

Second Report

on

GEOLOGICAL SURVEY OF BLUE DOLOMITE DEPOSIT

SECTION 5634, HD. YATALA, CO. ADELAIDE

(Highways & Local Government Department.)

by

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GEOLOGICAL SURVEY BRANCH.

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<u>Map Reference</u>	<u>Title</u>	<u>Scale</u>
56-202	Blue Dolomite Deposit, Sec. 5634, Hd. Yatala.	1 inch = 100ft.

<u>Report Reference</u>	<u>Previous Report</u>	<u>Date</u>
G.S. 542	G. S. 203	August, 1956.
H.O. 43/23	H.O. 39/96	

MICROFILME

Second Report

on

GEOLOGICAL SURVEY OF BLUE DOLOMITE DEPOSIT

SECTION 5634, HD. YATALA, CO. ADELAIDE.

(Highways & Local Government Department)

1. ABSTRACT

Seven diamond drill holes totalling 923' and further geological investigation in section 5634, Hd. Yatala, Co. Adelaide, indicate that the only dolomite which is readily accessible for quarrying is that contained in 5 to 6 acres adjacent to the road between Tea Tree Gully and Inglewood.

A reserve of 250,000 cubic yards of dolomite, variable in grade, is available, but quarrying may not be practicable.

2. INTRODUCTION

A geological survey and report on a blue dolomite deposit in Sections 5634/3, Hd. Yatala (see locality map), was requested by the Highways and Local Government Department on 31. 3.55. Approximately 250,000 cubic yards of dolomite is required for bitumen aggregate.

The survey was carried out by the writer and a first report (refer G.S.203: H.O.39/96) issued in June, 1955. Three diamond drill holes, totalling 440', were recommended to prove the existence of 350,000 cubic yards of readily accessible dolomite.

The drilling programme was subsequently approved and drilling of the 3 holes completed on 9. 2.56.

While the drilling was in progress a further request was received from the Highways & Local Government Department to extend the survey to ascertain if dolomite occurred in the vicinity of the two gullies which approach the area from the S.W. and N.E. This would enable quarrying to be carried out without disrupting traffic on the road between Tea Tree Gully & Inglewood.

A survey of the extended area was carried out during February, 1956 and a programme of another 4 diamond drill holes, totalling 600' proposed.

The drilling of these 4 additional holes was completed on 29. 5.56. The drilling programme was modified as work progressed and the final footage was 483'.

This report deals with the geology and drilling results of the whole area investigated.

3. DRILLING

D.D.1, D.D.2, and D.D.3 (see accompanying map) were drilled initially to prove the existence of 250,000+ cubic yards of dolomite in the area outlined vide the first report (C.S. 303: H.O. 39/96)

The following is a summary of the logs of these 3 holes (for details see Appendix I):

			Core Recovery
D.D.1.	0 - 31'	Predominantly blue dolomite	
	31'- 86'	Quartzitic dolomite	76%
	86'-180'	Dolomitic quartzite	
D.D.2	0 -160'	Predominantly blue dolomite	68%
D.D.3	0 - 39'	(variable) Felspathic sandstone	29%
	39'-100'	Predominantly dolomitic	

D.D.4 (see accompanying map) was then drilled to ascertain structure and rock type with depth in the vicinity of the north-west trending gully. This was followed by D.D.5 and D.D.6 to ascertain the structure and rock type in the vicinity of the south west gully. Finally D.D.7 was drilled to find the southerly extension and thickness of the known dolomite band located in D.D.1.

Summarised logs are as follow: (for details see Appendix I):

			Core Recovery
D.D.4.	0 - 15'	Contorted shale	
	15'- 62'	Felspathic sandstone to quartzite	37%
	62'- 108'	Predominantly dolomite	
D.D.5	0 - 54'	Felspathic sandstone to quartzite	48%
	54 - 102'	Predominantly dolomite	
D.D.6	0 - 100'	Fragments of shale & chert with sandy sludge	6%

D.D.7	0 - 47'	Sandstone	58%
	47' - 169'	Dolomite to dolomitic quartzite	
	169' - 173'	Dolomitic quartzite	

Skeleton core samples, taken at 5' intervals, for each of the 7 holes have been retained at the Department's core shed (Thebarton) and the remainder of the core is available to H. & L.G. Department for test purposes (if necessary).

4. GEOLOGY

The extended survey and diamond drilling has shown that the blue dolomite band in Section 5634, Hd. Yatala, is approximately 100 - 150' thick and is overlain by sandstone, except for an area, approximately 5 - 6 acres, adjacent to the road between Tea Tree Gully and Inglewood (see attached map)

It was thought formerly that the sandstone outcropping 300' south of the area outlined (see attached map and first report) was a capping. However further investigation and the results of D.D.3 (see Appendix I) indicated that it passes through the western side of this area and can be traced along the hill-side north of the road (not shown on the map).

Observation of this marker sandstone bed show that the major structure is an asymmetrical fold with a steeply dipping limb on the western side (see sections AA, BB, & CC). The eastern limb has comparatively flat dips which accounts for the non-appearance of sandstone outcrops east of the anticlinal crest. Local flattenings in dip occur on the eastern limb such as that observed in the quarry B and shown in section AA'. The anticline observed in quarry A is now thought to be a minor fold on the eastern limb of the fold.

