CONTENTS ENVELOPE - 1863

TENEMENT: S.M.L. 678 - Boolcoomata

TENEMENT HOLDER: Comalco Ltd.

REPORT: Geological Report March 1972 (Pgs3-11)

PLANS: No plans.

GEOLOGICAL REPORT

SPECIAL MINING LEASE NO. 678

WEEKEROO HILLS

March 1972

A.J. MARSHALL
COMALCO LIMITED
95 Collins St.,
MELBOURNE.

GEOLOGICAL REPORT

WEEKEROO HILLS S.M.L. 678

The Weekeroo Hills Special Mining Lease, No. 678, is located about 200 miles N.N.E. of Adelaide in the Olary District. (See Appendix I). The lease is approximately 72 square miles in area, the boundaries of which are shown in Appendix II.

The area containing the lease has been mapped by the South Australian Mines Department and is part of the 1:250,000 Olary Sheet. The Western half of the lease lies within the 1:63,360, Plumbago Geological Sheet.

The Willyama Complex forms the basement rocks of the area, with the lithologies including schists, quartzites, amphibolites, migmatites and intrusive granites. Unconformably overlying this complex are metasediments belonging to the Burra Group and the Yudnamutana Sub-Group. Subsequent erosion has produced vast alluvial flats, which flank the hills formed by these ancient rocks.

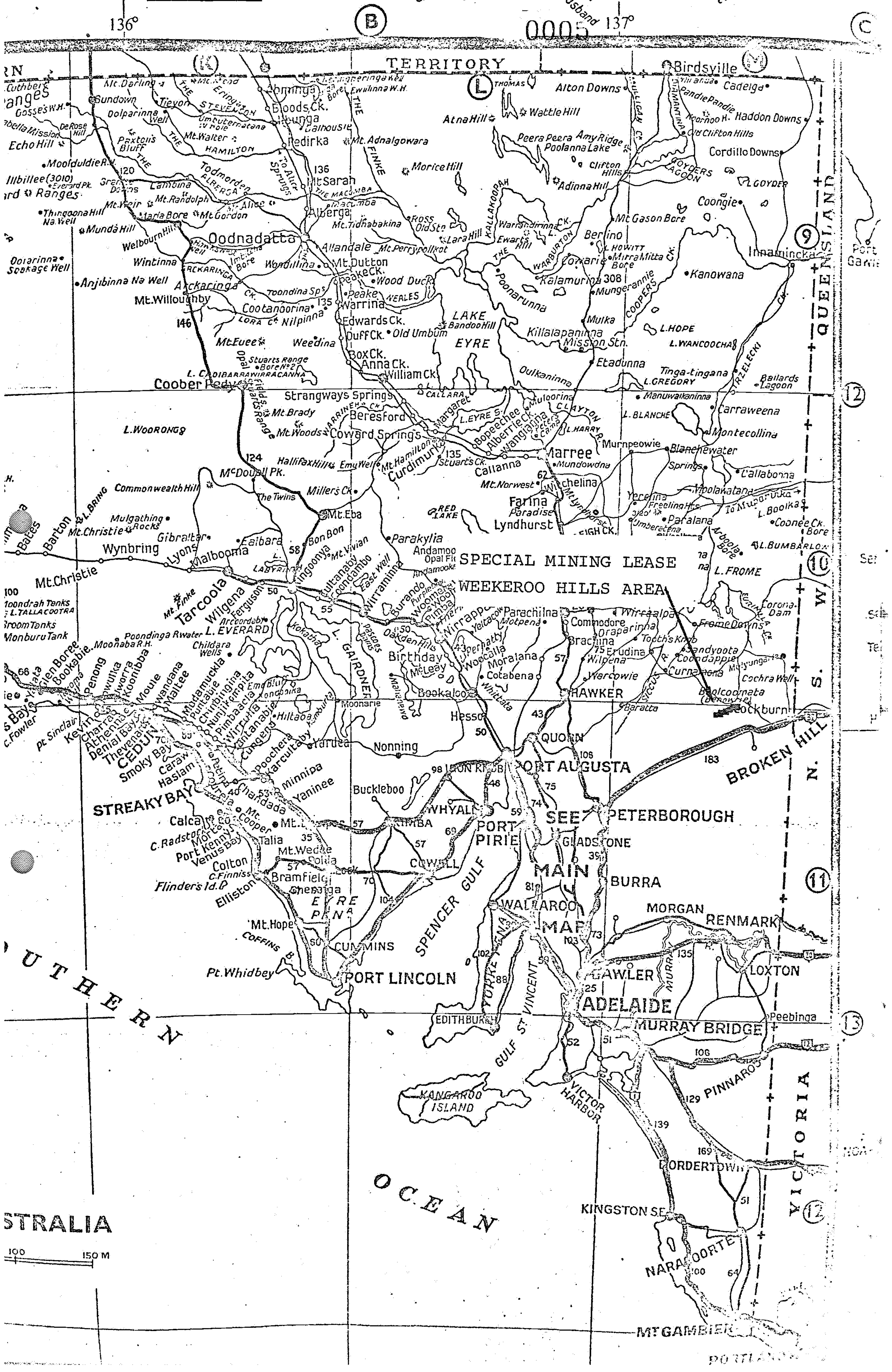
In the Olary District, the Willyama Complex has been the focus of extensive mineralization and has yielded many viable mineral prospects. The range of minerals known includes gold, copper, lead, uranium, scheelite, barytes, with a wide variety of pegmatitic and metamorphic minerals. Fluorite, which is Comalco Exploration's principal interest in this district is known from a number of locations, generally as a minor accessory.

