TR11_120_123

22. SECOND REPORT ON PROPOSED FACTORY SITE, DELORAINE

by M. J. Longman

Following initial investigation of the proposed factory site on Mr J. S. Berry's property by Geologist W. L. Matthews more detailed investigation was undertaken using a resistivity meter to determine the thickness of material overlying the dolerite basement.

Four depth probes using Schlumberger configuration indicated reasonably uniform conditions under the factory site to a depth of 100 feet, with a top layer of resistivity 90-135 ohm-metres, a second layer of resistivity 10-15 ohm-metres and a third layer 50-60 feet below the surface of high resistivity (fig. 40).

Dolerite was assumed to be the third layer and a drill site was selected in the NE corner of the site as access was easy and water convenient in this position. Drilling was commenced using a Failing W.W.I. rotary drill with a 8¾ inch diameter bit. Decomposed basalt was encountered at 35 feet and solid basalt at 65 feet.

As the basalt occurs well below present river level it was decided to continue drilling in an attempt to find sub-basaltic gravel in the Tertiary river valley.

Dominantly hard basalt and minor clay were drilled through to 230 feet, then weathered dolerite or dolerite was met. Drilling continued to 265 feet which was in solid dolerite.

The hole was logged using a Widco Well Logger and self-potential; resistivity and gamma ray curves were obtained (fig. 41) which indicated clay below the basalt underlain by weathered dolerite with little prospect of obtaining water.

Sections of the hole were tested for water and the water-bearing zone was found to be confined to the weathered zone above the basalt with no water obtained from the underlying material.

Slotted casing was installed between 20 feet and 50 feet and gravel packed. The hole was tested and found to yield 1200 gallons/hour on a 100 minute test with a drawdown of 36 feet.

The bore was surged using a solid surge block for a few hours and the yield again determined. Finally the hole was again surged for one day and the yield again determined. These results are summarized in the table.

Finally the bore, which was capable of yielding 1750 gallons/hour with a 40 feet drawdown and a salt content of 140 p.p.m., was abandoned as the factory site option expired and the property owner no longer required the water.