Petrological evidence (see Appendix 2) shows that the dolomite band is the result of progressive alteration of a siliceous bed. The resulting rock shows all stages of replacement by dolomite with resultant extreme variation in grade. The dolomite is generally fractured with infillings of muscovite, and occasionally quartz veins.

A major fault occurs in the south eastern part of the area and complementary minor shearing in a north-west direction probably accounts for the very poor core recovery in D.D.6 and the non-appearance of dolomite or quartzite in the southern part of the area.

On the western side of the area a fault (seen in quarry C and in the old workings further south) brings phyllites and slates against a dolomite band. This band is too narrow to warrant investigation.

5. RESERVES

The geological structure shows that insufficient reserves of dolomite occur in the vicinity of the N.W. valley and no readily accessible deposit near the S.W. valley. The only deposit which is readily available, is that adjacent to the main road.

This area was previously estimated to contain between 250,000 cubic yards and 350,000 cubic yards of useable material. However the occurrence of a sandstone bed in the western portion of this area reduces the reserves by approximately 25% to 187,000 cubic yards. This figure can be increased to 250,000 cubic yards by extending the area to the south (see map for new area outlined). Further south of the additional area dolomite is overlain by an increasing thickness of sandstone and shale with chert.

Because of the variable grade the reserves of fine grained blue dolomite will be less than the above figure. However H. & L. G. Dept. may find, by testing the core of D.D.1 and D.D.2, that the siliceous dolomite bands are also suitable for their purpose.

6. CONCLUSIONS

Diamond drilling and further geological investigation in Section 5634, Hd. Yatala, Co. Adelaide have shown that the only dolomite which is readily accessible for quarrying is that contained in 5 to 6 acres adjacent to the road between Tee Tree

Gully and Inglewood.

The deposit has resulted from progressive replacement by dolomite of a siliceous bed and as a consequence is variable in grade.

An area containing 250,000 cubic yards of dolomite, variable in grade, has been outlined, but it may present a quarrying difficulty being adjacent to a public road.

L. S. Denholm *pp. Allcrand*
L. S. Denholm

LSD:JAH.
14.8.56.

ASSISTANT GEOLOGIST

DIAMOND DRILL LOG.

Blue Dolomite Deposit, Tea Tree D.M. 776/55
 Gully
Hole No. D.D.I Hole Serial No. DD 1/56
Hundred Yatala Section 5634 Plan Reference
County Adelaide R.L. of Collar 1150' (assumed datum)
Vertical Depth 180'0" Driller J. Jensen
Date Drilling commenced 12.1.56. Date Drilling completed 27. 1.56.
 Logged by L. S. Denholm

OBJECT: To determine the grade with depth and to help prove a reserve of 250,000 cubic yds. of dolomite.

RESULT: The grade changes progressively from blue dolomite with thin shaley bands (0 - 81') to quartzitic dolomite (81'-86') and finally dolomitic quartzite (86-180').

GEOLOGICAL LOG

<u>From</u>	<u>To</u>	<u>Description of Core</u>
0' 0"	1' 7"	Travertine
1 7	10 2	Fine grained blue cherty dolomite. Broken Core.
10 2	20 2	Very broken core. White crystalline dolomite, quartz and leached sandy material with harder shaley bands.
20 2	41 0	Predominately blue cherty dolomite with thin contorted shaley bands, quartz, etc.
41 0	53 9	Light blue grey dolomitic quartzite with breccia and pitting.
53 9	81 4	Generally fine grained blue cherty dolomite grading to dolomitic quartzite in places Sample for Pet. Lab. at 76'6"
81 4	85 9	Pale blue grey med. grained quartzitic dolomite with intraformational effects and pyrite. Sample for Pet. Lab. at 82'4"
85 9	180 0	Grayish blue dolomitic quartzite grading to light brownish quartzite at 88' 0". Sample for Pet. Lab. at 172'4" End of Hole.

CORE RECOVERY

From		To		Core Recovered		% Recovery Length(See Geol.Log)	%
0'	0"	10'	2"	3'	0"	0 - 10' 2"	30
10	2	13	0		5		
13	0	15	6		5		
15	6	17	11		2		
17	11	20	2		5	10'2"-20'2"	15