The lease was located so as to include the intrusive granites because of their known fluorite relationships; and also to include the amphibolites because of the presence of minor associated skarns. Fluorite is often found in skarns as a calc-replacement.

Exploration in the initial stages involved mainly ground traverses, conbined with the random sampling of the different lithologies. 80 samples were collected, 76 of which were analysed for fluorine, and four of which were analysed for Co, Cr, W, Ta, Nb, Pt, Pd, Os, Ir, Rh, Bi and Ti.

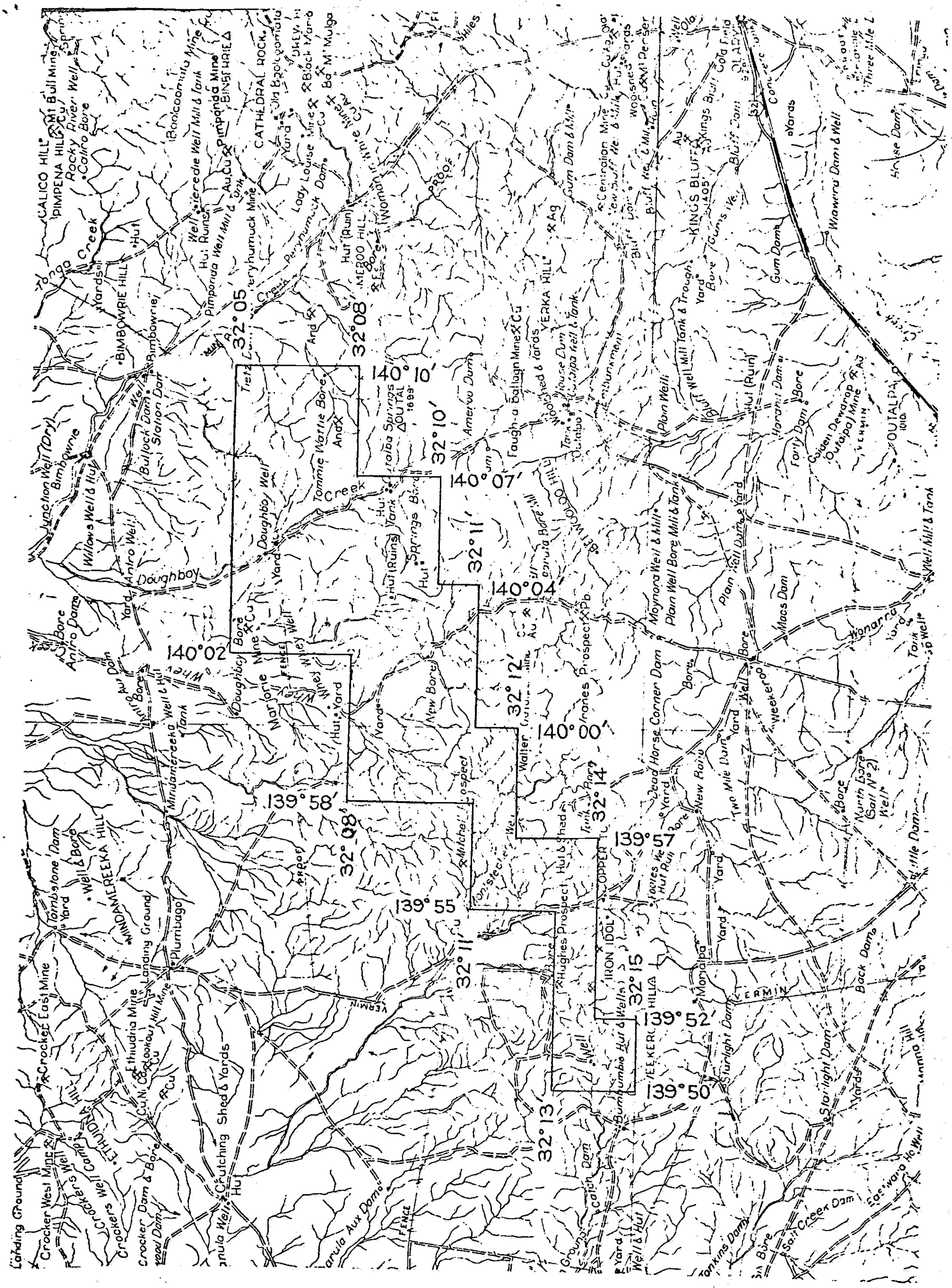
None of the fluorine results were considered anomalous, nor worthy of further attention. The four samples analysed for the metallic elements, were found to be titanium rich minerals probably rutile. The results of the sampling are given in Appendix IV

