CRA Exploration Pty. Limited
Incorporated in New South Wales
18 Km Stuart Highway, Berrimah, N.T. 0828

22nd. December 1989

The Secretary
N.T. Dept. of Mines and Energy
G.P.O. Box 2901
Darwin N.T. 0801

Dear Sir,

RE : MT. DAVID EL 6302 ANNUAL REPORT
YEAR ENDING 18th DECEMBER 1989

Please find herewith final report no. 16201 entitled as above by H.J. Roiko together with a sepia copy of plan Ntd 4848.

Expenditure for the period was $56,759 comprising :

Payroll	$12,327
Supplies & Communications	$ 1,824
Vehicle Operation	$ 2,054
Travel & Accommodation	$ 2,261
Rent & Property	$ 2,570
Contractors	$14,651
Laboratory Analysis	$13,059
Sundry	$ 343
Overheads	$ 7,670
	$56,759

PM
13:30 hrs.
3 JAN 1990

Yours faithfully,

Alan Webb
Administration Officer

Telephone (089) 32 2766. PO Box 39598 Winnellie NT 0821. Facsimile (089) 32 3286

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CRA EXPLORATION PTY. LIMITED

EL 6302 MOUNT DAVID, N.T.

FIRST ANNUAL REPORT
YEAR ENDING 18th DECEMBER 1989

SUBMITTED BY : H.J.ROIKO

ACCEPTED BY : W.H.JOHNSTON

DATE : JANUARY 1990

COPIES TO : N.T. DEPARTMENT OF MINES AND ENERGY

CRAE CIS, CANBERRA

CRAE DARWIN

MAP REFERENCE

SF 53-9 Katherine

REPORT No. 16201

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1. SUMMARY

During the first year of tenure for Mt David EL 6302, a reconnaissance drainage gravel sampling program was completed with the collection of 66 samples at a density of approximately one per ten square kilometres. A total of 292 chromites were observed from 19 of the samples. A pronounced clustering of a majority of these chromites occurs within the Eva Creek drainage catchment in the central-eastern part of the EL. A significantly lesser number of chromites was observed from a scatter of samples in the north and west of the EL area. No kimberlitic indicator results were returned from samples collected from the southern EL area. Microdiamond results are still outstanding at report date. Expenditure commitments for tenure year one were met.

2. INTRODUCTION

Mt David EL 6302 was granted to CRA Exploration on 19th December 1988. The EL covers an area of 204 blocks (approximately 677 square kilometres) located 85 kilometres northeast of the township of Katherine. Tenure was acquired to enable exploration for possible diamondiferous kimberlites.

The following description of the geology of the area is abstracted from the BMR-NTGS geological map presentations of the Pine Creek Geosyncline (1:500 000, 1984) and the Yeuralba Region (1:100 000, 1984). The central and northern parts of the EL cover rocks of the Early Proterozoic Edith River Group consisting of porphyritic microgranites and medium to coarse granites (Grace Creek Granite),rhyolitic to dacitic volcanics and tuffaceous sandstones (Plum Tree Creek Volcanics) and feldspathic sandstones (Hindrance Creek Sandstone). These units are flanked and overlain by the basal sandstone member of the Middle Proterozoic Katherine River Group in the extreme northeast of the EL area. Numerous thin dolerite dykes, dominantly trending northeast-southwest, intrude all of the Proterozoic lithologies. The southern portion of the EL is largely covered by Cainozoic fine to coarse sediments and scarp forming Mesozoic sandstone, siltstone and conglomerate.

This report describes exploration activities conducted during year one tenure and constitutes the first annual report for Mt David EL 6302.

3. CONCLUSIONS AND RECOMMENDATIONS

The significant clustering of a large number of chromites, together with a well developed downstream dispersion train in a discrete area within the Eva Creek catchment, indicates a close proximity to a hard rock source.

Detailed followup sampling and creek traversing and mapping is recommended for year two field season in the anomalous drainages.