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length (See Geol. Log)	%
20	2	21	0		8		
21	0	22	0		8		
22	0	22	7		5		
22	7	25	4	1	6		
25	4	27	10	1	6		
27	10	33	4		2		
33	4	41	0	1	5	20'2"-4'0"	30
41	0	43	8	1	7		
43	8	44	8		7		
44	8	45	4		7		
45	4	46	2		9		
46	2	49	6	2	5		
49	6	51	6	1	2		
51	6	52	7		6		
52	7	53	9	8	8	41'0"-53'9"	64
53	9	54	4		6		
54	4	54	11		7		
54	11	56	11		10		
56	11	60	11	1	7		
60	11	61	6		8		
61	6	62	8	1	2		
62	8	66	6	3	11		
66	6	71	4	4	8		
71	4	74	5	3	1		
74	5	79	6	4	10		
79	6	81	4	1	8	53'9"-81'4"	86
81	4	83	10	2	8		
83	10	84	8		9		
84	8	85	9	1	1	81'4"-85'9"	100
85	9	88	8	2	11		
88	8	90	0	1	7		
90	0	91	0	1	0		
91	0	92	7	1	7		
92	7	93	9	1	2		
93	9	95	10	2	1		
95	10	96	8		7		
96	8	97	9	1	3		
97	9	99	10	1	6		
99	10	100	11	1	3		
100	11	102	7	1	6		
102	7	104	0	1	6		
104	0	107	0	3	0		
107	0	109	2	2	2		
109	2	110	4	1	0		
110	4	112	7	1	11		
112	7	116	10	4	2		
116	10	118	10	1	9		
118	10	120	0	1	4		
120	0	121	6		11		
121	6	122	9	1	5		
122	9	123	11	1	2		
123	11	125	8	1	5		
125	8	128	2	2	3		
128	2	129	6	1	3		
129	6	131	10	2	1		
131	10	133	11	2	0		
133	11	134	6		9		
134	6	138	8	3	8		
138	8	139	6		8		
139	6	141	0	1	5		
141	0	142	6	1	5		

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length(See Geol.log.	%
142	6	143	5	1	0		
143	5	143	8		2		
143	8	145	10	2	0		
145	10	147	5	1	5		
147	5	148	6	1	10		
148	6	150	0	1	9		
150	0	150	10		4		
150	10	152	5	1	5		
152	5	153	4		9		
153	4	154	2		9		
154	2	156	4	2	2		
156	4	159	11	3	4		
159	11	163	0	3	0		
163	0	164	10	1	10		
164	10	166	8	1	5		
166	8	168	4		11		
168	4	170	11	2	5		
170	11	173	6	2	5		
173	6	174	6		10		
174	6	176	0	1	6		
176	0	177	5	1	2		
177	5	180	0	2	7	85'9"-180'0"	95
Total				137'	9"	0' -180'0"	76%

D.D.2

DIAMOND DRILL LOG.

Blue Dolomite Deposit, Tea Tree D.M. 776/55.
Gully

Hole No. D.D.2 Hole Serial No. DD 239/55.

Hundred Yatala Section 5634 Plan Reference

County Adelaide R.L. of Collar 1123' (assumed datum)

Vertical Depth 160'6" Driller J. Jensen

Date Drilling commenced 5.12.55. Date Drilling completed 21.12.55.

Logged by H.S. Benholm

OBJECT To determine grade with depth and to help prove
a reserve of 250,000 cubic yards of dolomite.

RESULT The total core consists of siliceous dolomite
to dolomite

GEOLOGICAL LOG

<u>From</u>	<u>To</u>	<u>Description of core.</u>
0' 0" 15' 9"		Fine grained blue grey cherty dolomite with thin shaley partings, quartz veins, crystalline dolomite, etc.
15' 9" 30' 3"		Light blue grey dolomite quartzite, brecciated bands at 16'7" (3") and 19'0" (2") Bedding(?) 25° to length of core.
30' 3" 54' 11"		Fine grained blue grey cherty dolomite with shaley partings, brecciated in places, and soft shaley band 30'9" - 31'5"
54' 11" 55' 7"		Light blue grey dolomitic (?) quartzite
55' 7" 66' 5"		Fine grained blue grey cherty dolomite with thin shaley partings
66' 5" 69' 10"		Light blue grey dolomitic coarse sandstone with shaley partings
69' 10" 131' 5"		Fine grained blue grey cherty dolomite with thin shaley partings Brecciated at 121' 6" (2") 120' 6" (6") 130' 8" (9") Quartz vein at 111' 2" (2") 115' 0" (2") 115' 7" (15") Pyrite crystals 122' 4" (9")
131' 5" 133' 0"		Pitted fine grained blue grey cherty dolomite
133' 0" 134' 6"		Medium grained blue grey sandy dolomite
138' 6" 160' 6"		Fine grained blue grey dolomite with thin shaley partings. End of hole.