APPENDIX I



0005
136°
137°
TERRITORY
Birdsyville
Alton Downs
Cadelga
Haddon Downs
Cordillo Downs
Coongie
Innamincka
Kanowana
QUEENSLAND
Oodnadatta
Coober Pedy
Strangways Springs
Beresford
Coward Springs
Marree
Farina
Lyndhurst
LAKE EYRE
Mt. Eba
Tarcoola
Wynbring
Barton
Mt. Christie
SPECIAL MINING LEASE
WEEKEROO HILLS AREA
Parachilna
Hawker
Quorn
Cockburn
PORT AUGUSTA
BROKEN HILL
PETERBOROUGH
WHYALLA
PORT PIRIE
GLADSTONE
BURRA
STREAKY BAY
CEDUNA
Smoky Bay
Nonning
Buckleboo
Yaninee
Minnipa
Kimba
Cowell
Elliston
Mt. Hope
Cummins
PORT LINCOLN
SPENCER GULF
GULF ST VINCENT
WALLAROO
MORGAN
RENMARK
LOXTON
GAWLER
ADELAIDE
MURRAY BRIDGE
Peebinga
KANGAROO ISLAND
EDITHBURGH
VICTOR HARBOR
PINNAROO
BORDERTOWN
KINGSTON S.E.
NARACOORTE
MT GAMBIER
N.S.W.
VICTORIA
SOUTHERN
OCEAN
AUSTRALIA
100
150 M

APPLICANT



SCALE 1:250,000 Appendix II

COMALCO LTD.

