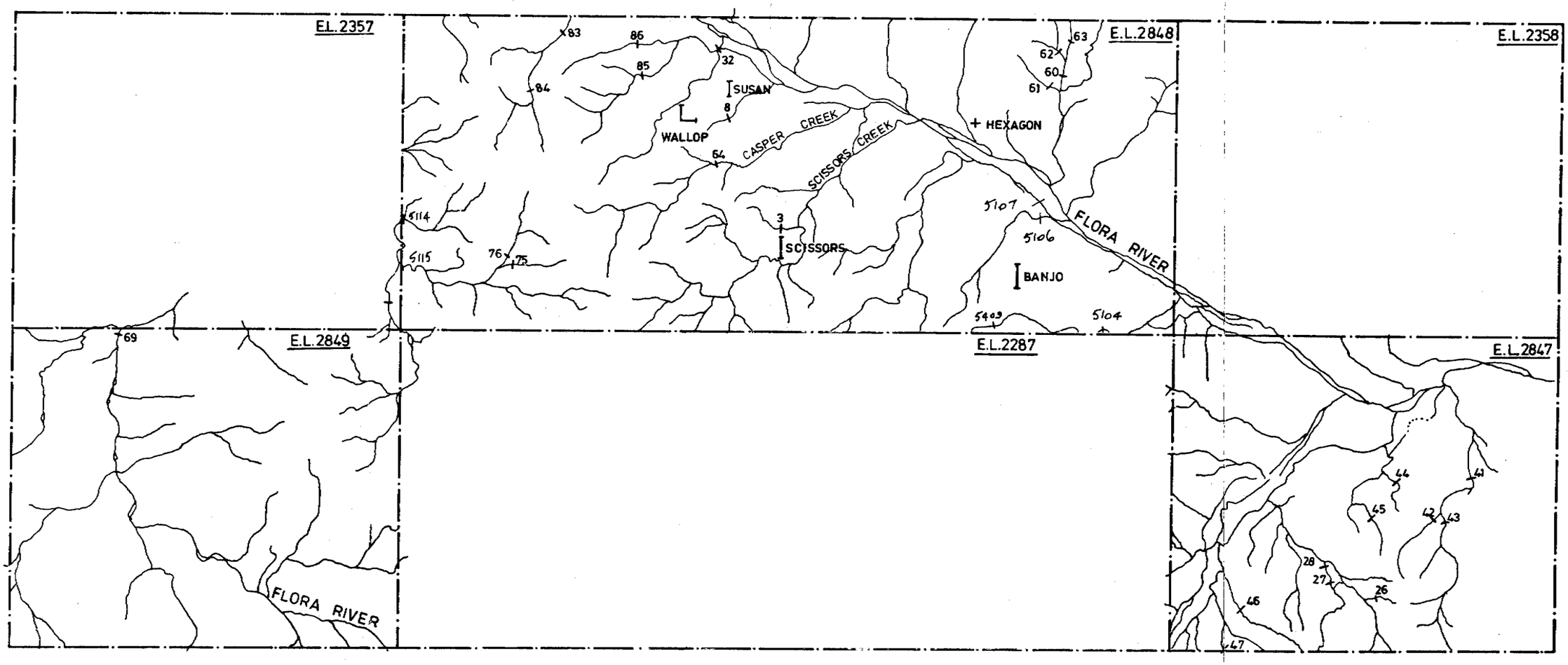


FIGURE 6

MINERAL DEPOSITS LTD.—SOUTHPORT, QUEENSLAND	NUMBER: A4 0010
	TRACED: J.B.F.
E.L. 2848 PIKER POCKET N.T.	DRAWN: F.W.C.
CASPER GRID	DATE: 29·1·82
ROCK CHIP AND ADDITIONAL SOIL SAMPLE ANALYSES.	SCALE: 1:5000

CR 82/338



WALLOP

	2000E	2200E	2400E
2500N	1574.	1578.	1582.
	1575.	1579.	1583.
2400N	1576.	1580.	1584.
	1577.	1581.	
2300N			
2200N			
2100N			
2000N			

SUSAN

2400N	.1564
	.1563
2300N	.1562
	.1561
2200N	.1560
	.1559
2100N	.1558
	.1557
2000N	.1556
	.1565
1900N	.1566
	.1567
1800N	.1568
	.1569
1700N	.1570
	.1571
1600N	.1572

SCISSORS

.1600
.1599
.1598
.1597

.1596

SCISSORS CREEK

HEXAGON

	1000E
	.1388
	.1387
	.1386
	.1385
.1396	.1384.
.1395	1389.
.1394	1390.
.1393	1391.
1383.	1392.
1500N 1382.	
1381.	
1380.	

BANJO

	2000E
2500N	.1634
	.1633
2400N	.1631
	.1630
2300N	.1629
	.1628
2200N	.1627
	.1626
2100N	.1625
	.1624
2000N	.1595

MN

inset

N.B. Inset scale 1: 10,000

N

FIGURE 3

1 00 1 2 3 4 5km

Scale: 1:100,000

MINERAL DEPOSITS LTD.

E.L.'S 2847, 2848 & 2849 N.T.

STREAM SAMPLE LOCATIONS

RECONNAISANCE SOIL TRAVERSES

Scale:	Date:	Number:
1:100,000	23 11 81	A3 2008

CR 82/338.