CORE RECOVERY

From		To	Core Recovered		% Recovery	
					Length (See Geol. Log)	%
0'	0"	2'	6"	1'	3"	
2'	6"	3'	8"		10"	
3'	8"	4'	8"		6"	
4'	8"	5'	7"		8"	
5'	7"	8'	3"	1'	8"	
8'	3"	10'	2"	1'	11"	
10'	2"	10'	10"		7"	
10'	10"	11'	4"		6"	
11'	4"	12'	9"	1'	5"	
12'	9"	14'	10"	1'	1"	
14'	10"	15'	9"		11"	0' - 15' 9" 70
15'	9"	17'	9"	2'	0"	
17'	9"	19'	3"		8"	
19'	3"	20'	5"		9"	
20'	5"	22'	3"	1'	10"	
22'	3"	26'	4"	3'	11"	
26'	4"	30'	3"	1'	8"	15' 9" - 30' 3" 75
30'	3"	31'	11"		10"	
31'	11"	35'	0"		2"	
35'	0"	36'	11"		5"	
36'	11"	37'	9"		5"	
37'	9"	41'	9"	1'	8"	
41'	9"	43'	2"		5"	
43'	2"	44'	0"		10"	
44'	0"	46'	2"	1'	7"	
46'	2"	46'	8"		6"	
46'	8"	47'	7"		9"	
47'	7"	49'	0"	1'	4"	
49'	0"	52'	11"		5"	
52'	11"	54'	11"	1'	7"	30' 3" - 54' 11" 50
54'	11"	55'	7"		8"	54' 11" - 55' 7" 100
55'	7"	58'	4"	1'	4"	
58'	4"	58'	7"		3"	
58'	7"	60'	7"	1'	3"	
60'	7"	63'	10"		6"	
63'	10"	64'	8"		7"	
64'	8"	65'	2"		3"	
65'	2"	66'	5"	1'	1"	55' 7" - 66' 5" 43
66'	5"	68'	0"	1'	6"	
68'	0"	69'	10"	1'	3"	66' 5" - 69' 10" 78
69'	10"	71'	6"		7"	
71'	6"	73'	2"		4"	
73'	2"	74'	8"		3"	
74'	8"	75'	4"		9"	
75'	4"	76'	10"		2"	
76'	10"	77'	10"		11"	
77'	10"	78'	5"		7"	
78'	5"	79'	2"		6"	
79'	2"	80'	2"	1'	0"	
80'	2"	82'	9"	1'	4"	
82'	9"	83'	10"		8"	
83'	10"	86'	9"		3"	
86'	9"	89'	7"		8"	
89'	7"	90'	5"		4"	
90'	5"	92'	10"		2"	
92'	10"	94'	1"		9"	
94'	1"	95'	4"		8"	
95'	4"	97'	5"	1'	11"	
97'	5"	99'	0"	1'	7"	
99'	0"	99'	6"		6"	
99'	6"	100'	11"	1'	5"	
100'	11"	101'	10"		9"	

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length (See Geol. Log)	%
101'	10"	104'	6"	2'	4"		
104	6"	106	6	1	3		
106	6	109	1	2	6		
109	1	113	0	3	9		
113	0	114	6	1	4		
114	6	117	0	2	3		
117	0	118	0	1	0		
118	0	118	8		4		
118	0	119	4		8		
119	4	124	3	4	8		
124	3	126	4	1	3		
126	4	128	7	2	2		
128	7	131	5	2	4	69'10"-131'5"	67
131	5	133	0		9	131'5"-133'0"	50
133	0	133	9		7		
133	9	135	11	2	2		
135	11	138	6	2	5	133'0"-138'6"	96
138	6	142	7	3	11		
142	7	151	1	8	4		
151	1	153	9	1	11		
153	9	155	5		8		
155	5	159	6	3	7		
159	6	160	6	1	0	138'6"-160'6"	88
Total		108'		10"	0'	-160'6"	68

DIAMOND DRILL LOG

Blue Dolomite Deposit Tea Tree D.M. 776/55.
Gully

Hole No. D.D.3

Hole Serial No.D.D. 7/56.

Hundred Yatala

Plan Reference

County Adelaide

R.L.of Collar 1077'(assumed datum)

Vertical Depth 100'0"

Driller J. Jensen

Date Drilling commenced 2. 2.56.Date Drilling completed 9. 2.56.

Logged by L.S.Denholm

OBJECT: To determine the grade of dolomite with depth and help to prove a reserve of 250,000 cubic yards of dolomite.

RESULT: The upper 30' consists of sandstone and then predominately dolomite.

GEOLOGICAL LOG

<u>From</u>		<u>To</u>		<u>Description of core</u>
0'	0"	2'	0"	Gritty red brown clay with fragments of quartz, chert, coarse sandstone.
2'	0	19		Predominately light brownish sericitic sandstone with thin dark partings nearly at 90° to the core.
19	3	37	6	Very broken core. Fragments of the above and white magnesite(?) and chert
37	6	49	6	Fine grained dark cherty dolomite with coarser brownish dolomite and quartz. Fractures filled with shaley minerals. Crystalline dolomite (?) band 47'3"-48'6"
49	6	53	4	Brownish dolomitic sandstone
53	4	60	2	Predominately quartz and calcite with fragments of dark dolomite.
60	2	68	0	Fine grained blue grey dolomite with calcite and quartz.
68	0	69	8	Bluish-quartzite with dark bands of dolomite 400 to core.
69	8	76	9	Very contorted dark grey argillaceous rock
76	9	100	0	Fine grained blue grey dolomite. Clay band 92'0"-95'0" End of hole.

