

Rept. Bk. No. 64/28
G.S. No. 3638



MISC

DEPARTMENT OF MINES SOUTH AUSTRALIA

GEOLOGICAL SURVEY
ENGINEERING DIVISION

PROPOSED STANDPIPE - MYPOLONGA
GEOLOGICAL INVESTIGATIONS - PROGRESS REPORT NO. 1
FEASIBILITY STAGE
Section 837, Hd. Mobilong

Client:- Engineering and Water Supply Department

by

R. D. STEEL
ASSISTANT SENIOR GEOLOGIST
ENGINEERING GEOLOGY SECTION

17th February, 1967.

D.M. 143/67

66-25
64/28

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<u>Fig. No.</u>	<u>Title</u>	<u>Plan No.</u>
1	Graphic Geological Log - Test Pit No. 1	S5440

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INTRODUCTION

Investigation of the site for a proposed vertical standpipe at Mypolonga, was requested by Mr. H. L. Beany, Director and Engineer-in-Chief, E. & W. S. Dept. in a letter dated 25th January, 1967, to the Director of Mines.

Mypolonga is situated on the River Murray, approximately 10 miles upstream from Murray Bridge.

GEOLOGY AT THE SITE

The site is at the top of a N - S trending sand dune, parallel to, and approximately $\frac{1}{2}$ mile east of the main River channel. Exploration has been confined to an examination of soil and rock exposures, in a test pit 4 feet deep and also in the face of a nearby roadmetal quarry. Fig. No. 1 is a composite profile of both test pit and quarry exposures.

The test pit shows 3.7ft. of reddish-brown fine grain calcareous dune sand, overlying rubbly calcrete at base. The calcrete is more intensively exposed in the quarry and forms a near continuous horizon at least 10ft. deep. The material is com-

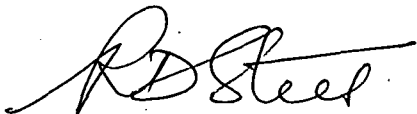
posed mainly of very hard ball calcrete fragments (Average size 0.05 - 0.4ft.= generally strongly cemented to form a solid mass. Local weakly cemented or even friable bands do occur but these are of minor extent and would not significantly affect the quality of the rock mass.

The calcrete is underlain by stiff reddish-brown sandy clay and thence by sandy limestone of the Mannum Formation.

CONCLUSIONS

Foundations for the proposed standpipe should be supported directly on the calcrete horizon, where high bearing capacity and stability should be assured.

15/2/67
RDS:DLH


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LOG OF TEST PIT

SITE
NO. 1

1.

SHEET 1 OF 1

PROJECT TANK SITE (STANDPIPE) REINFORCED CONCRETE

LOCATION MYPOLONGA 1A SEC 837 HD. MOBILONG

LANDFORM Top of N-S trending Sand Dune

RELIEF Slope Gentle Angle 1-2° Direction of fall East

MICRORELIEF Smooth

DRAINAGE External Poor Internal Rapid

VEGETATION Type Grass

FIG. 1

SAMPLE NUMBER	SOIL HORIZON	SOIL TYPE GEOLOGICAL DESCRIPTION	DEPTH (FEET)	GRAPHIC LOG	GROUP SYMBOL	SOIL DESCRIPTION GROUP NAME (Unified Soil Classification, U.S.B.R. Earth Manual 1st Edition 1963)	SOIL STRUCTURE	WATER LEVEL	MOISTURE CONTENT	CONSISTENCY	REL. DENSITY	SOIL TEST PENETROMETER qu (Tons per sq ft)
		Topsoil: Gravel: sand weakly cemented with CaCO ₃ .			SP- GW	SAND, fine grained, poorly graded, grayish-brown. Contains 20-40% GRAVEL Av. 0.05-0.3 ft. occasionally up to 0.5 ft.						
		Generally slightly calcareous.	1		SP	SAND, fine grained, few fines, light brown.						
		Aeolian Sand. Generally slightly calcareous, with few small lime nodules.	2		SP	SAND, fine grained, few fines as binder brown to light brown. Few small gravel fragments.	No significant structure visible.					
			3		SP							
			4		GW	GRAVEL, well graded. Possibly 90% fragments Av. 0.05-0.4 ft but often up to 0.8 ft. size. Contains 5-10% SAND, fine grained, light brown.		No water cut				
		Consists mainly of very hard ball calcrete fragments, generally strongly cemented to form near solid mass. Occasionally weakly cemented with light brown sandy marl.	5									
			6									
			7									
			8									

REMARKS:

CLASSIFICATION	CONSISTENCY	REL. DENSITY	MOISTURE CONTENT	ENGINEERING GEOLOGY SECTION
Great Soil Group	VS — Very Soft	VL — Very Loose	H — Humid	LL — Liquid Limit
Subgroup	S — Soft	L — Loose	D — Damp	PL — Plastic Limit
	F — Firm	C — Compact	M — Mold	N — Near
	St — Stiff	D — Dense	W — Wet	< Less than
REFERENCE	VS — Very Stiff	VD — Very Dense	S — Saturated	> Greater than
Fuller Map Photo	H — Hard			<< Much less than
				PLANT. Dug by... LOGGED R.D.S. TYPE by... DATE 28.6.66 DRAWN R.D.S. START E.W.S. TRACED NAE FINISH Dept. CHECKED B.S.G.
				DRG. No. 55440 H58.