131°05' 131°10' 131°20' 131°25'

14°44'

14°48'

14°52'

E.L.2357

E.L. 2848

E.L.2358

E.L. 2849

E.L.2287

E.L. 2847

WIN519 WIN520 WIN513 WIN491 WIN505 WIN476 WIN473 WIN479 WIN638 WIN481 WIN690 WIN689 WIN639 WIN677 WIN640 WIN641 WIN642 WIN482 WIN470 WIN490 WIN644 WIN687 WIN643 WIN646 WIN680 WIN688 WIN681 WIN682 WIN645 WIN679 WIN686 WIN685 WIN683 WIN684 WIN489 WIN367 WIN518 WIN506 WIN366 WIN512 WIN511 WIN510 WIN462 5076 WIN465 WIN472 WIN471 WIN469 WIN468 WIN467

5102 TOL096 TOL097 TOL100 TOL092 TOL094 TOL093 TOL095 TOL098 TOL099 TOL104 TOL103 TOL105 TOL108 TOL107 TOL106 TOL134 TOL133 TOL135 TOL136 TOL132

SCISSORS CREEK

MOUNT ARMSTRONG

MOUNT FREDA

≠ WIN 451 — DIAMOND EXPLORATION FOLLOW-UP GRAVEL SAMPLE SERIES I.

≠ WIN 541 — DIAMOND EXPLORATION FOLLOW-UP GRAVEL SAMPLE SERIES II.

• WIN 593 — DIAMOND EXPLORATION REGIONAL GRAVEL SAMPLE LOCATION AND NUMBER.

5432 — STREAM SEDIMENT SAMPLE LOCATION AND NUMBER.

— INDICATOR MINERALS DETECTED.

FIGURE 7

MINERAL DEPOSITS LIMITED
SOUTHPORT, QUEENSLAND

E.L.2848 PIKER POCKET N.T.

SAMPLE LOCATIONS

REGIONAL AND FOLLOW-UP GRAVEL SAMPLING.

0 1 2 3 4 5 km

SCALE 1:100 000

No A3-2002 Date: 11·12·,1981

CR 82/338

LEGEND

RECENT

- Light brown alluvium and soil.
- Loose hematitic pebbles and gravel
- Yellow limonite pebbles
- Chert pebbles
- Red sandy soil
- Light brown soil over dolomite

UPPER PROTEROZOIC
BULLITA GROUP – BANYAN FORMATION

- Buff massive dolomite
- Finely bedded buff dolomite
- Grey marl
- Green glauconitic shale
- Grey shale
- Red marl
- Sandstone
- Dolomitic limestone

- Stream course with washout
- Road
- bar Barite occurrence
- mal Malachite occurrence
- cin Cinnabar occurrence
- 10° Dip and strike
- Sample stations

1800E 1900E 2000E 2100E 2200E 2300E 2400E

2300N 2250N 2200N 2150N 2100N 2050N 2000N 1950N 1900N 1850N 1800N

1650E 1700E 1800E 1900E 2000E 2100E 2200E 2300E

No vegetation

Clay Pan

pebbly alluvial sample

GRADED TRACK

brown soil over sandstone

Old road crossing

Clay Pan

Rare of miscell. pebbles of alluvial derivation

LOCATION PLAN
Scale: 1: 250,000

E.L. 2848
CASPER
FLORA RIVER
SCRUTTON CK
14°44'S
130°40'E
131°20'E

100metres 0 0 100 200metres
1: 1000

FIGURE 4A
CR82/338

MINERAL DEPOSITS LTD
E.L. 2848 PIKER POCKET, N.T.
CASPER GRID
GEOLOGY

Scale:	Date:	Number:
1:1000	13-10-81	A1 5003

LEGEND

- Light brown alluvium and soil
- Loose hematitic pebbles and gravel
- lp — Yellow limonite pebbles
- ch — Chert pebbles
- rss — Red sandy soil
- lbsb — Light brown soil over dolomite
- bmd — Buff massive dolomite
- FFF — Finely bedded buff dolomite
- gm — Grey marl
- Green glauconitic shale
- Grey shale
- Red marl
- Sandstone
- Dolomitic limestone
- Stream course with washout
- Road
- bar — Barite occurrence
- mal — Malachite occurrence
- cin — Cinnabar occurrence
- 10° — Dip and strike
- Sample stations
- 8/16/8 — Cu./Pb./Zn. p.p.m. Soil Analyses
- 912/8/44 — Cu./Pb./Zn. p.p.m. Soil Analyses
  15/<4/45/<4 — Au. p.p.b./Sb./As./Hg. p.p.m.

RECENT

PROTEROZOIC — BULTA - ARGUF - BANNAH FORMATION

1800E 1900E 2000E 2100E 2200E 2300E 2400E

2300N 2250N 2200N 2150N 2100N 2050N 2000N 1950N 1900N 1850N 1800N

1650E 1700E 1800E 1900E 2000E 2100E 2200E 2300E

INSET:
2350E 2400E 2450E 2500E
2400N
2350N
Scale: 1:5000

Clay Pan

pebbly alluvial sample

No vegetation

GRADED TRACK

brown soil over sandstone

Old road crossing

Clay Pan

Rim of miscell. pebbles alluvial derivation

100 metres 50 0 100 200 metres
1:1000

LOCATION PLAN
Scale 1: 250,000

EL 2868
CASPER
FLORA RIVER
JESSOP CK
14°44'S 131°10'E
14°48'S

FIGURE 4B

MINERAL DEPOSITS LTD
EL 2868 PIKER POINT, NT
CASPER GRID
GEOLOGY AND
SOIL GEOCHEMISTRY
Scale 1:1000 Number 4

CR82/338