

OPEN FILE

875

LICENCEE & OPERATOR.

NORTHERN CEMENT PTY. LTD.

RELINQUISHMENT REPORT ON E.L. 4935
AND FINAL REPORT ON E.L. 4935

by

L.G.Nixon

L.G.B.Nixon & Associates.

CONTENTS.

SUMMARY

INTRODUCTION

GEOLOGY

CONCLUSIONS

RECOMMENDATIONS

- APPENDIX I. Auger Drill Hole Logs
II. Analysis table
III. Photograph of drill.
IV. Estimated Expenditures.

ATTACHMENTS.

<u>MAP No.</u>	<u>TITLE</u>	<u>SCALE</u>
FIG 1	LOCATION PLAN	1:100000
FIG 2	UNCONTROLLED PHOTOGEOLOGICAL PLAN EXPLORATION LICENCE No. 4935 SHOWING SAMPLE SITES & HELICOPTER TRAVERSE BRUNETTE DOWNS N.T.	1:100000
FIG 3	AUGER DRILL HOLE PATTERN BRUNETTE CREEK BRUNETTE DOWNS STN. N.T. E.L. 4935	1:10000

SUMMARY.

The commodity sought was high grade gypsum for use in the manufacture of cement.

Office work included literature search, and air photo interpretation of the geology. Field work included a helicopter reconnaissance of Brunette Creek, Lake Sylvester and environs, chip sampling of exposed gypsum occurrences, and exploratory auger drilling.

The main conclusions arrived at were, that size and grade of the gypsum deposit did not meet the Company's criteria.

Considering the drilling results and other factors the company decided to surrender the mining tenement.

INTRODUCTION.

In 1985 Northern Cement Pty. Ltd. decided to search for a source of gypsum to meet the needs of their operations at Darwin.

Following the granting of Exploration Licence No. 4935 a helicopter was chartered for the initial reconnaissance which included sampling of gypsum exposures and spoil heaps of the dams sunk into the floor of Lake Sylvester.

Because of poor access to the areas of interest, a helicopter was chartered for the initial reconnaissance of the tenement area. Gypsum is exposed in the banks and beds of creeks. It was found at the locations 1, 2, and 3 shown in FIG 2 attached. Analysis of samples collected from these sites were sufficiently encouraging to warrant follow up work including auger drilling.

Auger drilling failed to intersect any useful thickness or grade of gypsum. Not all the holes marked out were drilled.

REGIONAL GEOLOGY.

The regional geology has been carried out by the Bureau of Mineral Resources and shown on the Brunette 1:250000 sheet of the Geological Atlas Series. Outcrops of limestones have been identified by Bureau geologists as being Middle Cambrian or Tertiary in age.

The Cambrian limestone outcrops in flat to slightly elevated ground whereas the Tertiary limestone is usually exposed in the creeks draining into Lake Sylvester.

Gypsum is thought to replace the carbonate sediments. It does not form outcrops but is usually exposed in the banks and beds of creeks such as along Brunette Creek.

LOCAL GEOLOGY.

All the sediments from Cambrian to Recent in age are flat lying in this region.

The only commodity of interest to the company is high grade gypsum. Field examination showed that gypsum has formed as individual crystals or aggregates of crystals scattered through the black clay or in zones of sub economic concentrations beneath the surface at depths ranging from less than a metre to more than 2 metres.

The Cambrian limestones have been recrystallised and dolomitised and range from grey to mottled light and dark grey.. The Tertiary limestones have been silicified and are usually a vivid white colour.

In addition to the samples collected earlier by the present writer samples were collected from the auger flights during the drilling programme. These were collected from holes BC 1 to 3 and BCs 6 and 11, as shown on plan numbered FIG 3 attached.

The analytical data is tabulated in Appendix II attached.

L

CONCLUSIONS.

Gypsum believed to be of Recent age. It is exposed in creek banks and creek beds and in the spoil heaps from dam excavations in the lake floor in the region around Brunette Downs Station.

Several samples were collected from the three sites during the first reconnaissance. Their locations are shown on FIG 2 attached. Additional samples were collected from the drill flights during the drilling programme.

