RB 41/34

DEPARTMENT OF MINES

SOUTH AUSTRALIA

NORTH-EAST URANIUM EXPLORATION

CROCKER WELL URANIUM FIELD

REPORT NO. S.R. 11-2-58
G.S. 308
C.W. 36

REPORT OF DIAMOND DRILLING AT THE JAGGED ROCKS PROSPECT

by

W. R. Peterson
U.S.A.E.C.

TABLE OF CONTENTS

REPORT ON DIAMOND DRILLING AT

THE JAGGED ROCKS URANIUM PROSPECT.

Location - about 2½ miles north northeast of Glenorchy homestead, from which it can be reached by fair track.

SUMMARY

Samples taken from two small surface outcrops of Archaean metasediments, separated by 1600 feet of alluvium fill assayed chemically from two to five pounds U_3O_8 per ton. Diamond drilling to shallow depth disclosed davidite as the ore mineral in a mica diorite. The average grade of the deposit was two pounds U_3O_8 per ton, but because of its small size, no further exploration was considered warranted.

INTRODUCTION.

Davidite was discovered by Mines Department prospector, T. Antmanis, while testing Archaean rocks exposed in the Glenorchy area. Mineralization was confined to two small outcrops separated by a wide expanse of alluvium. Diamond drilling was designed to test the possibility of finding a concealed ore body.

PLANS.

S 1045	Locality Plan
55-116	Jagged Rocks Prospect Geology and Diamond Drill Holes.

ILLUSTRATION.

Photo. No. 1
View of the Eastern Outcrop with Davidite occurrence in foreground.

GEOLOGY.

The prospect area is composed of Archaean metasediments represented by felspathised quartz schists and granitoid rocks consisting of pegmatitic granite, mica diorites and later pegmatites. Felspathisation and assimilation of the metasediments has formed dark biotite rich migmatites characterised by coarse grained grey felspar. Radioactivity is confined to these

ILLUSTRATION

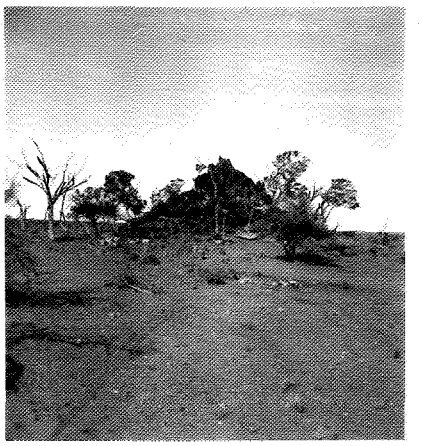

Photo. No. 1.

View of the Eastern Outcrop with Davidite occurrence in foreground

migmatites in two surface outcrops, separated by 1,200 feet of alluvial flat. Davidite in small nodular disseminations, partly replacing fine granular intergrowths of rutile and hematite, is the radioactive mineral.

The davidite bearing migmatites occur along the same line of strike and their petrographic similarity suggested an extension below the alluvial area. Outcrop samples submitted to the Petrological Laboratory are reported in Report No. 46/54 by A. Whittle as follows:-

"These dark grey rocks are macroscopically similar, and after microscopic examination are considered to be equivalent. They have acquired a schistosity as result of intense shearing which reduced most of the rock to a granulated mass of quartz and residual feldspar and at the same time caused rotation of abundant biotite into parallel disposition. Small zircon crystals are most abundant. Apatite is also abundant mostly as large fractured crystals.

All quartz is strongly strained, very irregular in shape and at various grain sizes. A large part of the original feldspar is sericitized to fine flaky or fibrous aggregates dispersed through the rock.

The opaque mineral occurs as nodules 1-2 m.m. in length and consists of fine granular intergrown rutile and hematite partly replaced by davidite. The nodules occur in great abundance as irregularly shaped lenticles with biotite halves arranged in preferred orientation with their long axis parallel to the rock schistosity. This structure resembles to some extent the Nodular Type ore of Radium Hill."

DIAMOND DRILLING

Diamond drilling, totalling 641 feet in three holes failed to prove any significant body of uranium mineralization below the alluvial area.

