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EL 4553 LIMMEN BIGHT RIVER, N.T.

FINAL REPORT
PERIOD TO 14 JUNE, 1985

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Date : September, 1985

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Map Reference	Report number
SE 53-3 Bauhinia Downs	130517

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Appendix 1 Indicator Mineral Samplings Data

1.0 SUMMARY

In the first year of tenure of Limmen Bight River EL 4553, reconnaissance drainage gravel sampling was completed over the area and samples processed for detection of kimberlitic indicator minerals and microdiamonds.

One microdiamond was detected in a sample from a creek with catchment in adjacent EL 4211 (relinquished).

Infill and follow-up drainage gravel sampling gave only negative results. Two photocircular features were loam sampled with negative result.

2.0 ASSESSMENT

In the absence of any detected dispersion of kimberlitic indicators, there is no encouragement to undertake further exploration for kimberlite diastremes in the area of EL 4553.

3.0 INTRODUCTION

Limmen Bight River EL Application 4553 was lodged on 9 March 1984 for an area of 500 blocks (about 1642 square km) and was granted on 20 June 1984 (Plan NTd 3326). Recommended relinquishment of title was followed by surrender of EL 4553 with effect 14 June 1985.

The area was taken up for exploration for diamondiferous kimberlites by way of drainage gravel sampling for detection of kimberlitic indicator minerals.

EL 4553 covers a plain tract of generally lightly wooded sparsely country, underlain by almost flat lying Precambrian Roper Group siltstones and sandstones of the Cobanbirini Syncline. The Precambrian section is blanketed in large part by pallid-lateritized remnants of a Cretaceous sedimentary sheet and by drift sand. The plain has a relatively poorly developed dendritic drainage by north flowing tributaries of the Limmen Bight River.

North trending strike ridges of relatively resistant Roper Group sandstone units control a trellis drainage pattern in the eastern boundary zone of the EL area.

In the southwestern sector of the EL area, Golliger Creek rises in an intricate dendritic tributary system on the Favenc Range breakaway escarpment of the Barkly Tableland. The black soil plain traversed by its course north to join the Limmen Bight River, is underlain by limestone of the (Tertiary) Golliger Beds.

4.0 DRAINAGE GRAVEL SAMPLING

Collection of drainage gravel samples was undertaken in two passes. All samples were forwarded to the CRAE Belmont laboratory for processing for kimberlitic indicator mineral observation and detection of microdiamonds (<0.4mm). Sample locations are shown on plan NTd 4007. Sampling data and results are tabulated in Appendix 1 and discussed below.

4.1 First pass: Reconnaissance sampling

In an initial program of helicopter supported reconnaissance sampling, 48 -2mm sieved drainage gravel samples (965- and 966- series numbers) were collected in the EL 4553 area. Samples were collected from heavy mineral accumulation (trap) sites where available.

No kimberlitic indicator minerals were observed; one microdiamond was reported in sample 966856 from Cat Creek, draining out of neighbouring EL 4211 (since relinquished).

"Loam" sample 966899 was collected from a ground recovered photocircular feature defined by a local anomaly in the braiding pattern of the Limmen Bight River course. The sample was composited from about 100kg of surficial soil, shallowly scraped to take advantage of any deflation concentration of heavy mineral grains, from about the centre of the feature.

Kimberlitic indicator mineral and microdiamond reports were negative.

4.2 Second pass: Infill and Follow-up Sampling

Helicopter supported sampling was undertaken subsequently to follow up the Cat Creek microdiamond report and to infill reconnaissance drainage sampling coverage, aiming at an overall sample density of about one per 20 square km.

36 -2mm sieved drainage tree site gravel samples (1080- and 1082- series numbers) were collected.

3 Loam samples 641786-788 were collected from a ground recovered photocircular feature.

Loam samples 641786-788 and all samples of the 1080- series were reported negative for kimberlitic indicator minerals and microdiamonds - including samples 1080326 and 1080327, taken about two km upstream from the site of Cat Creek reconnaissance sample 966856 with a reported microdiamond.