Analysis for gypsum from the creek exposures were good but later drilling showed that the grade was not economic.

The resource did not have the potential to develop into an economically viable deposit. No further work was justified on this prospect and the tenement should be relinquished.

RECOMMENDATIONS.

It is recommended that no further work be carried out on this tenement and that the licence be relinquished.

Signed. 

L.G. Nixon.

13/8/1988

5

APPENDIX 1

AUGER DRILL HOLE LOGS.

BRUNETTE CREEK. BRUNETTE STATION.N.I.

Drilling Contractor:- V & R Carusi Pty. Ltd.

Driller:- Peter Ground.

Drill:- "PROLINE" 4 Tonne Class 2 Slewing Crane with
Pendulum Borer.

Drill:- Programme commenced 24/8/'87

Drill:- programme completed 25/8/'87

<u>Hole Number</u>	<u>Depth Metres</u>	<u>Geological Log</u>
BC 1	0.00-1.50 1.50-2.50 2.50-3.00	Black soil and grey clay. Black clay and gypsum mix. Brown plastic clay.
BC 2	0.00-0.50 0.50-1.00 1.00-1.70	Alluvium and black clay Poor quality gypsum. Gypsum crystals in clay.
BC 3	0.00-1.00 1.00-2.10	Alluvium and black clay. Gypsum crystals in grey clay
BC 4	0.00-1.00 1.00-1.40 1.40-1.50	Alluvium and black soil. Gypsum crystals in grey clay Brown clay.
BC 5	0.00-2.00	Black soil and clay.
BC 6	0.00-2.00 2.00-3.00	Alluvium and black clay. Gypseous black clay.
BC 7	0.00-2.00 2.00-2.20	Alluvium, black clay and gypsum crystals. Brown clay.
BC 8	0.00-1.00 1.00-1.75	Black clay. Gypseous mottled brown clay
BC 9	0.00-1.00 1.00-2.40	Black soil and clay. Mixture of gypsum and calcareous clay.
BC 10	0.00-0.50 0.50-2.20	Black soil and clay. Calcareous clay and clayey gypsum.
BC 11	0.00-1.00 1.00-2.75	Black soil, clay and gravel. Calcareous clay and gypsum.

Logged by L.G.Nixon.

APPENDIX II

Gypsum Sample List.

Brunette Creek.
Brunette Downs Station

Exploration Licence No. 4935.

<u>Hole</u>	<u>Interval</u>	<u>Thickness</u>	<u>SO3</u>	<u>GYPSUM</u>
BC 1	1.00 - 2.00	1.00	2.00	4.3
BC 2	0.50 - 1.50	1.00	8.40	18.10
BC3	1.00 - 2.00	1.00	17.60	37.90
BC 6	1.00 - 2.00	1.00	7.60	15.10
BC 11	1.00 - 2.00	1.00	3.60	7.70

APPENDIX III



Photograph of Proline Auger Drill drilling an exploration hole for gypsum on the east bank of Brunette Creek approximately 25 kilometres south westerly from Brunette Creek Homestead in Exploration Licence No. 4935.

