DEPARTMENT OF MINES
SOUTH AUSTRALIA

SUPPLEMENTARY REPORT ON SITE INVESTIGATION

PROPOSED T.V. STUDIO

COLLINSWOOD

HD. YATALA, SECTION 474

by

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Geologist

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Rept. Bk. No. 48/107
G.S. No. 1330
D.M. 2111/58

29th April, 1959.

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I. SUMMARY

From a previous investigation on this site it was recommended that a second 50' deep percussion hole be put down to obtain sealed tube samples for laboratory determinations. This hole was approved by the Department of Works, and was subsequently drilled, sealed tube samples being taken at selected intervals. The soil profile obtained from Percussion Hole No. 2 is essentially the same as that in Percussion Hole No. 1, with the exception of a slight variation in the upper 9'. A detailed log of Percussion Hole No. 2 is included as an appendix to this report.

II. GENERAL

In a previous investigation at this site it was decided that the information obtained from a 47'6" deep percussion hole was insufficient to assess foundation conditions. It was recommended that a 50 feet deep percussion hole be drilled, and that sealed tube samples be taken at selected intervals, (Rept. Book No. 48/16). The sealed tube samples were to enable laboratory determinations to be carried out on the material, so that the physical characteristics, e.g. shear strength, moisture content etc., could be measured. A knowledge of these was deemed essential before the stability of the "Franki Pile" type of foundation could be assessed.

This hole was approved by the Department of Works, and Percussion Hole No. 2 was put down to a depth of 50 feet. It was situated approximately 8 feet away from the position of Percussion Hole No. 1, so that a close correlation could be obtained. Sealed tube samples were taken at the following depths,

8'-9'4"; 9'4"-10'8"; 18'-19'4"; 19'4"-20'8"; 28'-29'4";
29'4"-30'8"; 38'-39'6"; 39'6"-41'; 47'-48'6"; 48'6"-50'.

The sealed tube samples were forwarded to the C.S.I.R.O. Soils Laboratory, Thebarton, as this office is not equipped to carry out such laboratory testing.

III. SOIL PROFILES

The soil profile exposed by the second percussion hole is essentially similar to that obtained from Percussion Hole No. 1, although slight variations are to be expected in material of this nature, even over such a short distance.

The main difference in the profile exposed by Percussion Hole No. 2 was in the upper layers. Unfortunately the second percussion hole was located on an old rubbish pit, and the soil profile from the surface to a depth of 5 feet cannot be regarded as natural. There is also some slight difference in the calcareous material present down to a depth of 9 feet, but this is often the case in this soil type, as there is generally some lateral variation in the calcareous zone.

Below 9 feet the soil profiles obtained from the two percussion holes were essentially similar, although there was some slight difference in the composition of the material. The physical properties however are similar in both soil profiles, especially at the depths which will effect the stability of the "Franki Pile".

A lower number of blows per foot was recorded for Percussion Hole No. 2, but this was due to the different sampling technique which was adopted. In Percussion Hole No. 1 a bell-mouthed tube was used to obtain the samples, but in Percussion Hole No. 2 the sealed tube attachment was used throughout, and the cores were extruded and boxed for logging when sealed tube samples were not required. The sealed tube attachment obtains a core of the material in the undisturbed state, the cutting shoe diameter being slightly smaller than that of the attached tube. The bell-mouthed tube however has a cutting edge which has a larger diameter than the tube, and hence the sample is deformed when passing up the tube. A greater force is therefore required to drive the bell-mouthed tube because of the tendency of the material to pack up

inside the tube. The number of blows per foot is therefore greater when using a bell-mouthed tube than when the sealed tube attachment is used in similar material.

A detailed log of Percussion Hole No. 2 is included as an appendix to this report.

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PGM:AGK
29/4/59

APPENDIX

COLLINSWOOD PERCUSSION BORE NO. 2

Bore Serial No.: P.D. 757/59 **Location:** Collinswood T.V. Studio

Hundred: Yatala **Section:** 474

Purpose: Foundation testing for proposed T.V. Mast **Docket:** No. D.M. 2111/58

Plant: Ruston No. 4 **Driller:** J. Baker

Date commenced: 26/3/59 **Date completed:** 1/4/59

Depth: 50 feet **Diam.:** 4 in.

Logged by: P.G. Miller

Depth From	Depth To	Description	Penetration From	Penetration To	Penetration No. of Blows
0	2'	Fill material composed of a sandy clay loam with heterogeneous rubbish fragments.	0	5'	Not recorded
2'	5'	Earthy compact travertine with pockets of reddish-brown sandy clay and some rubbish fragments. Probably old rubbish dump.			
5'	6'	Light grey-brown and light greenish grey limey clay with occasional pockets of earthy lime. Soft, moist	5'	6'	18
6'	8'	Grey-brown and greenish-grey limey clay with occasional pockets of earthy lime. Soft, moist.	6' 7'	7' 8'	11 11
8'	9'4"	Sealed tube sample: As above	8'	9'4"	17
9'4"	10'8"	Sealed tube sample: As above	9'4"	10'8"	19
10'8"	16'	Light greenish-grey clay with some reddish-brown, maroon and yellow-brown mottling. Firm, moist.	10'8" 12' 13' 14' 15'	12' 13' 14' 15' 16'	17 11 15 12 12
16'	18'	As above but becoming slightly sandy	16' 17'	17' 18'	12 15
18'	19'4"	Sealed tube sample: As above	18'	19'4"	17
19'4"	20'8"	Sealed tube sample: As above	19'4"	20'8"	52(?)
20'8"	22'	Light greenish grey clay with some reddish-brown, maroon and yellow-brown mottling. Firm, moist.	20'8"	22'	33
22'	28'	Light greenish-grey and maroon mottled slightly silty and sandy clay with some patches of ironstaining. Subgranular, stiff and moist to damp.	22' 23' 24' 25' 26' 27'	23' 24' 25' 26' 27' 28'	28 25 30 25 28 30
28'	29'4"	Sealed tube sample: As above	28'	29'4"	33

Depth From	Depth To	Description	Penetration From	Penetration To	No. of Blows
29'4"	30'8"	Sealed tube sample: As above	29'4"	30'8"	35
30'8"	34'	Greenish grey and maroon mottled silty clay with some yellow-brown mottling. Strongly ironstained in patches. Stiff and damp.	30'8"	32'	38
			32'	33'	36
			33'	34'	25
34'	38'	Greenish-grey reddish-brown and yellow brown mottled very silty clay, with some sandy patches and some iron-staining. Sub-granular, stiff and damp.	34'	35'	26
			35'	36'	26
			36'	37'	26
			37'	38'	21
38'	39'6"	Sealed tube sample: As above	38'	39'6"	40
39'6"	41'	Sealed tube samp le: As above	39'6"	41'	40
41'	45'	Pale grey, yellow-brown, and reddish-brown mottled silty and sandy clay to clayey silt with occasional pockets of grey clay. Compact to sub-granular, very stiff and slightly damp.	41'	42'	41
			42'	43'	20
			43'	44'	28
			44'	45'	28
45'	47'	Light grey, yellow-brown and reddish-brown mottled finely sandy and clayey silt. Sub granular. Stiff and slightly damp.	45'	46'	20
			46'	47'	22
			47'	48'6"	40
47'	48'6"	Sealed tube sample: As above			
48'6"	50'	Sealed tube sample: As above	48'6"	50'	42

End of Hole.