Drill holes Nos.1 and 2 eastern were located on the eastern outcrop, while No. 1 western was drilled below the western area of radioactivity.

Drill hole No.1, depressed 35 degrees south, was planned to cut the vertical projection of a radioactive high at a depth of 40 feet. A weakly radioactive intersection from 33½ to 40½ feet, not correlated with the outcrop occurrences, was confirmed by radiometric logging, calculated grades of U_3O_8 being 4.5 pounds per ton (34-35 ft.) and 3.5 pounds per ton (38 - 39 ft.). Seven feet of core from this zone assayed chemically 1.7 pounds of U_3O_8 per long ton.

Drill hole No.2, depressed 30 degrees on a bearing S 60° E was planned to test along the strike of the radioactive zone extending westerly from the outcrop. Core examination disclosed davidite at 172 ft. and from 245'6" to 248'5", grades calculated from radiometric probing being 3.5 pounds U_3O_8 per ton at each point. Chemical assays of the core at this interval was 2.1 pounds of U_3O_8.

Drill hole No.1 western was depressed 45 degrees on a bearing N 16° E to intersect the downward projection of a highly radioactive outcrop at a vertical depth of 30 feet. No mineralization was detected either in the core, or by radiometric probing.

[illegible] BOREHOLE LOGGING.

Diamond drill holes, Jagged Rocks 1/35, Jagged Rocks 2/30 and Jagged Rocks West 1/45 were radiometrically logged on 15th March by M. Parker and W. Miller.

No significant radioactivity was detected in the Jagged Rocks West No. 1 hole.

Calculated radiometric assays derived from calibrated tube readings showed the highest assays for Jagged Rocks 1/35 and 2/30 to be as under:-

JAGGED ROCKS NO. 1/35

Depth	Calculated Radiometric Assay
34' - 35'	4.5 lbs. U_3O_8/long ton
38' - 39'	3.0 lbs. U_3O_8/long ton

JAGGED ROCKS NO. 2/30

165' - 168'	3-5 lbs. U_3O_8/long ton
170' - 173'	3-5 lbs. U_3O_8/long ton

RESULTS

In the eastern outcrop a small tonnage of mineralised ground was evident at the surface between the main radioactive area and the intersection bore hole No. 1. No downward extensions were disclosed by diamond drilling.

It was concluded that this prospect was too small to justify any further drilling. However, it is considered that the wide expanse of alluvium should be tested for concealed deposits, by geophysical methods.

W. R. Peterson

(W. R. Peterson)
U. S. A. E. C.

WRP:AGK
6/7/55.

DEPARTMENT OF MINES, ADELAIDE

DIAMOND DRILL LOG

Project JAGGED ROCKS — DM

Bore No. No. 1 - East — Bore Serial No. DD

Hundred — Section — Plan Reference

Co-ordinates 543'S 208'W — R.L. of Collar

Bearing S 88° E — Depressed 35° — Driller Alan Leschen

Date Drilling commenced — Date Drilling completed

LOG

Depth From Ft.	Depth From In.	Depth To Ft.	Depth To In.	Core Recovered Ft.	Core Recovered In.	
0'	0"	21'	0"	end NXcore		greenish foliated (45°) mica schist 12 to 15' vertical fracturing and replacement.
21	0	28	0			greenish mica schist
28	0	29	2			Pegmatitic mica schist or hybrid granite w/davidite
29	2	33	6			hybrid granite
33	6	36	4			hybrid granite w/davidite - See Assay Sheet
36	4	40	5			" " " " " "
40	5	91	7			hybrid granite greenish
91	7	95	10			greenish pegmatitic granite
95	10	106	8			hybrid granite
106	8	111	6			greenish mica schist
111	6	171	6			greenish hybrid granite w/pyrite and hematite @ 149'6" large slug of pyrite
171	6	192	7			fine grained hybrid granite

* hole radiometric assay
34-35' = 4.5 lbs. U_3O_8 per long ton
38-39' = 3.0 " " " " "

Bore logged by W.R. Peterson

Date

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ASSAYS OF DRILL CORE

Project ..... JAGGED ROCKS .....