All samples of the 1082- series were reported negative for kimberlitic indicator minerals; processing for detection of microdiamonds was not undertaken for this sample series, due to an unmanageable backlog at the laboratory.

5.0 REFERENCES

- Colliver, I.C. 1984: Broadmere EL 4211
Annual Report Year Ending 7 June 1984
CRAE Report 130428
- Smith, J.W. 1964: Bauhinia Downs, N.T.
BMR 1:250 000 Geological Series
Explanatory Notes

6.0 KEYWORDS

Diamonds, diamond indicators, airborne,
sampling-drainage, sampling-soil

7.0 LOCATION

SE 53-3 Bauhinia Downs (5965 Bauhinia Downs)
(6065 Batten)
(5964 O.T. Downs)

8.0 LIST OF PLANS

Plan No	Title	Scale
-----	-----	-----
NTd 3326	Location plan Limmen Bight River EL 4553	1:250 000
NTd 4007	Limmen Bight River EL 4553 Sample location plan	1:100 000

Appendix 1

INDICATOR MINERAL SAMPLING DATA

INDICATOR MINERAL SAMPLING RESULTS

LABELS LEGEND

EASTAMG

A.M.G. COORDINATES (ZONE 53)

NORTHAMG

SAMTYPE

1 = DRAINAGE "GRAVEL", 2 = LOAM, 3 = ROCK

SAMKG

SAMPLE WEIGHT (kg)

