

EXPLORATION LICENCE 972

ANNUAL REPORT  
for the period  
8th August 1980 - 7th August 1981

**OPEN FILE**

North Flinders Mines Limited  
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CR82/226

## ILLUSTRATIONS

- |       |   |
|-------|---|
| Fig 1 | Location Map (1:5 million)                |
| 2     | Detailed Location (1:100 000)             |
| 3     | Una May Prospect (1:25 000)               |
| 4     | Photogeological Interpretation (1:25 000) |

TENURE:

The second reduction of area was effected and renewal of EL 972 completed in January 1981. The area relinquished was reapplied for but not further processed as the land concerned is subject to Aboriginal land claim.

EXPLORATION:

During the year the following surveys were undertaken:-

Prospect evaluation of Una May prospect

Photogeological Investigation

UNA MAY PROSPECT:

Exploration programmes comprising a survey grid (50m centres), geological mapping and soil geochemical sampling, were carried out by Northern Geological Consultants (Darwin) over an anomalous area discovered by reconnaissance stream sediment and soil geochemical surveys (B.M.R. 1975) and designated the UNA MAY Prospect. Uranium was considered to be the principal element of interest, with anomalous zones also in bismuth, tungsten and copper. The B.M.R. speculated on the possible occurrence of bulk low-grade uranium mineralisation, perhaps of the Rossing type.

As mapped by the B.M.R., the anomalous area appears to relate to a ring fracture zone developed within white adamellite, which appears to be a later intrusive into an older pink granite phase, to the immediate north of the Calvert Fault. Both granite phases have been related to the Nicholson Granite Complex of probable Carpentarian age. The geological mapping by Northern Geological Consultants (Antal 1980) differs markedly from that of the B.M.R. Antal (1980) concludes - "The Murphy Metamorphics (not recognised in the map-area) were isoclinally folded, metamorphosed, and intruded by the Nicholson Granite. The metamorphics and the granite were subsequently eroded, the Clifffdale Volcanics were

extruded and the Norris Granite intruded. The final intrusion was followed by the uplift of the basement; a segment of the Nicholson Granite moved northwards along a thrust plane, carrying with it a mantle of Cliffdale Volcanics, as it glided over the adjacent Norris Granite".

This interpretation appears somewhat open to question from the same author's geological map, which shows the Norris Granite to the south being disconformably overlain to the north by Cliffdale Volcanics, which are in turn separated from the white Nicholson Granite by a thrust-fault. Thus the geological map appears to be at variance with the description of the geological history.

Soil samples were taken from 20cm depth at 50m centres over the gridded area, sieved to 180um and analysed for Cu, Pb by AAS Scheme 1 and Bi, U, W by XRF Scheme 2 by Comlabs Pty Ltd. Results were not analysed statistically, because it is clear from the element plots that at best there are only a few isolated spots of "above background" values for the above-listed elements. On either geological interpretation (B.M.R. or Antal), the minor zones of higher geochemical values do not appear to correlate with any particular rock unit or other geological feature. Maps presenting the geochemical results in detail were submitted with the first quarterly report (to 7.11.80).

Trial radiometric readings on two grid lines indicate a negative radiometric response and the planned coverage of the whole grid area was therefore aborted.

From previous work, including the discovery of the UNA MAY Prospect by stream sediment sampling and further delineation by soil geochemistry (B.M.R.), it was expected that drill targets would be generated for possible large tonnage low grade uranium mineralisation associated with the ring-fracture zone in the white adamellite. However, the results of North Flinders Mines' work to date on the UNA MAY Prospect do not encourage further detailed exploration work.

The detail of Antal's work is contained in a separate report, submitted with the appropriate quarterly and indexed in the DME library as CR81/40.

A photogeological study of EL 972 and surrounding areas was carried out early in 1981 with a view to the possibility of outlining other target areas (structures etc), in conjunction with the results of previous reconnaissance stream sediment geochemical surveys (B.M.R.). Apart from outlining a greater density of lineament features and thus probable faults or shear-structures than previously suspected this work has not to date indicated further target areas for detailed follow-up exploration. Photogeological interpretation was carried out on 1:25,000 scale colour airphotographs using existing geological maps (Calvert Hills & Seigal Map-sheets) as a guide to formation-identification. Photo-interpretation maps were prepared by uncontrolled photo-laydown methods and the area divided into 2 map-sheets. (Copies enclosed).