Bore No. ..... 1 - EAST .....

A S S A Y S.

FOOTAGE From Ft.	From Ins.	To Ft.	To Ins.	THICKNESS Ft.	THICKNESS Ins.	SAMPLE NO.	ASSAY U_3O_8 lbs/long ton Radiometric	ASSAY U_3O_8 lbs/long ton Chemical
28'	0"	29'	2"	1'	2"	U4/9795	none	none
33'	6"	36'	4"	2'	10"	U4/9796	1.8	1.7
36'	4"	40'	5"	4'	1"	U4/9797	1.5	1.7

Weighted average assay of ....7..... feet width from ..33'6"...
to ..40'5"... is ...1.7..... pounds U_3O_8 per long ton.

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DIAMOND DRILL LOG

Project Jagged Rocks — DM

Bore No. No. 2 - East - 30° — Bore Serial No. DD

Hundred — Section — Plan Reference

Co-ordinates 531' S 204' W — R.L. of Collar

Bearing S 60° W — Depressed 30° — Driller Alan Leschen

Date Drilling commenced — Date Drilling completed

LOG

Depth From Ft.	Depth From In.	Depth To Ft.	Depth To In.	Core Recovered Ft.	Core Recovered In.	
0	0	24	0			schistose chloritic hybrid granite (foliation 45°)
24	0	59	2			hybrid granite
59	2	63	5			pink pegmatitic hybrid granite
63	5	102	4			hybrid granite
102	4	131	0			hybrid granite with some pyrite
131	0	161	0			hybrid granite
161	0	161	4			cubic calcite crystals in clay
161	4	162	5			hybrid granite
162	5	171	0			leucocratic sheared quartz-feldspar
171	0	171	6			calcite vein
171	6	172	8			small crystals davidite in quartz-feldspar rock
						165'-173' radiometric probe assay of 3.5 lbs. U_3O_8 per long ton
172	8	184	3			chlorite mica in leucogranite
184	3	195	7			hybrid granite
195	7	244	9			biotitic hybrid granite with small blebs pyrite
244	9	245	6			brecciated and sheared hybrid granite
245	6	248	5			feldspar rock with davidite (see assay)
248	5	256	10			greenish hybrid granite
256	10	259	0			sericite schist
259	0	306	2			greenish granitoid rock (type of hybrid granite)

Bore logged by W.R. Peterson

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ASSAYS OF DRILL CORE.

Project ....Jagged Rocks Prospect.....

Bore No. ....No. 2 East - 30°.....

A S S A Y S.

FOOTAGE				THICKNESS		SAMPLE NO.	ASSAY U_3O_8 lbs/long ton	
From		To						
Ft.	Ins.	Ft.	Ins.	Ft.	Ins.		Radiometric	Chemical
245'	6"	248'	5"	2'	11"	U4/9807	2.1	2.1

Weighted average assay of ...3..... feet width from ..245'6"..... to ..248'5"..... is ...2.1.... pounds U_3O_8 per long ton.