CORE RECOVERY

From		to		Core Recovered		% Recovery	
						Length (See Geol. Log)	%
0	0	10	0	3	9		
10	0	12	2		7		
12	2	12	10		4		
12	10	13	6		8		
13	6	14	3		4		
14	3	15	8		11		
15	8	17	0		6		
17	0	17	5		4		
17	5	19	3		5	0 - 19'3"	42
19	3	22	1		3		
22	1	25	2		2		
25	2	26	2		2		
26	2	28	0		2		
28	0	31	3		2		
31	3	34	10		0		
34	10	37	6		6	19'3"-37'6"	8
37	6	41	11		2		
41	11	43	5	1	3		
43	5	45	3		9		
45	3	45	11		10		
45	11	46	5		5		
46	5	47	1		9		
47	1	48	10		7		
48	10	49	6		8	37'6"-49'6"	45
49	6	50	4		10		
50	4	53	4		10	49'6"-53'4"	47
53	4	56	10		11		
56	10	59	4		5		
59	4	60	2		5	53'4"-60'2"	25
60	2	61	10		10		
61	10	63	3		4		
63	3	64	5		1		
64	5	65	8	1	3		
65	8	67	6		3		
67	6	69	8	1	3	60'2"-69'8"	42
69	8	72	5		6		
72	5	76	0		4		
76	0	76	6		4		
76	6	76	9		3	69'8"-76'9"	21
76	9	78	1		2		
78	1	78	6		5		
78	6	79	0		4		
79	0	79	7		7		
79	7	81	8	1	3		
81	8	82	6		7		
82	6	84	4		2		
84	4	87	4		7		
87	4	92	2		4		
92	2	95	6		11		
95	6	100	0		5	76'9"-100'0"	24
Total				29	3	0' -100'	29

DIAMOND DRILL LOG.

Blue Dolomite Deposit, Tea Tree D.H. 776/55.
Gully.

Hole No. D.D.4 Hole Serial No. DD 12/56.

Hundred Yataia Section 5634 Plan Reference

County Adelaide R. L. of Collar 1185' (assumed datum)

Vertical Depth 107'8" Driller J. Jensen

Date Drilling commenced 16.2.56. Date Drilling completed 17.4.56.

Logged by L.S.Denholm

OBJECT: To clarify geological structure and determine grade with depth in the vicinity of the M.W. trending gully.

RESULT: The upper 62' is predominately sandstone and shale side overlying dolomite.

GEOLOGICAL LOG:

<u>From</u>	<u>To</u>	<u>Description of core</u>
0' 0" 1' 0"		Light brown clay.
1' 0" 15' 0"		Broken core consisting of greyish micaceous shale, quartz with replacement form and greyish brown sand.
15' 0" 24' 4"		Predominately medium grained friable leached felspathic sandstone with thin shaley partings.
24' 4" 38' 6"		Hard brownish grey medium grained felspathic quartzite. Sample for Pet.Lab.at 38'4"
38' 6" 55' 0"		Ditto but generally finer grained with thin shaley partings.
55' 0" 61' 10"		Leached felspathic quartzite
61' 10" 94' 0"		Predominately hard fine grained blue cherty dolomite with crystalline calcite, shaley partings, sedimentary breccia and quartz veins.
94' 0" 104' 8"		Medium grained to fine greyish quartzite with thin shaley bands.
104' 8" 107' 8"		Cherty dolomite breccia in a shaley host rock. End of hole.

CORE RECOVERY

From		To		Core Recovery		% Recovery	
						Length (See Geol. Log)	%
0'	0"	15'	0"	3'	6"	0 - 15'0"	23
15	0	16	8		8		
16	8	17	8		4		
17	8	18	11		8		
18	11	20	4	5	5		
20	4	21	8	1	3		
21	8	23	0		5		
23	0	23	6		5		
23	6	24	4	1	0	15'0"-24'4"	55
24	4	25	6	2	4		
25	6	26	8		11		
26	8	28	2		11		
28	2	28	7		5		
28	7	29	5		9		
29	5	31	0	1	4		
31	0	31	6		6		
31	6	34	6	3	0		
34	6	40	0	5	6	24'4"-40'0"	93
40	0	42	0		9		
42	0	43	2		2		
43	2	44	3		3		
44	3	46	3		5		
46	3	47	3		3		
47	3	49	6		3		
49	6	51	0		9		
51	0	52	6		5		
52	6	55	0		2	38'6"-55'0"	22
55	0	55	7		2		
55	7	57	9		7		
57	9	59	6		7		
59	6	61	10		10	55'0" - 61'10"	31
61	10	65'	8		6		
65	8	71	0		0		
71	0	71	9		6		
71	9	73	6		3		
73	6	78	0		11		
78	0	79	2		11		
79	2	79	5		3		
79	5	80	11	1	4		
80	11	81	2		3		
81	2	82	3	1	0		
82	3	83	2		10		
83	2	84	3		10		
84	3	86	6		8		
86	6	88	8	1	3		
88	8	89	10		9		
89	10	94	0		4	61'10"-94'0"	32
94	0	98	0		5		
98	0	100	5		9		
100	5	104	8		9	94'0"-104'8"	18
104	8	106	10		3		
106	10	107	0		7		
107	0	107	5		4		
107	5	107	8		3	104'8"-107'8"	37
Total				40'	5"	0' - 107'8"	37

DIAMOND DRILL LOG

Blue Dolomite Deposit, Tea Tree D.M. 776/55.
Gully.

Hole No. D.D. 5

Hole Serial No. D.D.

Hundred Fathoms Section 5634 Plan Reference

County Adelaide

R.L. of Collar 1220' (assumed datum)

Vertical Depth 101' 7"

Driller J. Jensen

Date Drilling commenced

Date drilling completed

Logged by L.S. Denholm.

OBJECT: To investigate geological structure and rock type in the vicinity of the S... gully.

RESULT: The upper 54' is sandstone overlying predominantly dolomite.