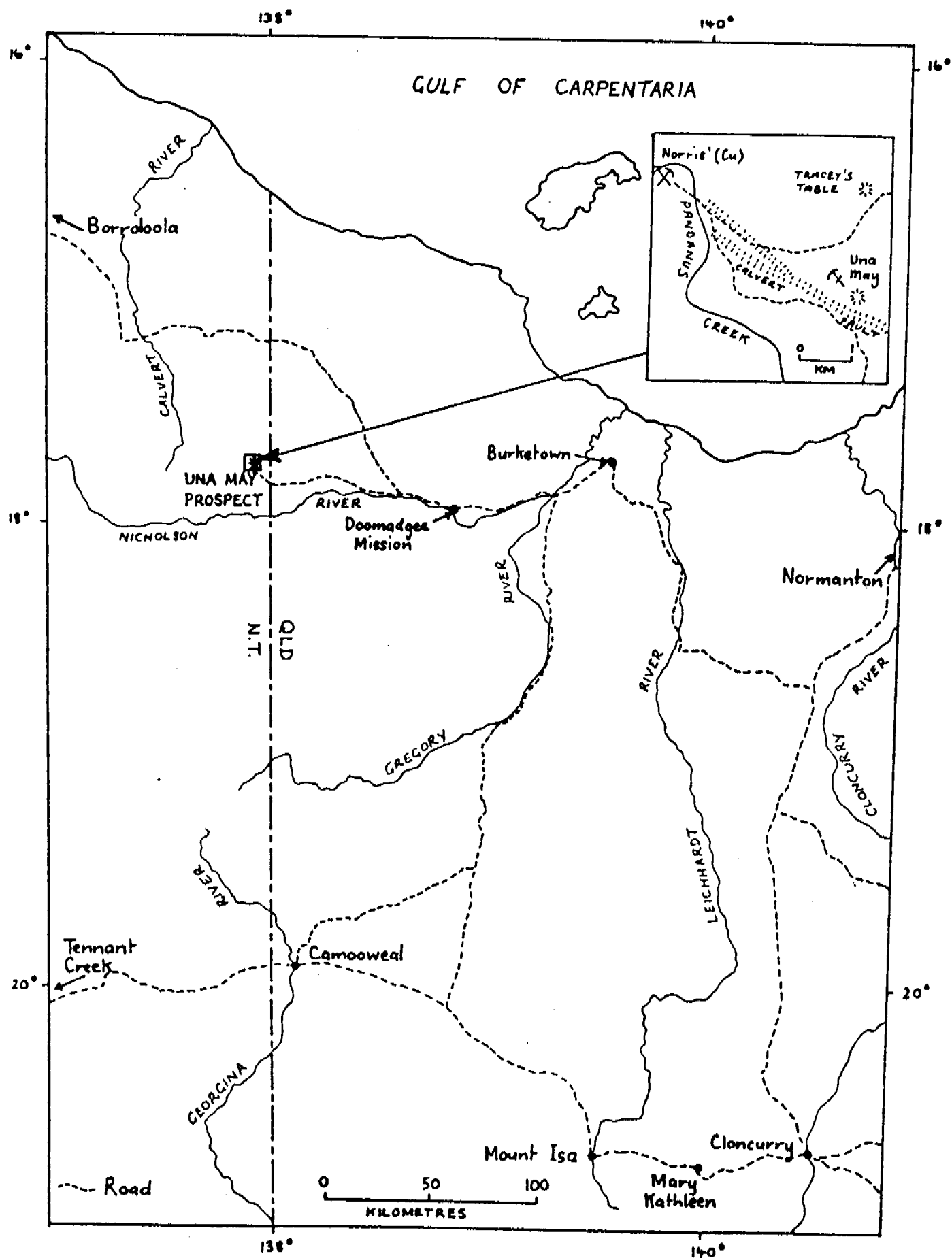
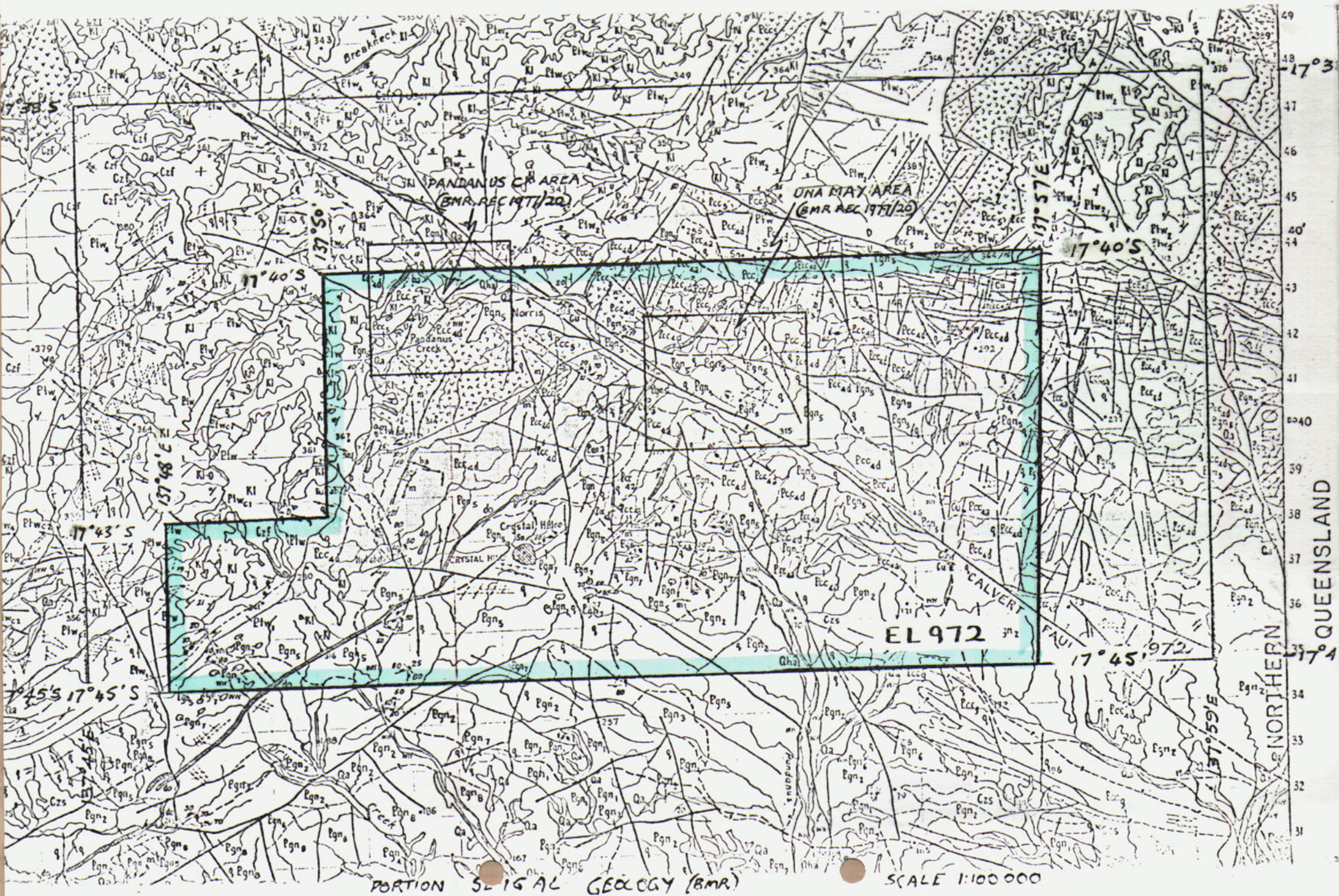