2

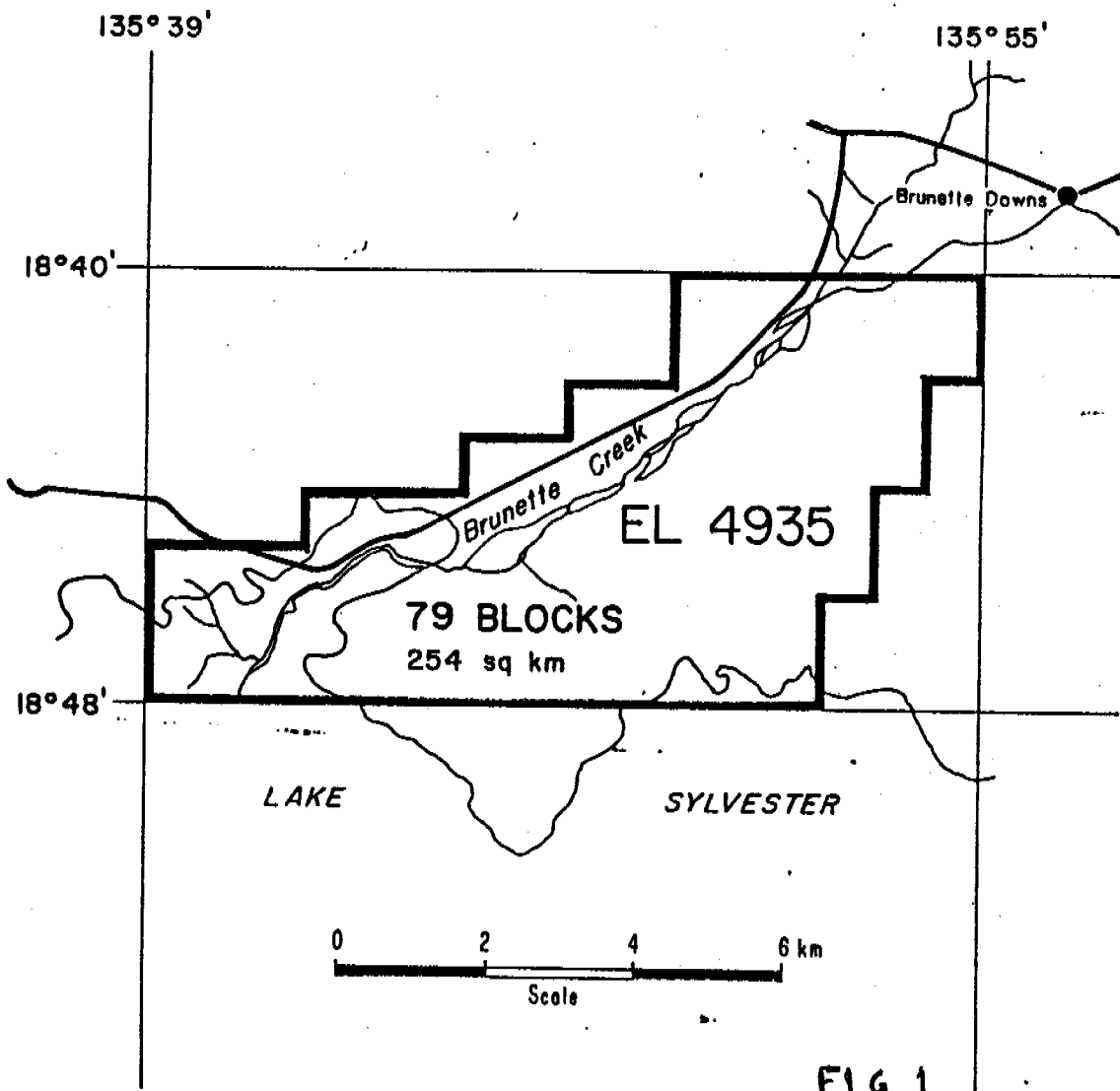
APPENDIX IV.

EXTIMATED EXPENDITURE.

PERIOD 1987/88.

Consultants field charges	1500.00
Consultants office charges	1600.00
Casual wages	290.00
Air fares	270.00
Vehicle hire, insurance, fuel	400.00
Accommodation & casual meals	50.00
Field living allowance	400.00
Report preparation	40.00
Communications	30.00
Chemical analysis and collection	1280.00
Auger drilling & Mobilisation	2500.00
Management & overheads	<u>1672.00</u>
TOTAL	<u>10032.00</u>