4. EXPLORATION ACTIVITIES

A generally well developed, moderately incised drainage system amenable to drainage gravel sampling exists in the central and northern parts of the EL. Drainages in the south of the tenement area are characteristically subdued and very poorly incised necessitating the collection of a surficial loam sample from the central parts of the broad stream channels.

4.1 DRAINAGE GRAVEL SAMPLING

A helicopter supported reconnaissance drainage gravel sampling program was conducted during June 1989 resulting in the collection of 66 samples at an average sampling density of one per ten square kilometres. "Heavy mineral trapsite" samples were sieved to -2mm in the field and submitted to the CRAE Belmont laboratory for processing for kimberlitic indicator mineral observation and detection of microdiamonds (<0.4mm). Sample locations are presented on plan NTd 4848 and results are tabulated in Appendix I. Microdiamond results are not yet available at report date.

Positive indicator mineral results were reported from 19 samples as follows:

One chromite in sample 762883 from a southern tributary of Grace Creek in the central western part of the EL.

Four chromites in sample 762892 from a small northwest tributary of Fanny Creek in the northern part of the EL.

Six chromites in sample 762893 from the upper reaches of a northeastern tributary of Eva Creek in the central part of the EL.

One chromite in sample 762895 from a small western tributary of Fanny Creek in the northern part of the EL.

Two chromites in sample 762899 from a major eastern tributary of Fanny Creek in the northern part of the EL.

Five chromites in sample 762932 seven kilometres upstream of 762899.

Nineteen chromites in sample 762936 from the middle reaches of Eva Creek.

Seventy-six chromites in sample 762937 from a northern tributary of Eva Creek in the central part of the EL. (catchment area approx. 9 square kilometres)

One chromite in sample 762939 from a very small tributary of Eva Creek in the central part of the EL.

Seventy-four chromites in sample 762941 from the middle-lower reaches of Eva Creek (approx 6 kilometres downstream of 1316937 tributary)

Four chromites in sample 762942 from a northern tributary of Eva Creek in the eastern part of the EL.

Thirty-two chromites in sample 762944 from the middle-upper reaches of Eva Creek.

Fifty-two chromites in sample 762945 from a northern tributary of Eva Creek (4sq km catchment area, 2kms upstream of 762944) in the eastern part of the EL.

Four chromites in sample 762946 from a northern tributary of Eva Creek in the eastern part of the EL.

One chromite in sample 762947 from Eva Creek 5 kilometres upstream of 762944.

One chromite in sample 825404 from the upper reaches of Ironbark Creek in the northern part of the EL.

Five chromites in sample 825405 from a southern tributary of Birdie Creek in the extreme north of the EL.

Two chromites in sample 825406 from an adjacent southern tributary of Birdie Creek in the north of the EL.

Two chromites in sample 824658 from the upper reaches of an eastern tributary of Eva Creek in the eastern part of the EL.

4.2 DISCUSSION OF RESULTS

From the total of 292 chromites observed, a large majority clusters in the middle reaches of the Eva Creek catchment area. In particular, two samples (762937 and 762945), returning 76 and 52 chromites respectively, represent discrete catchment areas of nine and four square kilometres. Detailed followup of these two samples and the other anomalous samples is warranted to locate the hard rock source.

5. REFERENCES

Needham, R.S. & Stuart-Smith, P.G. 1984 - Solid Geology of the Pine Creek Geosyncline N.T. 1:500 000 Scale.

Bureau of Mineral Resources and Northern Territory Geological Survey 1984 - Geology of the Yeuralba Region 1:100 000 Scale

6. KEYWORDS

Diamonds, LR Proterozoic, Proterozoic MD, Cainozoic, Mesozoic, Diamond Indicators, Katherine, Mount David EL 6302.