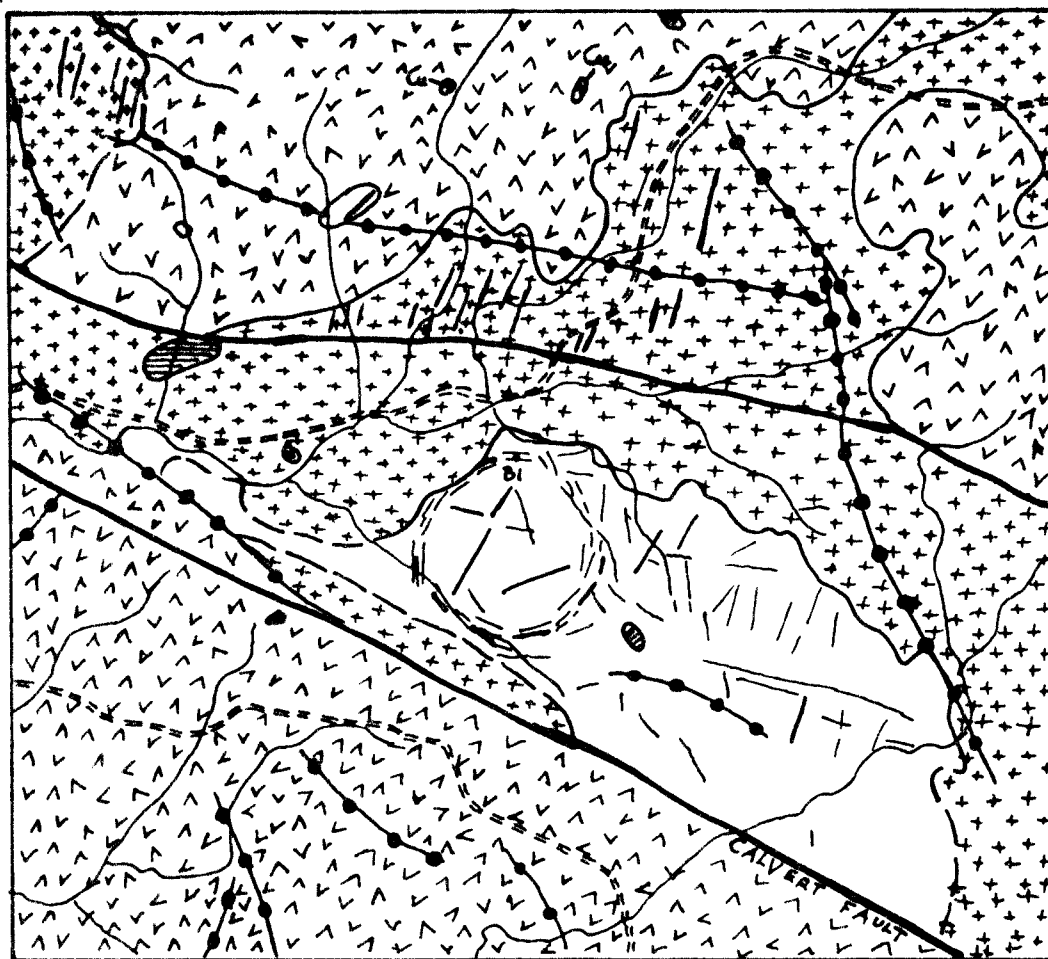