GEOLOGICAL LOG

<u>From</u>	<u>To</u>	<u>Description of core</u>
0' 0" 27' 0"	6"	6" of light brown clay then very broken core of chert and quartz.
27' 0" 54' 6"	6"	Very broken core. Predominantly grayish brown sandstone with intraformational fragments, quartz and thin slaty partings almost perpendicular.
54' 6" 71' 9"	9"	Fine grained almost black contorted to core, cherty dolomite with occasional white quartz veins (up to 3" wide).
71' 9" 78' 8"	8"	Blue gray medium grained quartzitic dolomite. Brecciation from 73' 4" to 75' 0"
78' 8" 101' 7"	7"	Fine grained blue gray to almost black cherty dolomite with brecciation bands and contorted bedding (?) 450 to core. End of hole.

CORE RECOVERY:

<u>From</u>	<u>To</u>	<u>Core Recovery</u>	<u>% Recovery</u>
			<u>Length (See Geol Log)</u>
0'	0"	5'	10"
5'	10	20	0
20	0	23	0
23	0	27	0
27	0	34	0
34	0	36	0
36	0	38	0
38	0	43	6
43	6	44	6
44	6	46	0
46	0	49	0
49	0	52	0
52	0	54	6
54	6	56	6
		1'	9"
		1	5
		3	5
		4	6
		4	6
		9	6
		6	6
		2	6
		2	6
		1	2
		4	4
			0 - 27' 0"
			15
			27' 0" - 54' 6"
			15

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length (See Geol. Log)	%
54'	6"	57'	7"		4"		
57	7	59	7	1	6		
59	7	60	2		9		
60	2	64	10	4	0		
64	10	69	5	1	3		
69	5	71	9	2	0	54'6"-71'9"	59
71	9	76	8	5	0		
76	8	81	7	4	6		
81	7	86	2	5	0		
86	2	91	3	4	5		
91	3	96	4	5	2		
96	4	101	7	5	2	71'9"-101'7"	98
		Total		48'	0"	0' -101' 7"	48

DIAMOND DRILL LOG

Blue Dolomite Deposit, Tea Tree D.M. 776/55.
Gully.

Hole No. D.D.6

Bore Serial No. D.D.

Hundred Yards Section 5634

Plan Reference

County Adelaide

R.L. of Collar 1193' (assumed datum)

Vertical Depth 100'0"

Driller

Date Drilling commenced

Date Drilling completed

OBJECT: To investigate geological structure & rock type in the vicinity of the S.W. gully.

RESULT: The core recovery was very poor consisting of fragments of shale and chert and sandy sludge.

GEOLOGICAL LOG:

<u>From</u>	<u>To</u>	<u>Description of core</u>
0' 0"	4' 3"	Red brown sandy clay and then 7" of core of dark chert and quartz. Chert has bedding (?) 500' to core.
4' 3"	8' 2"	White magnesian weathered shale
8' 2"	13' 3"	Broken fragments of dark chert
13' 3"	20' 7"	No core
20' 7"	26' 6"	Sludge consisting of brownish sand
26' 6"	32' 2"	No core
32' 2"	100' 0"	Very broken core. Predominantly sandy sludge with odd pieces of chert. End of hole.

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length (See Geol. Log.)	%
0'	0"	4'	3"	2'	0"	0 - 4'3"	47
4	3	5	0		10		
5	0	7	0		2		
7	0	8	2		7	4'3"-8'2"	43
8	2	9	9		6		
9	9	13	3		3	8'2"-13'3"	15
13	3	20	7	No core		13'3"-20'7"	0
20	7	26	6	6" sludge		20'7"-26'6"	0

CORE RECOVERY

From		To		Core Recovered	Recovery	Length (See Geol. Log)	Y
26'	6"	29'	5"	No core			
29'	5	32	2	"			
32	2	34	5	5			
34	5	38	7	1			
38	7	41	8	4			
41	8	49	2	5			
49	2	62	4	2			
62	4	66	6	6" sludge			
66	6	70	0	"			
70	0	73	0	No core			
73	0	78	0	6" sludge			
78	0	84	9	Sludge & 2"			
84	9	95	0	"			
95	0	100	0	2"		32' 2" - 100' 0"	3
Total				6'	3"	0' - 100'	6

DIAMOND DRILL LOG.

Blus Dolomite Deposit, Tea Tree D.M. 776/55.
Gully.

Hole No. D.D.7

Hole Serial No. D.D.

Hundred Yatala Section 5634

Plan Reference

County Adelaide

R.L. of Collar 1227' (assumed datum)

Vertical Depth 173'3"

Driller J. Jensen

Date Drilling commenced

Date Drilling completed

Logged by L.S. Donholm.

OBJECT: To investigate the rock types between D.D.1 and D.D.6.

RESULT: The upper 47' consists of sandstone which overlies dolomite quartzite at 169'

GEOLOGICAL LOG.