7. LOCATION

Katherine SF 53-9

8. LIST OF PLANS

Plan No.	Title	Scale
NTd 4730	Mt David EL 6302 - Location Plan	1:250 000
NTd 4848	Gravel Sample Location Plan 1989 Reconnaissance Sampling	1:100 000

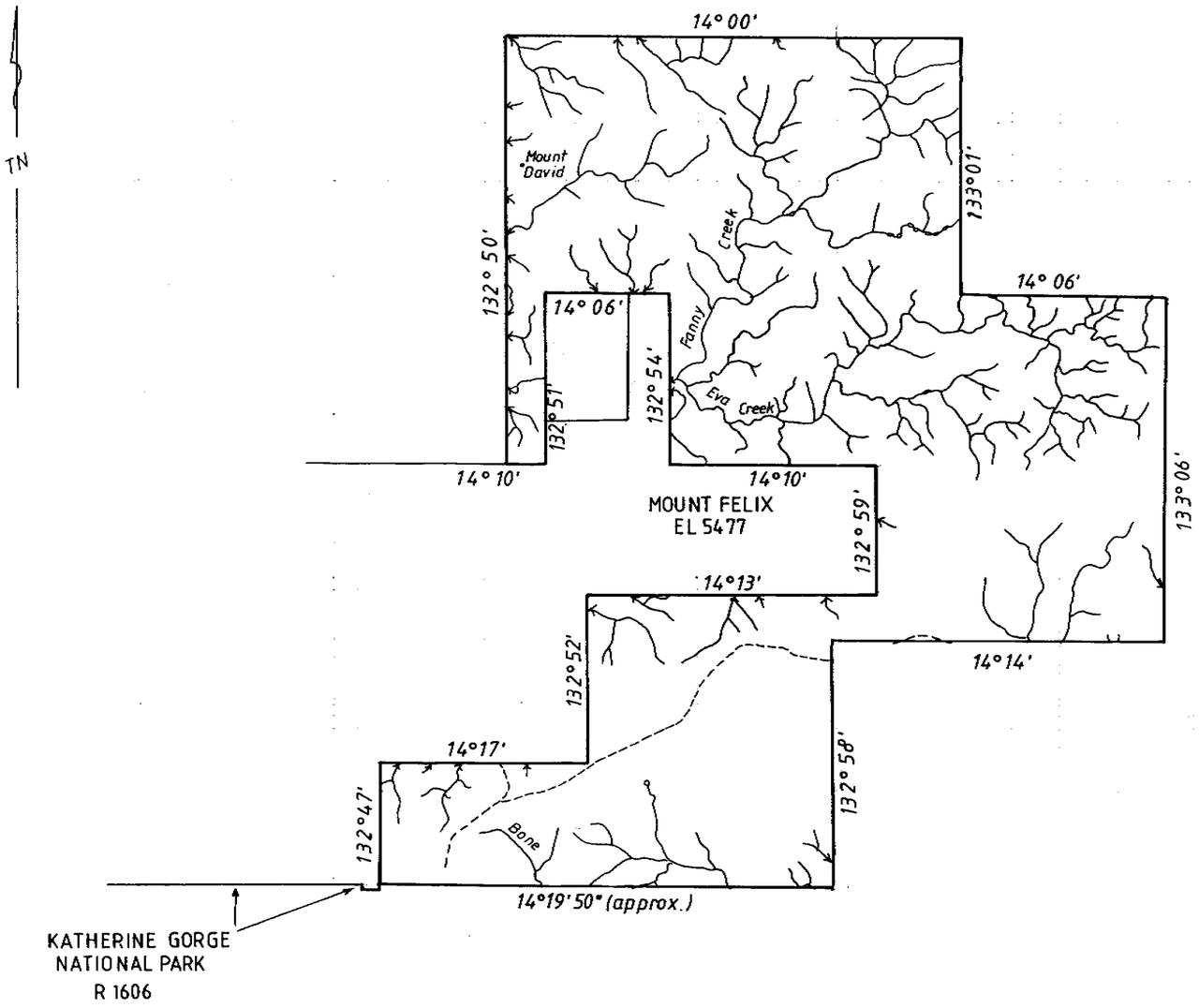
APPENDIX 1

INDICATOR MINERAL RESULTS

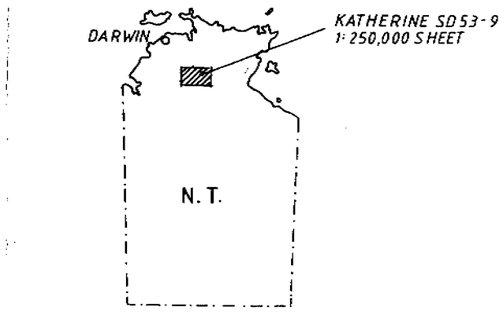
MOUNT DAVID RECONNAISSANCE GRAVEL SAMPLING

SAMPLE NUMBER	EAST AMG	NORTH AMG	NO. OF CHROMITES
762882	53266.4	8438.9	0
762883	53266.7	8436.2	1
762884	53266.4	8436.1	0
762888	53271.9	8440.9	0
762889	53274.3	8436.6	0
762890	53274.1	8436.1	0
762891	53275.1	8440.1	0
762892	53276.0	8440.9	4
762893	53277.6	8439.0	6
762894	53277.0	8440.4	0
762895	53276.0	8443.2	1
762896	53276.8	8444.0	0
762897	53278.2	8444.1	0
762898	53279.0	8444.4	0
762899	53279.2	8444.1	2
762900	53277.1	8446.9	0
762932	53284.2	8443.2	5
762933	53283.9	8435.8	0
762934	53283.3	8435.7	0
762935	53283.3	8438.2	0
762936	53282.3	8438.2	19
762937	53282.0	8438.5	76
762938	53280.8	8436.6	0
762939	53280.3	8435.7	1
762940	53278.2	8435.3	0
762941	53279.0	8434.8	74