MICROD

NUMBER OF MICRODIAMONDS RECOVERED

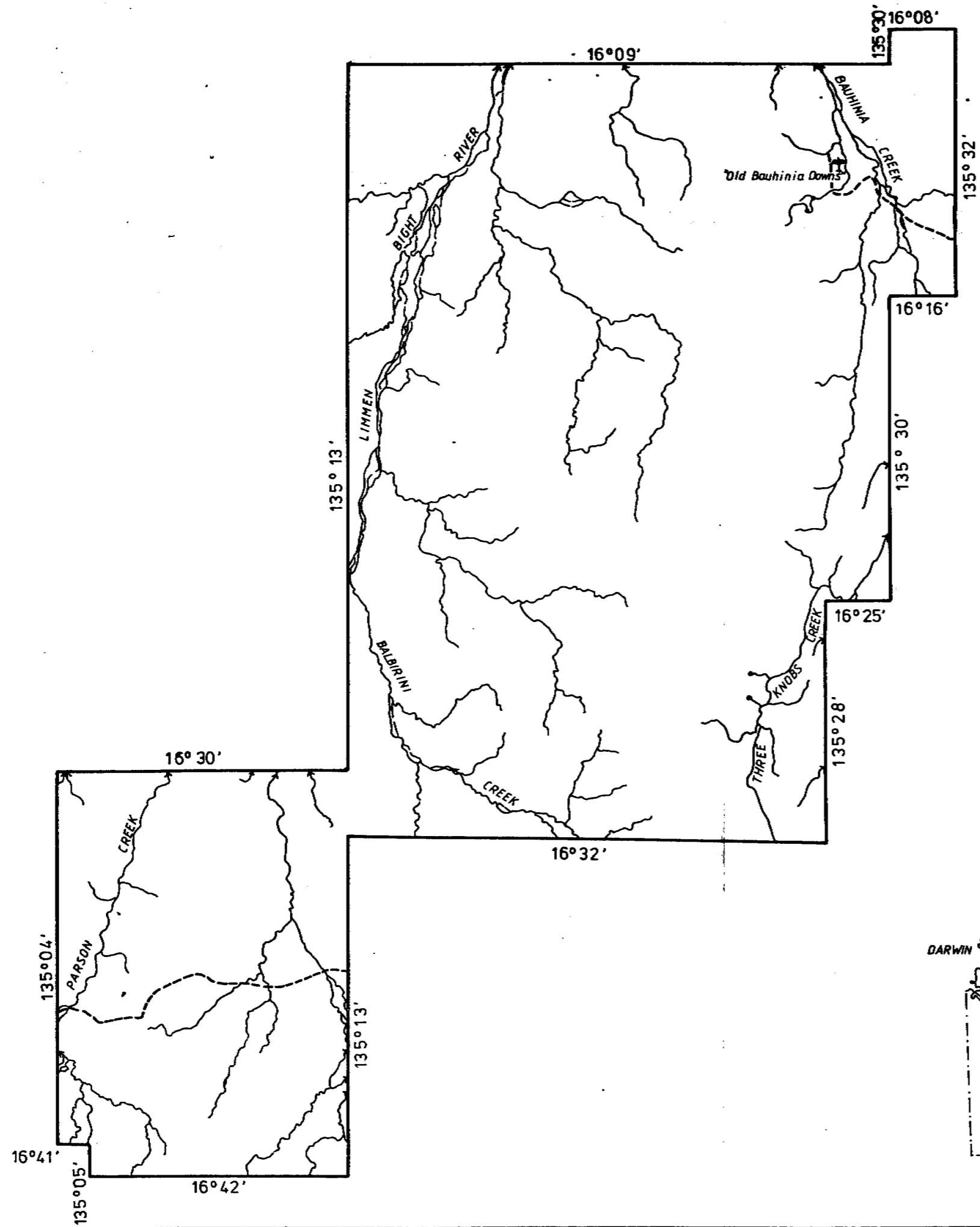
IND1

KIMBERLITIC INDICATOR MINERAL GRAINS OBSERVED

SAMPLE NO.	EASTAMG	NORTHAMG	SAMTYPE	IND1	MICROD
-----	-----	-----	-----	-----	-----
964819	552900	8207200	1	0	0
965511	531600	8212800	1	0	0
965512	531600	8212800	1	0	0
965516	527500	8206300	1	0	0
965517	527500	8206300	1	0	0
966852	526100	8214400	1	0	0
966856	526900	8207700	1	0	1
966861	552200	8205800	1	0	0
966862	552100	8200700	1	0	0
966863	553100	8203400	1	0	0
966864	552500	8197200	1	0	0
966876	554400	8206800	1	0	0
966892	550900	8193300	1	0	0
966894	531300	8206800	1	0	0
966895	532900	8204700	1	0	0
966896	537900	8200200	1	0	0
966897	537300	8199700	1	0	0
966898	536400	8197100	1	0	0
966899	525800	8197100	2	0	0
966904	539000	8212900	1	0	0
966905	540400	8210200	1	0	0
966906	538200	8209900	1	0	0
966907	535100	8207100	1	0	0
966908	532000	8204000	1	0	0
966909	532200	8201100	1	0	0