<u>From</u>	<u>To</u>	<u>Description of core</u>
0' 0" 14' 6"		Very broken core consisting of brown clay, fine shaley sandstone, quartz fragments and chert
14' 6" 25' 11"		Fine phyllitic sandstone, chert fragments and clay.
25' 11" 47' 0"		Brownish sandstone with dark partings approx. 90° to core. Quartz and clay from 29'6"-32'2"
47' 0" 48' 10"		Chert fragment (1")
48' 10" 65' 4"		Fine grained blue black cherty dolomite with occasional white quartz patches. Coarser light brownish and shaley dolomite 52'10"-53'4", bedding (?) 20° to core. Dolomite pitted from 56'8" - 65'4". Limonitic piece 62'0"-62'2".
65' 4" 146' 3"		Predominately fine grained blue black (cherty) to blue dolomite with coarser and lighter colour bands and containing shaley partings and white quartz veins. Coarser quartzitic dolomite 89'2"-99'5". Brecciation 78'6"-79'5", 106'5"-106'9", 115'6"-116'0". Quartzitic dolomite 135'4"-138'9", 143'7"-145'3" bedding 25° to core.
146' 3" 169' 0"		Dolomitic quartzite with numerous shaley partings. Brecciation 146'8"-147'1"
169' 0" 173' 3"		Greyish medium grained quartzite. End. of hole.

CORE RECOVERY

From		To		Core Recovered		% Recovery	
						Length (See Geol. Log)	%
0	0	4	6	1	0		
4	6	6	8		11		
6	8	7	3	1	0		
7	3	10	0	No core			
10	0	11	8	No core			
11	8	14	6		9	0' - 14'6"	24
14	6	16	8		10		
16	8	20	10		5		
20	10	25	11		5	14'6"-25'11"	15
25	11	20	6	1	3		
20	6	32	2		6		
32	2	36	6		4		
36	6	42	4		7		
42	4	47	0		11	25'11"-47'0"	17
47	0	48	10		1	47' 0"-48'11"	4
48	10	50	7	1	0		
50	7	51	2		3		
51	2	57	2	2	2		
57	2	62	0		3		
62	0	64	5		7		
64	5	65	4		6	48'11"-65'4"	30
65	4	68	1	1	7		
68	1	70	4		9		
70	4	73	6	1	0		
73	6	75	9		10		
75	9	78	8	2	1		
78	8	83	9	3	10		
83	9	87	4	2	7		
87	4	89	4	1	0		
89	4	94	0	4	3		
94	0	99	1	5	1		
99	1	104	3	5	0		
104	3	106	11	1	9		
106	11	110	2	2	3		
110	2	115	3	4	5		
115	3	118	7	2	10		
118	7	119	6	1	0		
119	6	123	8	1	9		
123	8	125	3	1	7		
125	3	130	0	3	3		
130	0	134	4	1	4		
134	4	138	9	4	2		
138	9	141	7	2	4		
141	7	146	3	5	1	65'4"-146'3"	74
146	3	151	3	3	8		
151	3	156	1	4	6		
156	1	159	6	2	10		
159	6	162	5	2	2		
162	5	165	10	3	5		
165	10	169	0	3	2	146'3"-169'0"	86
169	0	170	4	1	4		
170	4	171	9	1	6		
171	9	173	3		9	169'0"-173'3"	86
Total				98'	10"	0 - 173'3"	58

PETROLOGICAL REPORT

BLUE DOLOMITE, TEA TREES GUILY

The following is a report of 4 specimens which were submitted to the Departments, Parkside Laboratories for petrological examination.

D.D1:

Samples L.S.D. (1): L.S.D. (2) and L.S.D. (3). The samples are from 76'6", 82'4" and 172'4" respectively (see appendix I).

These samples show progressive intrusion and replacement by dolomite.

L.S.D. (1) (P.190/56) - is composed almost entirely of dolomite. This occurs mainly as fine granular areas with occasional patches of coarser grain-size. Narrow veins of dolomite cut across the earlier formed areas of dolomite. The dolomite has a cloudy appearance due to minute dust-like inclusions. Remnants of the original rock are present in the form of small, irregular grains of quartz and oligoclase. Small flakes of muscovite are scattered through the rock. Occasional small cracks are infilled with muscovite.

L.S.D. (2) (P.191/56) - Dolomite has intruded the rock, partly replacing it. Relict areas represent an altered felspathic sandstone, which had been intruded by narrow quartz veins. Quartz occurs as relatively large grains, showing undulatory extinction and marginal recrystallisation. Microcline-orthoclase has the form of rounded and semi-rounded grains with corroded edges, some containing perthitic structures. Oligoclase, with a composition of $Ab_{88}An_{12}$, occurs as irregular grains, some slightly sericitized. Muscovite is present as occasional long, fine flakes. Zircon and rutile are minor accessories. Pyrite occurs as cubes of varying size.

L.S.D. (3) (P.192/56) - A slightly altered felspathic sandstone, consisting mainly of quartz, microcline and oligoclase. It is relatively fine-grained.

Quartz occurs as small, irregular grains, showing undulatory extinction and recrystallisation on the margins. Secondary silica is present in the interstices of other grains. Microcline-orthoclase also occurs as irregular grains, some containing perthitic structure. Oligoclase has a composition of $Ab_{86}An_{14}$ and is in the form of small irregular grains.

Small flakes of muscovite are scattered sparsely through the rock. Zircon, tourmaline and altered rutile are present in accessory amounts. Faintly pink zircon occurs as small semi-rounded grains. Green tourmaline is noted as subhedral crystals. Small hematite pseudomorphs - possibly after pyrites - are present.