762942	53284.4	8439.5	4
762943	53280.3	8435.1	0
762944	53286.3	8438.9	32
762945	53287.8	8439.9	52
762946	53288.8	8439.0	4
762947	53289.4	8438.4	1
762948	53289.6	8438.6	0
762949	53291.7	8439.1	0
825401	53277.0	8447.0	0
825402	53273.0	8450.3	0
825403	53280.6	8446.2	0
825404	53271.0	8445.5	1
825405	53271.1	8451.5	5
825406	53267.0	8450.1	2
825407	53266.4	8443.2	0
825409	53282.3	8446.2	0
825410	53283.0	8447.4	0
825411	53282.6	8447.9	0
825412	53282.3	8448.6	0
825413	53282.8	8448.9	0
825414	53282.8	8448.9	0
825415	53283.2	8450.0	0
825416	53284.4	8444.4	0
824651	53293.9	8438.3	0

824652	53293.8	8438.5	0
824653	53290.4	8436.3	0
824654	53290.2	8435.6	0
824655	53290.0	8435.0	0
824656	53290.5	8437.1	0
824657	53285.2	8436.0	0
824658	53286.8	8434.5	2
824659	53286.4	8434.2	0
824661	53290.5	8425.6	0
824662	53291.6	8428.7	0
824663	53292.2	8425.2	0
824664	53295.0	8427.8	0
824665	53295.2	8426.1	0
824666	53280.0	8412.0	0
824667	53274.1	8415.7	0
824668	53274.1	8415.7	0



AREA: 204 BLOCKS
676·9 sq. km.



0 5 10 15 18 Km.