SAMPLE NO.	EASTAMG	NORTHAMG	SAMTYPE	IND1	MICROD
-----	-----	-----	-----	-----	-----
966910	541800	8199100	1	0	0
966911	525700	8191900	1	0	0
966912	529900	8186800	1	0	0
966913	328600	8186700	1	0	0
966915	526200	8177500	1	0	0
966916	535200	8182800	1	0	0
966919	550000	8185800	1	0	0
966920	546200	8178100	1	0	0
966926	525000	8194400	1	0	0
966927	525900	8192300	1	0	0
966928	523500	8185700	1	0	0
966929	526600	8179100	1	0	0
966930	534700	8182200	1	0	0
966931	535600	8173400	1	0	0
966932	535400	8172700	1	0	0
966935	551400	8184700	1	0	0
966943	518900	8174800	1	0	0
966961	520200	8169800	1	0	0
966962	513200	8175100	1	0	0
966963	509400	8164800	1	0	0
966966	508300	8158900	1	0	0
966977	520700	8166800	1	0	0
966978	519000	8166500	1	0	0
966979	510800	8169200	1	0	0
1080326	525300	8207400	1	0	0
1080327	525300	8207400	1	0	0
1080445	543100	8209600	1	0	0
1080446	532700	8198000	1	0	0
1080458	542300	8108900	1	0	0
1080459	539700	8205500	1	0	0
1080460	527800	8190500	1	0	0
1080471	527800	8190200	1	0	0
1080500	533000	8184700	1	0	0
1080528	546000	8178300	1	0	0
1080529	551800	8198700	1	0	0
1080530	551800	8198700	1	0	0
1080531	536100	8186500	1	0	0
1080532	537400	8181200	1	0	0
1080547	533000	8185000	1	0	0
1080548	536800	8185400	1	0	0
1080549	538200	8181200	1	0	0
1080558	547100	8172300	1	0	0
1080559	547200	8179500	1	0	0
1080565	523800	8202600	1	0	0

SAMPLE NO.	EASTAMG	NORTHAMG	SAMTYPE	IND1	MICROD
1082281	537400	8172100	1	0	
1082287	522000	8173800	1	0	
1082288	521500	8173700	1	0	
1082289	519300	8163000	1	0	
1082296	527000	8172100	1	0	
1082297	522800	8162400	1	0	
1082300	523000	8156100	1	0	
1082302	522400	8156300	1	0	
1082303	521400	8158100	1	0	
1082304	518500	8163100	1	0	
1082305	514700	8161800	1	0	
1082306	509100	8156900	1	0	
1082311	516900	8163700	1	0	
1082312	512200	8157000	1	0	
1082313	512200	8157000	1	0	
1082314	508300	8156100	1	0	
1082327	516700	8159000	1	0	
1083034	556800	8216000	1	0	
641786	532100	8208800	2	0	0
641787	532100	8208800	2	0	0
641788	532100	8208800	2	0	0

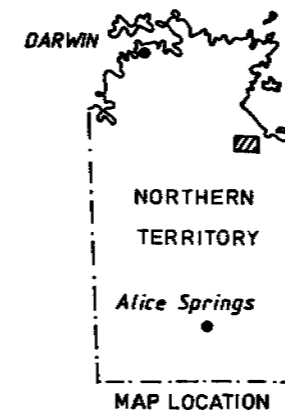
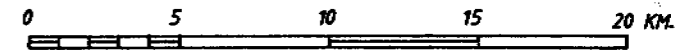


AREA: 500 BLOCKS
1641.5 sq. km.



NORTHERN TERRITORY
GEOLOGICAL SURVEY.

CR85/210



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EL 4553
LIMMEN BIGHT RIVER
LOCATION PLAN