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DIAMOND DRILL LOG

Project Jagged Rocks — DM

Bore No. No. 1 - West - 45° — Bore Serial No. DD

Hundred — Section — Plan Reference

Co-ordinates 1708'S 1803'W — R.L. of Collar

Bearing N 16° W — Depressed 45° — Driller Alan Leschen

Date Drilling commenced — Date Drilling completed

LOG

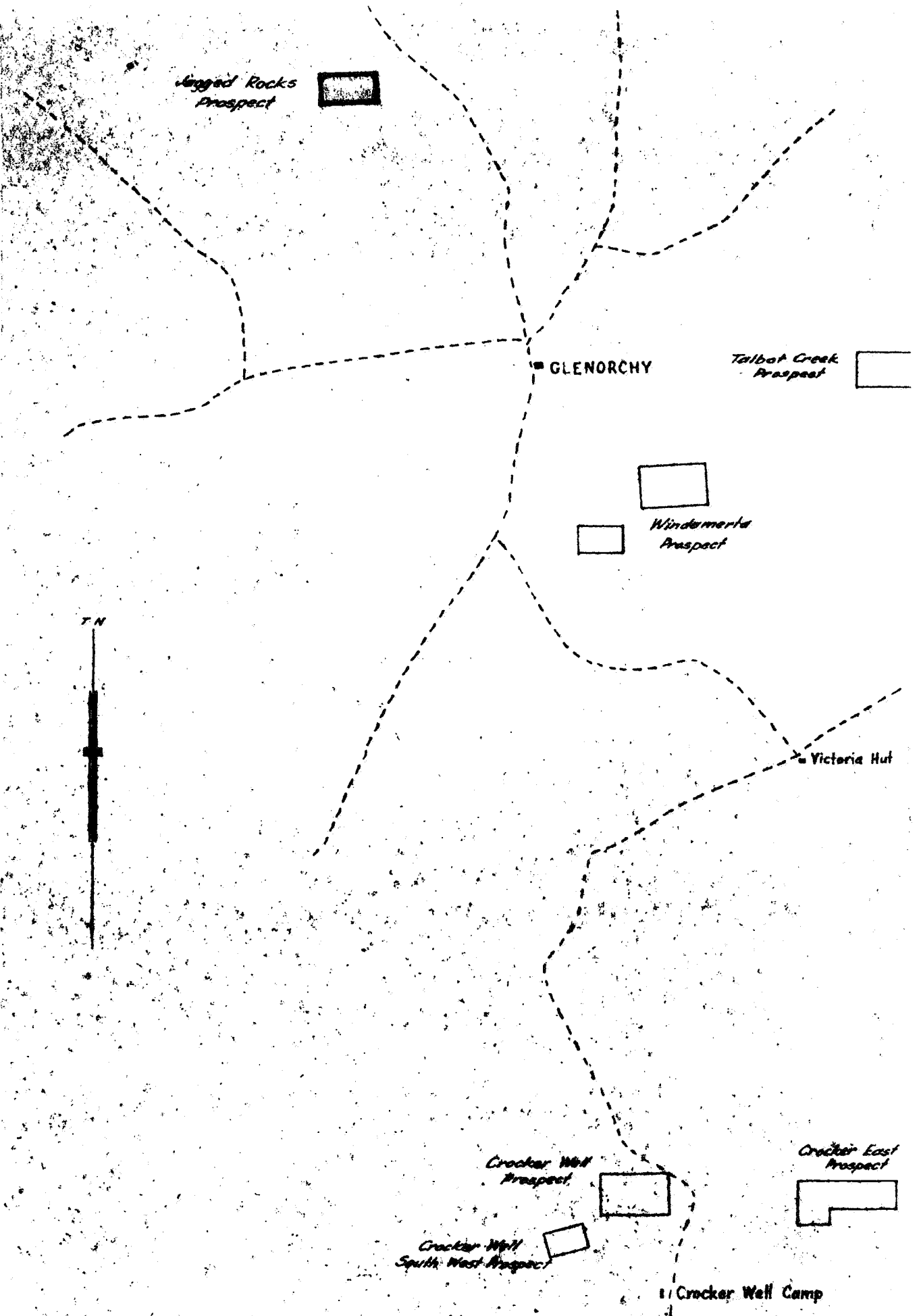
Depth From Ft.	Depth From In.	Depth To Ft.	Depth To In.	Core Recovered Ft.	Core Recovered In.	
0	0	10	0			only 2' recovered hybrid biotite granite
10	0	50	0			hybrid biotitic granite with some pyrite
50	0	52	3			leucogranite
52	3	91	6			hybrid biotitic granite
91	6	93	4			foliated hybrid granite (45°)
93	4	143	0			hybrid biotitic granite

NO SPLITS OR ASSAYS

Radiometric borehole log detected no radioactivity.

Bore logged by W.R. Peterson

Date 22/9/55



S.A. DEPARTMENT OF MINES					
Approved	Passed	Drn.	JAGGED ROCKS PROSPECT	D.M.	Scale 1 inch to 1 mile
		Tcd. J.F.S		Req.	S 1045
		Ckd.	LOCALITY MAP		Fg
- Director		Exd.			Date 15-4-55