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DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

SOILS GEOLOGY SECTION

REPORT ON SITE INVESTIGATION
SOUTH AUSTRALIAN BREWING COMPANY LTD.
HOTEL SITE - ELIZABETH SOUTH

by

J. B. Firman,
Geologist

8th November, 1961

D.M. 1588/61

RB 53/129

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Rept. Bk. 53/129

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SOUTH AUSTRALIA

REPORT ON SITE INVESTIGATION

SOUTH AUSTRALIAN BREWING COMPANY LTD.

HOTEL SITE - ELIZABETH SOUTH

INTRODUCTION

One bore was put down on the corner of Blake Road and Philip Highway, Elizabeth South, to test foundations below the proposed "Rose & Crown" Hotel.

Sealed tube equipment was used and samples were extruded at the site.

Boring was carried out on the 14th September, 1961. The core was logged by R. D. Steel, Geologist, Soils Geology Section.

STRATA PENETRATED AND FOUNDATION CHARACTERISTICS

Details of lithology and penetration are set out in the appendix and on the attached graphic log. Foundation characteristics are set out on the graphic log.

Sediments intersected in the bore are terrestrial clays of the Smith Creek alluvial fan.

A red-brown earth profile has been developed immediately below ground surface. Limey pockets and nodules occurring as deep as 15 feet below ground surface may indicate remnants of older soil profiles.

The core was logged after drying and structure was not visible. However, experience in the Elizabeth area shows that the red-brown clays are strongly reactive and within the zone of soil moisture variation strong shrink and swell occurs.

A similar soil profile in this area contained strongly reactive clay to about 3 feet and reactive clay down to at least 6 feet. The upper 2 feet in this profile had an unconfined compressive strength greater than 4.5 tons

per square foot (the high reading being due to drying out of the upper part of the profile after winter rains). Damp clay between 3 feet and 5 feet had an unconfined compressive strength of 3 tons per square foot, and the last foot of clay exposed between 5 and 6 feet had an unconfined compressive strength of 4 tons per square foot. The measurements given above were made with a "Soiltest" pocket penetrometer.

The high blows per foot recorded for the surface loam reflect the difficulty of driving through sandy unconsolidated material.

Very silty clays shown on the logs will have a much lower strength when wet than the other clays in the sequence.

Narrow deep beams set down at least 4 feet should be suitable below walls of conventional single storey structures. Footings at this depth would be seated below the most reactive clay. Pad footings set down at about this depth should be adequate for columns carrying roof loads. Piers set down to about 8 feet or piles driven to meet a suitable resistance (or placed by other means above the stronger material below 10 feet) could be considered for larger loads.

GROUNDWATER

Other bores put down in this area show that permanent groundwater occurs about 40 feet below ground surface.