L.S.D. (3) (P.192/56) Dolomite has penetrated the interstitial spaces between the various minerals.

This sample is of finer grain size and more metamorphosed than sample L.S.D. (2), and has not been so extensively replaced by dolomite.

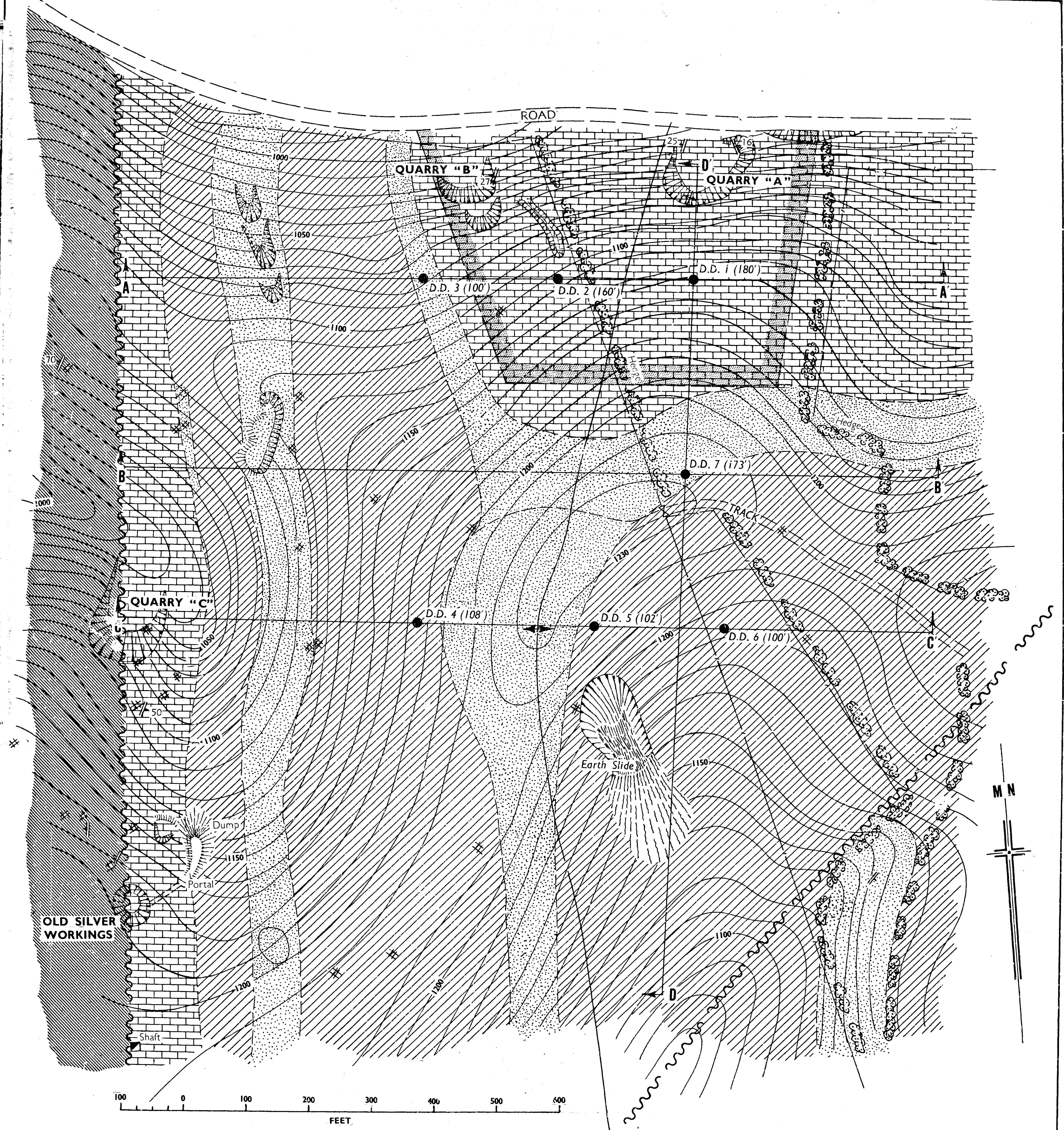
D.D.4:

L.S.D. (4) (P.193/56) - 38'4" - A medium-grained grey coloured altered felspathic sandstone, consisting mainly of quartz and microcline-orthoclase, with subsidiary oligoclase. Quartz occurs as large, interlocking grains, showing undulatory extinction and marginal recrystallisation. Some grains are almost entirely recrystallised. Microcline-orthoclase has the form of large, semi-rounded to irregular crystals. Narrow strings of

perthite are present in the orthoclase. Subsidiary oligoclase is noted as small, irregular crystals; the mineral has a composition of $ab_{33}an_{17}$.

Muscovite is present as fine flakes in the interstices of other minerals. Brown biotite occurs sparsely as small flakes. Small hematite pseudomorphs are scattered through the rock.

Examined by : A.J. Marlow



LEGEND

- | | | | |
|-----------------|--|---|--|
| Dolomite | | Strike and dip of bedding | |
| Shale and chert | | Outcrops | |
| Sandstone | | Diamond drill holes | |
| Phyllite | | Area of dolomite suitable for quarrying | |
| | | Fault | |