Figure 1 : Location map.









0 1 2  
Kilometres

Geological boundary

Geological boundary  
(approximate)

Fault

Dyke, quartz vein

Greisen Vein

Joint

Bismite occurrence

Malachite in greisen

Track

MESOZOIC



Sandstone

NICHOLSON GRANITE COMPLEX



Aplite



Microgranite



White Granite



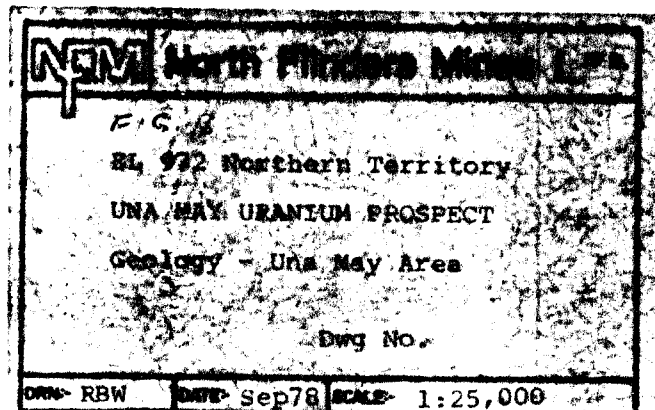
Pink Granite

CARPENTARIAN

CLIFFDALE VOLCANICS

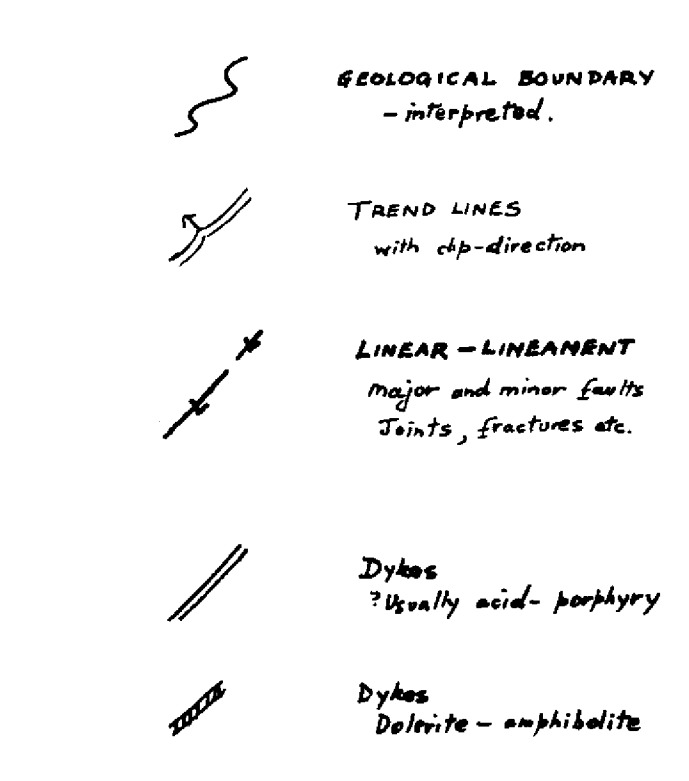


Dacite



After Bur. Min. Res. Record 1977/20  
A.G. Rossiter





Undifferentiated.

10

**P**

### CLIFF DALE VOLCANICS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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