DOCKET DM. 149/72 AREA 72 SQ MILES

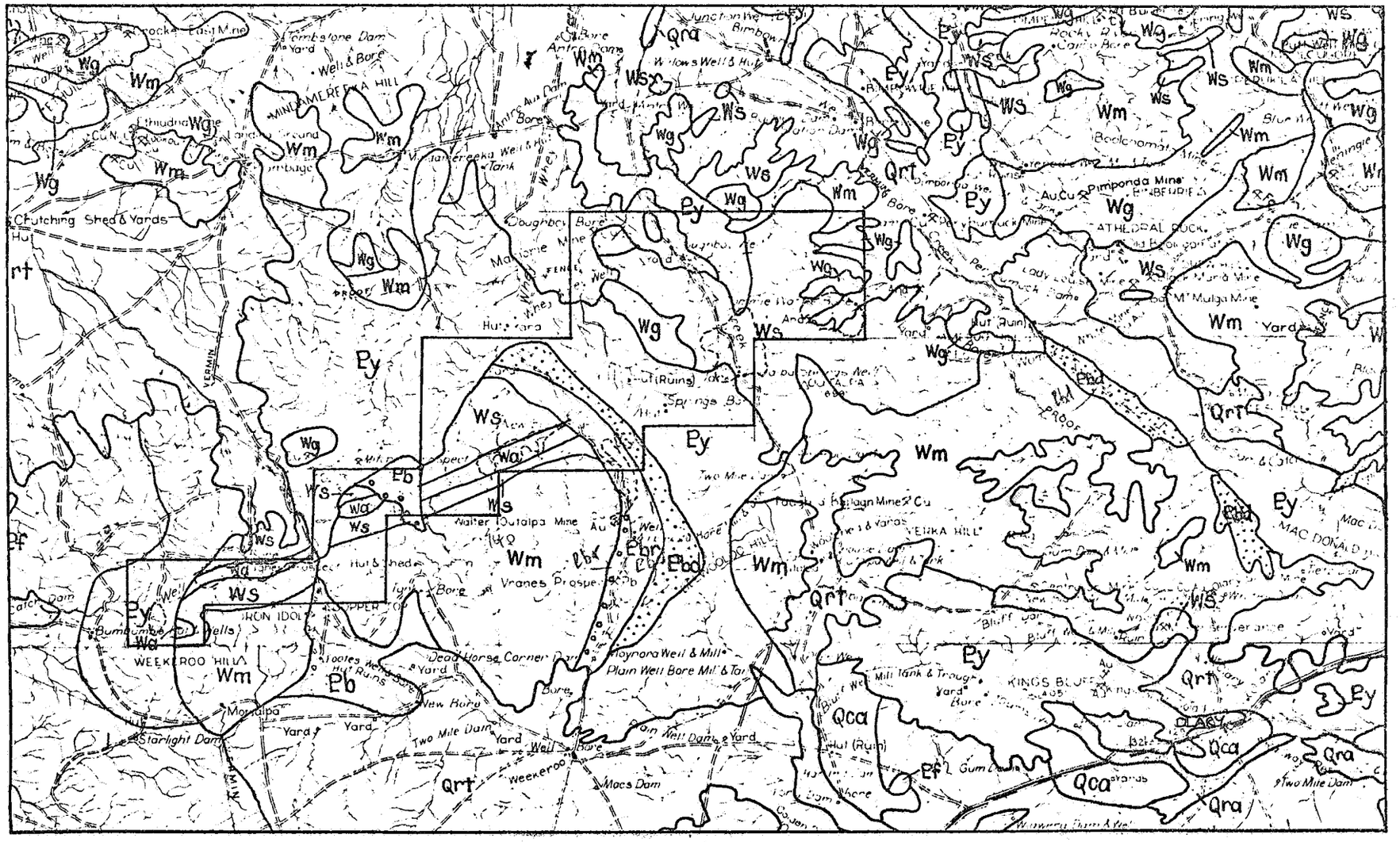
1:250000 PLANS OLARY

LOCALITY

S.M.L No. EXPIRY DATE

APPENDIX. III

Scale 1:250,000



LEGEND

QUATERNARY

Q. *Sedimentary veneer.*

STURTIAN

Ef *Farina sub-group.*

Ey *Yudnamutana sub-group*

TORRENTIAN

Eb *Burra group.*

CARPENTARIAN

Wg. *Granites and adamellite*

Wm *Migmatites and granite gniesses*

Wa. *Amphibolite rocks*

Ws. *Shists and quartzites*

Ground Traverses.

RESULTS OF THE SAMPLING CARRIED OUT
IN THE WEEKEROO HILLS AREA.

