Section

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

SOILS GEOLOGY SECTION

REPORT ON SITE INVESTIGATION
S.A. CO-OP. BULK HANDLING LTD. SITE
RAILWAY YARDS - STRATHALBYN

by

J. B. Firman
Geologist

18th December, 1962

D.M. 1229/62

RB 55/134

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INTRODUCTION

One bore was put down to test foundation conditions about 60 feet from the eastern alignment of Laucke's new flour mill and adjacent to the main railway at Strathalbyn. The site is in County Hindmarsh, Hundred of Strathalbyn, and the town is shown in the north-east quadrant of the Milang 1-Mile sheet (830 in Zone 6 of the Australian National Grid).

Sealed tube samples were taken at about 5 and 10 feet (See geological log).

Plans showing locality and geology, and a graphic bore log showing rate of penetration, are set out on the attached plate. A bore log showing lithology and drilling penetration rate is given in Appendix 1. Comments of foundation conditions by the Strathalbyn Town Clerk are included in Appendix 2.

STRATA PENETRATED AND FOUNDATION CHARACTERISTICS

The bore passed through low-angle slope deposits into weathered bedrock of the Kanmantoo Group at a depth of about 9 to 11 feet.

Low-Angle Slope Deposits

The low-angle slope deposits are sands and clays. At the base of the sequence is a light olive brown sandy clay, the upper feet of which is probably re-worked schist of the Kanmantoo Group.

The clay between 2 and 3 feet shows evidence of shrink and swell with seasonal moisture variation. The thin layering indicates that variations in the layered arrangement of materials can be expected elsewhere on the site. Penetration figures

ranging from 10 to 22 blows/foot show that the sequence is not particularly strong.

WEATHERED BEDROCK OF THE KANMANTOO GROUP

Weathered bedrock occurs below about 11 feet. Three beds have been intersected: an upper bed of schist about 7 feet thick which was probably a fluvioglacial sediment originally, and is now strongly weathered in places; a middle bed of weakly cemented sandstone about 11 feet thick; a lower bed of hard fine-grained schist much less weathered than the upper bed.

The upper bed of schist is moderately strong, but stress can be easily relieved by movement along mica flakes in the plane of schistosity. The degree of weathering is also very variable in this bed.

The middle bed of weakly cemented sandstone should be stronger than the overlying schist.

The lower bed of schist is relatively little weathered and is quite strong.

GROUNDWATER

Water was struck at 38 feet and static water level is at 21 feet. The rocks of the Kanmantoo Group are poor aquifers and a report by Bleys, 1960, shows that salinity is not likely to be below 300 grains per gallon and that the yield would be low. A bore 15 chains north of Middle Creek yielded two thousand gallons per hour.

J. B. Firman
Officer-in-Charge
SOILS GEOLOGY SECTION

JBF:AGK
18/12/62

REFERENCES

BLEYS, C., 1960. - Report on Groundwater Prospects, Part Sections 2627/8 and Section 2619 (Lot 16), Hundred of Macclesfield.

APPENDIX 1

BORE LOG - STRATHALBYN SILO SITE

6627- 1128

PERCUSSION TEST BORE NO. 1

Location: Strathalbyn **Docket:** 1229/62

Hundred: Strathalbyn **Section:** 2604

Purpose: Foundation Testing **Miner:** S.A.B.H.

Plant: No. 15 **Driller:** A. Sturak

Total Depth: 58 ft. 6 ins. 17-83

Date Commenced: 21.9.62 **Date Completed:** 25.9.62

Logged by: J.B. Firman

Depth From	Depth To	Description	Penetration Depth From	Penetration Depth To	Blows p/ft.
0	1'	Light brown fine sand	0	1'	13
1'	2'	Light red-brown clayey fine sand.	1'	2'	10
2'	3'	Light yellowish brown fine sandy clay with patches of lime. Granular structure and poorly developed prismatic structure.	2'	3'	20
3'	4'	Light yellowish brown somewhat clayey fine sand.	3'	4'	21
4'	5'3"	Sealed Tube	4'	5'3"	12
5'3"	7'3"	Light reddish brown somewhat clayey fine sand	5'3" 6'3"	6'3" 7'3"	11 12
7'3"	9'3"	Light brown coarse poorly sorted sand, becoming greyish brown with fine gravel, at base. (Sealed Tube from 9'3" to 10'6") 2.82	7'3" 8'3"	8'3" 9'3"	22 19
9'3"	11'6"	Light olive brown micaceous sandy clay with abundant rounded, but angular, gravel and pebble sized particles. Originally a fluvi-glacial now a deeply weathered schist.	9'3" 10'6"	10'6" 11'6"	22 28
11'6"	19'0"	Quartz-mica schist. Originally a clayey sandstone. Now strongly weathered in places. Slightly damp from 16'9" to 18'9". Becoming harder in the last foot	11'6" 12'6" 13'6" 14'6" 15'9" 16'9" 17'9"	12'6" 13'6" 14'6" 15'9" 16'9" 17'9" 18'9"	66 70 61 48 35 34 64
19'0"	28'0"	Light yellowish brown fine sand. Moist. (Boring using Chisel bit and water).	No penetration data. Hard drilling using Chisel bit.		
28'0"	32'0"	Ditto, very wet			
32'0"	58'0"	Hard light grey fine-grained schist with coarse-grained mica and quartz.			

END OF BORE AT 58'6".

17-83

APPENDIX 2

COMMENT ON FOUNDATION CONDITIONS BY THE STRATHALBYN TOWN CLERK

CORPORATION OF THE TOWN OF STRATHALBYN

Town Council Office,
Commercial Road,
Strathalbyn

5th July, 1962.

Mr. P.T. Sanders,
General Manager,
S.A. Co-op. Bulk Handling Co. Ltd.,
Victoria Sq.,
ADELAIDE, S.A.

Dear Sir,

Following your recent visit to Strathalbyn I have been approached by Messrs. H.L. & Condor Laucke, regarding the foundation conditions likely to be found on their mill property on Callington Road, Strathalbyn.

I have a property immediately opposite this new flour mill, and am conversant with the rock conditions found near. In the block next to mine, that is directly opposite the mill office, my father had a well dug in 1913. Solid bluestone rock was found 12 feet from the surface, and was still in evidence when the digging was abandoned at 34 feet. Every inch had to be blasted out with gelignite, and, as the flow of water did not rise above about four feet six inches, the digging was stopped at 34 feet. This well was filled in when we had the town-water supply opened in 1938.

When the Engineering & Water Supply Dept. built their big overhead storage just north of the Laucke property, the foundations went to about 24 feet deep. In the property on which the proposed bulk storage would be built there is an old well, which will give you a very good idea of the rock strata, and its depth. I am of the opinion that an excellent rock foundation will be found at no great depth.

Hoping this information will be of some assistance to you,

Yours faithfully,

(SGD.) Harold J. Stowe
TOWN CLERK