REFERENCE SE 53-3 BAUHINIA DOWNS

SCALE 1:250,000

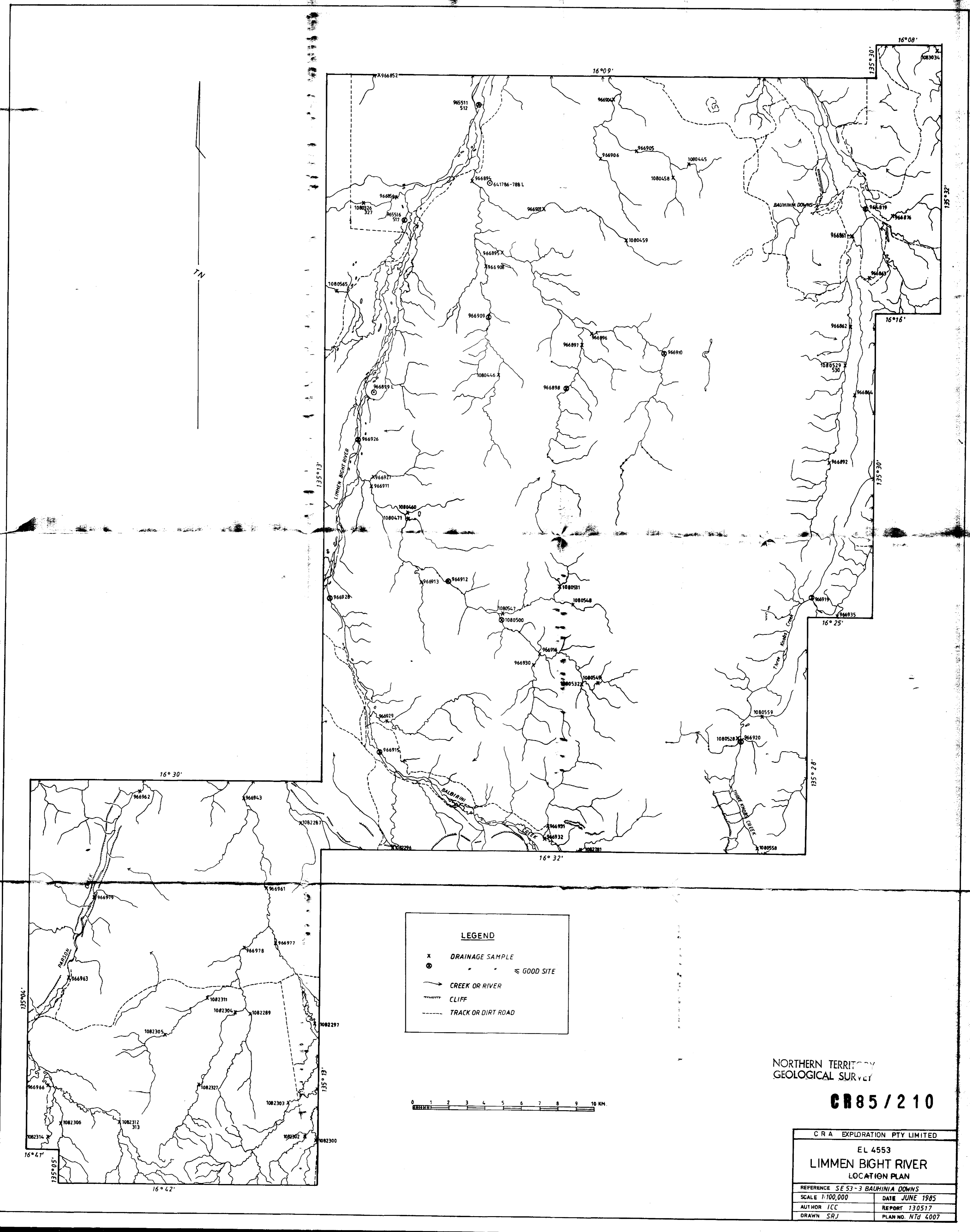
DATE JANUARY 1984

AUTHOR WHJ

REPORT 130517

DRAWN SRJ

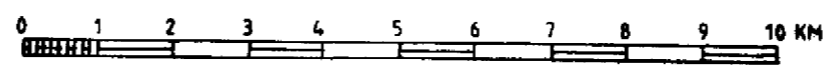
PLAN No NTd 3326



TN

LEGEND

- x DRAINAGE SAMPLE
- ⊙ GOOD SITE
- CREEK OR RIVER
- ▬ CLIFF
- - - TRACK OR DIRT ROAD



NORTHERN TERRITORY
GEOLOGICAL SURVEY

CR85/210

C R A EXPLORATION PTY LIMITED	
EL 4553	
LIMMEN BIGHT RIVER	
LOCATION PLAN	
REFERENCE SE 53-3 BAUHINIA DOWNS	
SCALE 1:100,000	DATE JUNE 1985
AUTHOR ICC	REPORT 130517
DRAWN SRJ	PLAN NO. NTG 4007