Sample No.	Map	Grid Ref.	Spl.Type	Remarks	%F
05/0501/11	"	3030/0166	Water(W)	Walpurta Bore	0.000205
12	"	3025/0128	Rock (R)	Ba lode	0.05
13	"	"	R	Fe Qtz lode	0.029
14	"	"	R	Calc/Sil	0.037
15	"	"	R	Sand st	0.022
16	"	"	R	Silic. contact	0.052
17	"	"	R	Pegmatite	0.05
18	"	3025/0136	R	Dol./lmst.	0.047
19	"	3029/0140	R	"	0.039
20	"	"	R	"	0.034
21	"	3030/0141	R	"	0.026
22	"	3030/0144	R	"	0.027
23	"	3032/0154	R	"	0.02
24	"	"	R	Calc crust	0.033
25	"	3032/1057	R	Calc crust	0.038
26	"	3034/1065	R	Dol./lmst.	0.021
27	"	"	R	"	0.038
28	"	"	R	"	0.022
29	"	"	R	"	0.032
30	"	"	R	Spotted shale	0.056
31	"	"	R	Dol./lmst.	0.034
32	"	3025/0200	W	Rock pools	0.000002
33	"	"	W	"	0.000001
34	"	"	W	"	
35	"	3023/0180	R	Fe, Qtz Lode	0.022
36	"	3020/0204	R	Dolomite	0.020
37	"	"	R	"	0.022
38	"	"	R	"	0.025
39	"	3024/0201	R	"	0.044
40	"	3023/0160	R	"	0.11

Sample No.	Map	Grid Ref.	Spl.Type	Remarks	%F
05/0501/41	Olary 1:250,000	3023/0160	R	Dolomite	0.06
42	"	3024/0154	R	"	0.02
43	"	3034/0161	R	"	0.02
44	"	"	R	"	0.02
45	"	"	R	"	0.02
46	"	"	R	"	0.02
47	"	3295/0141	R	"	0.036
48	"	3278/0281	R	Greisen	0.02
49	"	3290/0306	R	Calc. Sil	0.021
50	"	"	R	"	0.4
51	"	"	R	"	0.53
52	"	"	R	"	2.16
05/0501/178	"	2859/0152	R	Amphibolite	0.11
179	"	2856/0151	R	Calc-silicate	0.05
180	"	2851/0148	R	Qtzite	0.02
181	"	3018/0149	R	Walpurta	0.10
182	"	3018/0149	R	Cu Mine	0.09
183	"	"	R	Drill cuttings	0.09
184	"	"	R	"	0.09
185	"	"	R	"	0.11
186	"	"	R	"	0.09
187	"	"	R	"	0.08
188	"	"	R	"	0.09
189	"	"	R	"	0.16
190	"	"	R	"	0.10
191	"	"	R	"	0.09
192	"	"	R	"	0.10
193	"	"	R	"	0.09
194	"	3275/0281	R	Calc/Sil	1.60
195	"	"	R	"	3.62
196	"	"	R	"	1.40
197	"	"	R	"	2.25
198	"	"	R	"	0.68
199	"	"	R	"	0.70
200	"	"	R	"	0.80
201	"	"	R	"	0.64
202	"	"	R	"	0.36
203	"	"	R	Mica schist	0.11
204	"	"	R	Hornfels	0.12
205	"	"	R	Hornfels	0.10

0011

Sample No.	Map	Grid Ref.	Spl.Type	Remarks	%F
05/0501/206	Olary 1:250,000	3275/0281	R	Silic lode	0.03
207	"	"	R	Mica schist	0.10
208	"	"	R	Acid vein	0.03
04/0501/300	"	3083/0244	R	Hornfels	0.07
301	"	3075/0244	R	Tillite	0.02
302	"	2981/0210	R	Hornfels	0.07
04/0501/321 *	"	2979/0210	R	Black Min?	Results see below
322	"	"	R	"	
323	"	"	R	"	
324	"	"	R	"	

* Samples Analysed for following elements. (p.p.m.)

	Co	Cr	W	Ta	Nb	Pt	Pd	Os	Ir	Rh	Bi	Ti
321	x	300	50	x	x	x	x	x	x	x	x	>10,000
322	x	300	50	x	20	x	x	x	x	x	x	>10,000
323	x	300	50	x	20	x	x	x	x	x	x	>10,000
324	x	300	50	x	x	x	x	x	x	x	x	>10,000

x Below limit of detection.