Plan of Area



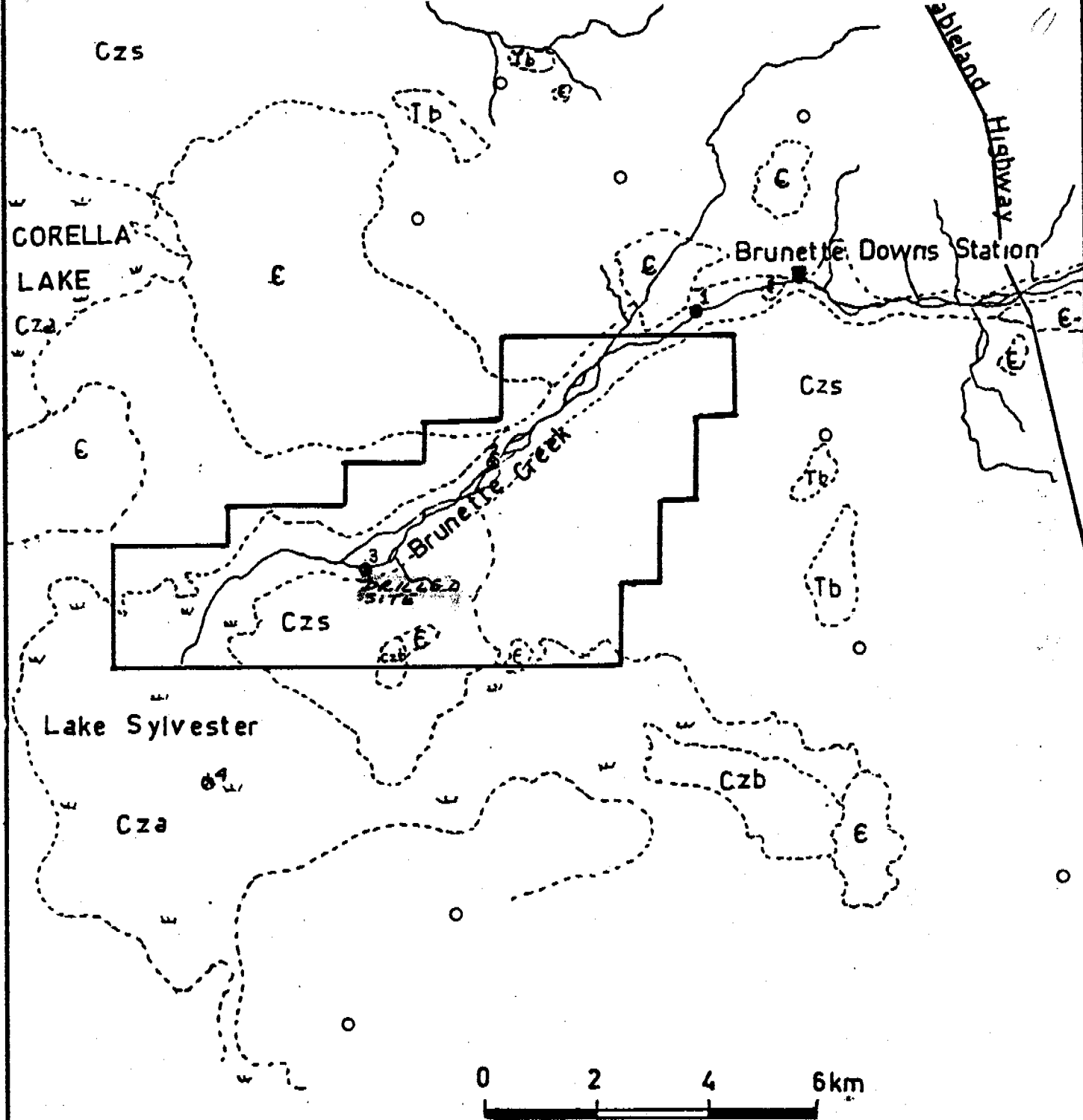
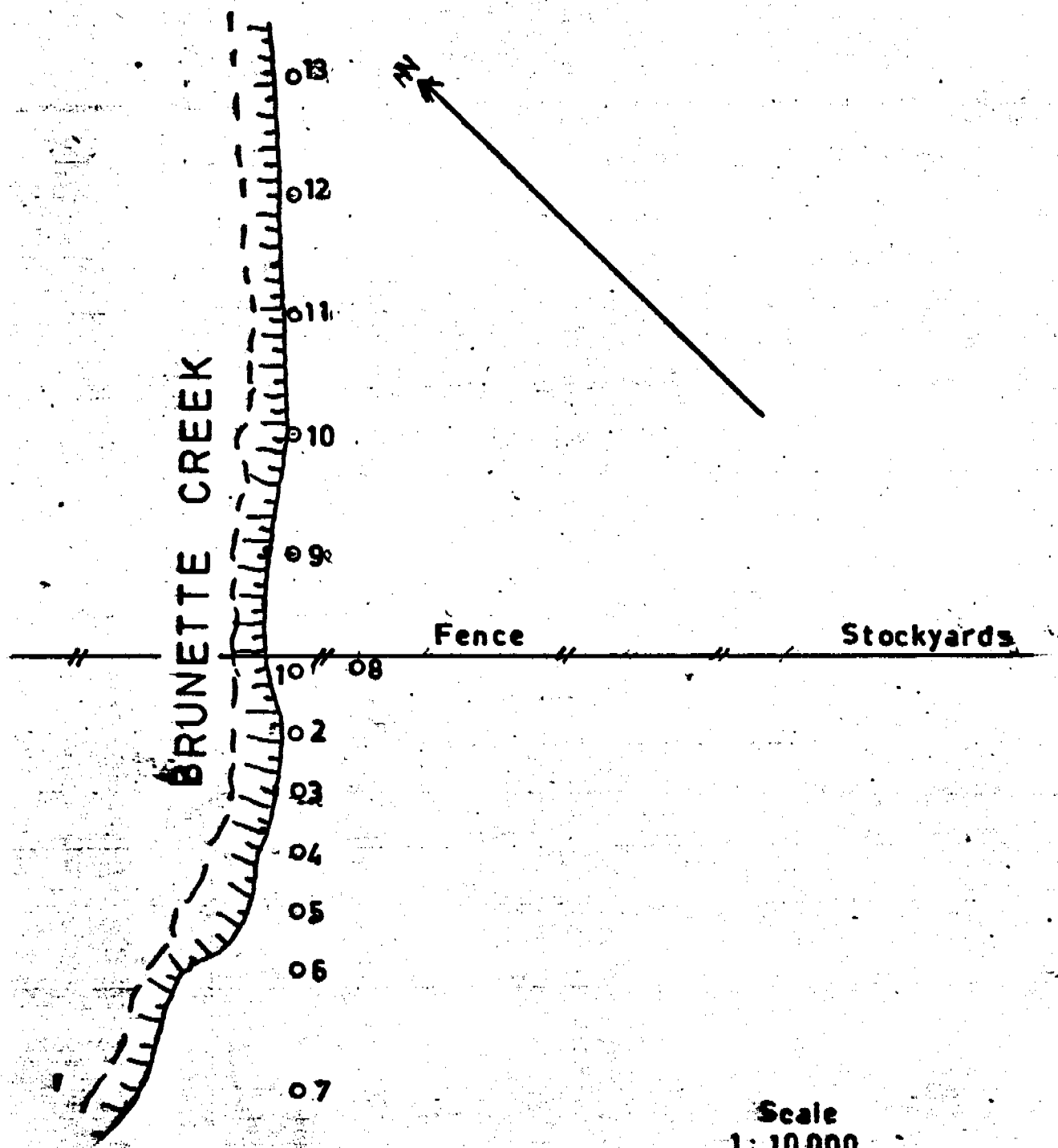


FIG.2

- Swamp Alluvium w
- Black soils Cza
- Recent sand Czb
- Tertiary Ls. Czs
- Cambrian Ls. Tb
- Bitumen road E
- Water bore o
- Gypsum sample ●3

NORTHERN CEMENT PTY. LTD.		
Drawn	L.G.N.	EL 4935 GEOLOGICAL MAP showing GYPSUM SAMPLE LOGATIONS and HELICOPTER TRAVERSES BRUNETTE DOWNS STATION N.T.
Traced		
Revised		
Date	3/6/1988	L.G.B. Nixon & Associates.



o Drill site

Scale
1:10,000

FIG. 3

NORTHERN CEMENT PTY. LTD.	
Drn. LGN	AUGER DRILL HOLE PATTERN BRUNETTE CREEK BRUNETTE DOWNS STN. N.T. EL. 4935
Dt 13/8/1988	L.G.B. NIXON & ASSOCIATES