J. B. Firman,
Geologist
SOILS GEOLOGY SECTION

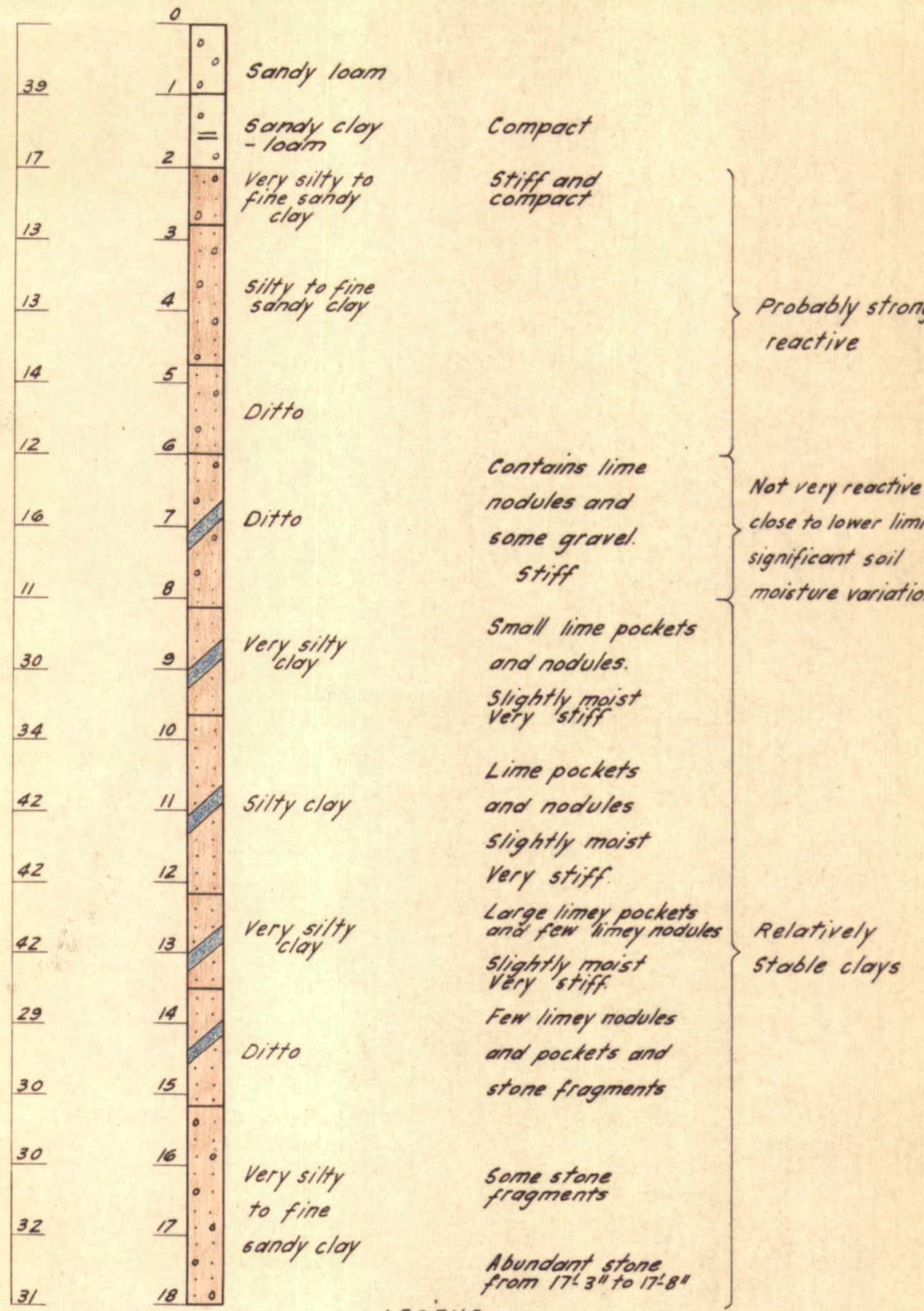
JBF:AGK:CERF
8/11/61

PERCUSSION DRILL LOG NO. 1

PROJECT: S.A. BREWING CO. HOTEL SITE
LOCATION: ELIZABETH SOUTH
PURPOSE: TEST OF SUBSURFACE FOUNDATION CONDITIONS
Plant No: 15 **Driller:** Farrow
Depth: 18' **Bore Logged:**
Date Commenced: 14/9/61 **Date Completed:** 14/9/61
D.M. 1588/61

Depth	Description	Depth	Type of Sample	No. of Blows
0'0" - 1'0"	Brownish friable sandy loam, with few stoney fragments.	0' - 1'	Open tube	39
1'0" - 2'0"	Brownish fine sandy clay loam, with few grit and stone fragments. Compact and slightly friable.	1' - 2'	"	17
2'0" - 2'10"	Brownish very silty to finely sandy clay, with few disseminated lime patches and occasional small hard nodules. Stiff and very compact.	2' - 3'	"	13
2'10" - 4'9"	Brownish to dark brown silty to finely sandy clay. Offwhite and limey in irregular patches, with semi cemented rubble and hard nodules. Generally fairly stiff.	3' - 4' 4' - 5'	" "	13 14
4'9" - 6'0"	Dark brown to brownish silty to finely sandy clay. Numerous hard irregular medium to coarse travertine nodules.	5' - 6'	"	12
6'0" - 8'2"	Brownish to slight greyish-brown and orange-brown mottled, very silty to finely sandy clay. Numerous dark organic blebs, few lime nodules and gravel fragments. Generally stiff and compact, but slightly friable in part.	6' - 7' 7' - 8'	" "	16 11
8'2" - 9'8"	Reddish-brown very silty clay. Very stiff slightly moist. Few dark iron oxide blebs, small lime pockets and nodules.	8' - 9'	"	30
9'8" - 12'2"	Brownish to reddish-brown silty clay. Very stiff, slightly moist. Limey in pockets, with numerous hard travertine nodules. Few iron oxide pockets.	9'-10' 10'-11' 11'-12'	" " "	34 42 42
12'2" - 13'6"	Brownish to reddish-brown silty to very silty clay. Very stiff, slightly moist. Light brown and somewhat limey in large irregular pockets. Few travertine nodules etc.	12'-13' 13'-14'	" "	42 29
13'6" - 15'2"	Brownish to reddish-brown and light grey mottled, very silty clay. Very stiff, slightly moist. Few small iron oxide blebs, lime pockets and nodules, and stone fragments.	14'-15'	"	30
15'2" - 18'0"	Brownish to reddish-brown very silty to finely sandy clay. Very stiff, slightly moist. Few iron oxide blebs. Occasional quartzite and sandstone fragments. Abundant stone from 17'3"-17'8".	15'-16' 16'-17' 17'-18'	" " "	30 32 31

END OF HOLE 18'



LEGEND

Dominant Texture

Clay

Loam

Other Materials Present

Silt

Sand

Clay

Lime and Limey Nodules

accompany report by J.B. Firman

S.A. DEPARTMENT OF MINES

roved	Passed	Drn. J.B.F.	S.A. BREWING Co. HOTEL SITE - ELIZABETH GRAPHIC LOG	D.M.	Scale 2 feet to 1 inch
		Tcd. A.W.		Req.	S2932
		Ckd. R.R.			No. 2
ector		Exd.			Date 10-11-61

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