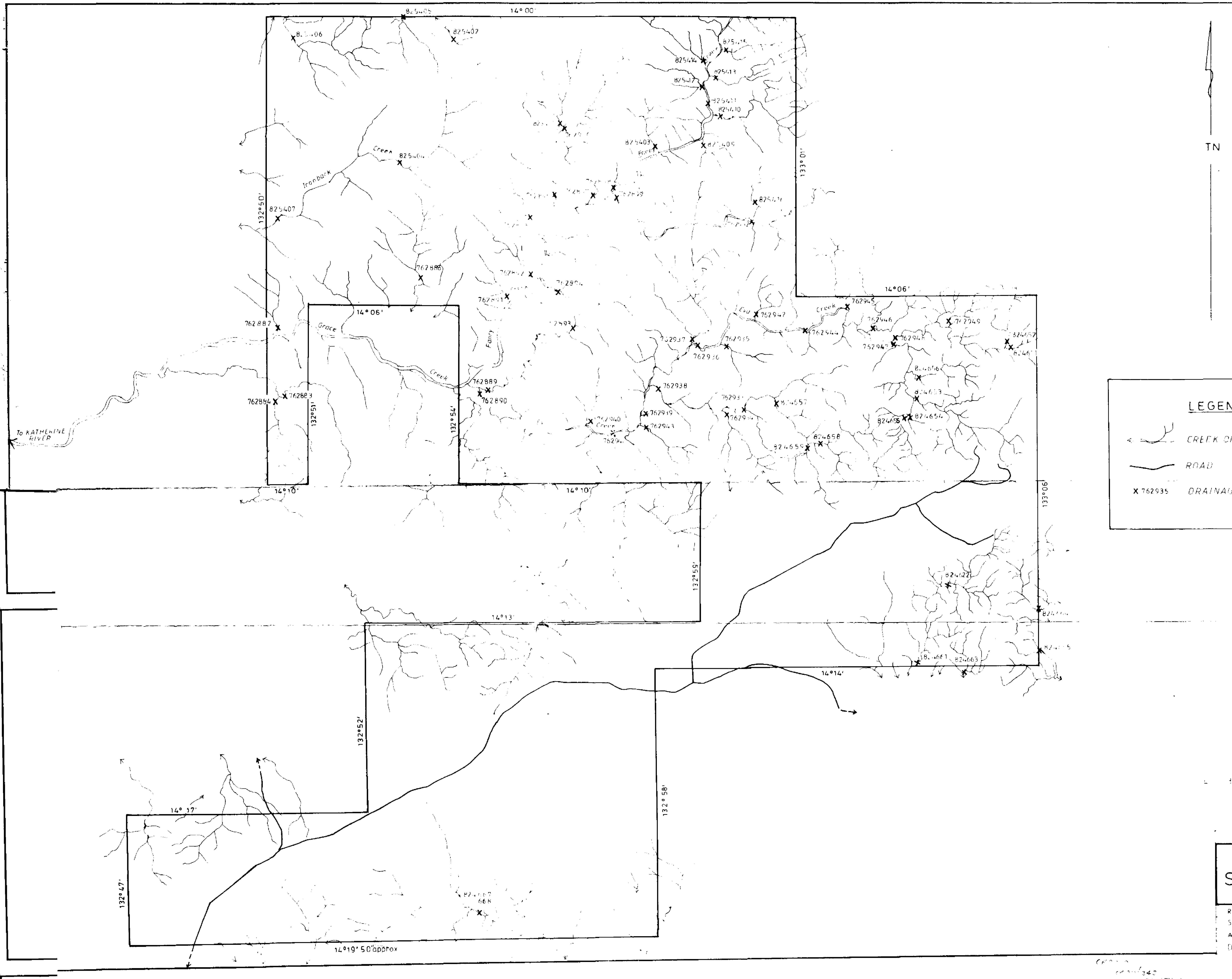
CRA EXPLORATION PTY. LIMITED

EL 6302

MOUNT DAVID

LOCATION PLAN

Ref. SD53-9 KATHERINE	
Scale 1:250,000	Drawn SRJ
Author	Report No. 16201
Date 19 JULY 1988/89	Plan No. NTd 4730



LEGEND

	CREEK OR RIVER
	ROAD
X 762935	DRAINAGE GRAVEL SAMPLE SITE

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EL 6302 MT. DAVID

SAMPLE LOCATION PLAN

1989 RECONNAISANCE SAMPLING

REFERENCE SD53-9 KATHERINE	
SCALE 1:100,000	DATE DECEMBER 1989
AUTHOR HJR	REPORT 16201
DRAWN SKT	PLAN No NTJ 4845

[redacted]