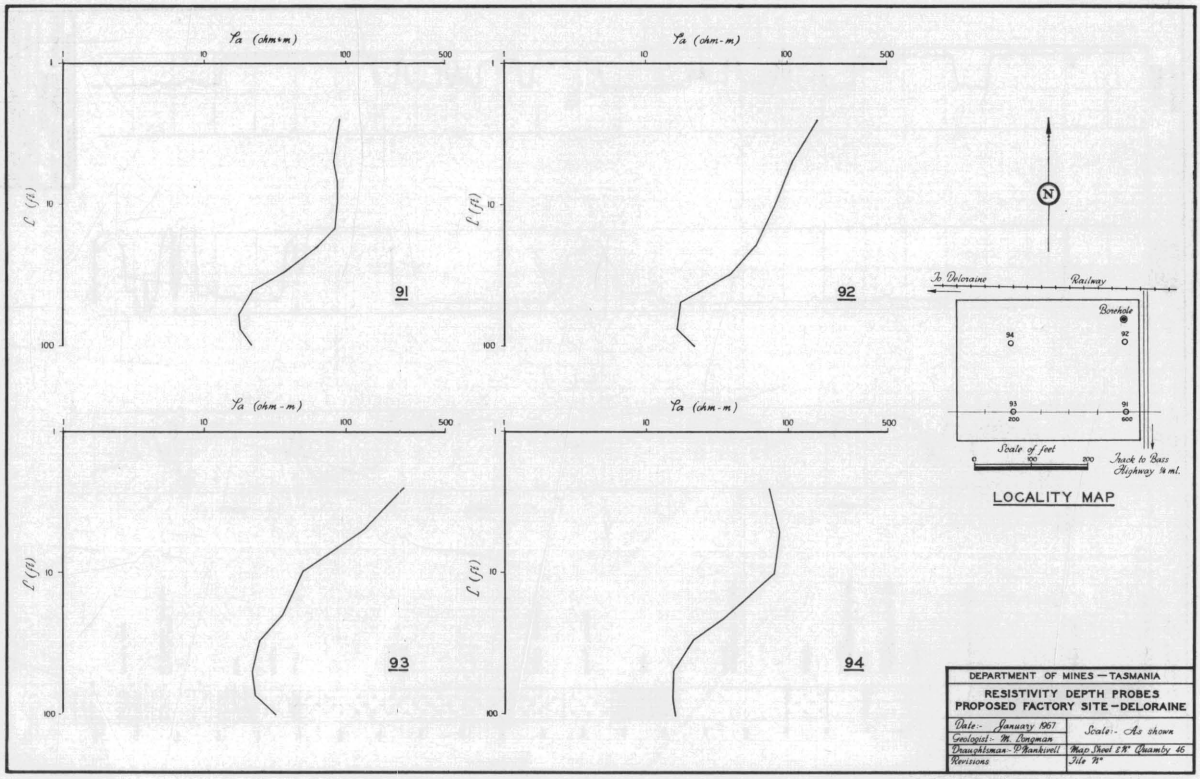


FIGURE 40

5 cm

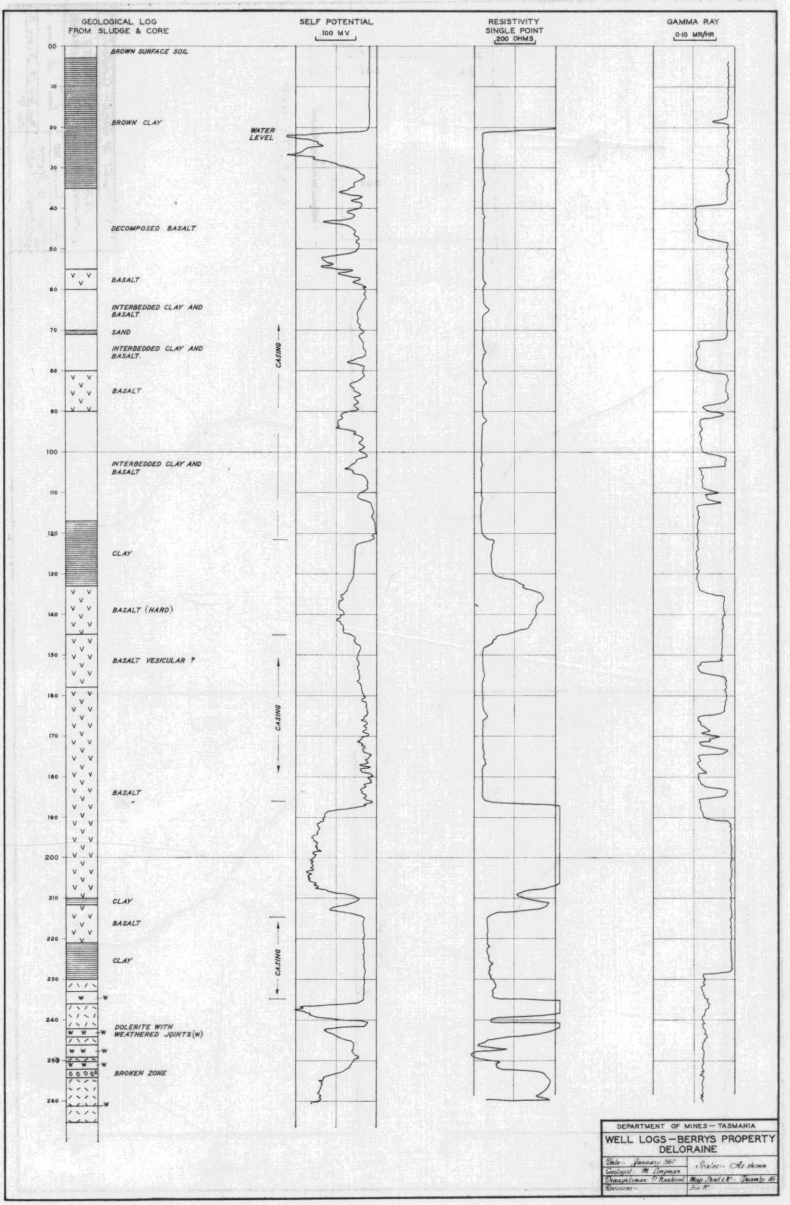
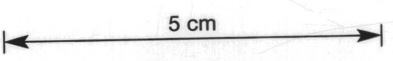

GEOLOGICAL LOG FROM SLUDGE & CORE
SELF POTENTIAL 100 MV
RESISTIVITY SINGLE POINT 200 OHMS
GAMMA RAY 0-10 MR/HR
BROWN SURFACE SOIL
BROWN CLAY
WATER LEVEL
DECOMPOSED BASALT
BASALT
INTERBEDDED CLAY AND BASALT
SAND
INTERBEDDED CLAY AND BASALT
BASALT
INTERBEDDED CLAY AND BASALT
CLAY
BASALT (HARD)
BASALT VESICULAR ?
BASALT
CLAY
BASALT
CLAY
DOLERITE WITH WEATHERED JOINTS(W)
BROKEN ZONE
CASING
CASING
CASING
DEPARTMENT OF MINES — TASMANIA
WELL LOGS — BERRYS PROPERTY DELORAINE

FIGURE 41


5 cm

SUMMARY OF RESULTS OF PUMP TESTS, Mr J. BERRY'S PROPERTY, DELORAINE

Time in mins	Before Development		Initial Development			Final Development		
	Drawdown in feet		*Drawdown in feet*			*Drawdown in feet*		
	@ 1200 *gal/hour*	@ 1700 *gal/hour*	@ 1200 *gal/hour*	@ 1500 *gal/hour*	@ 2000 *gal/hour*	@ 1750 *gal/hour*	@ 2000 *gal/hour*	@ 2800 *gal/hour*
5	13.25	14.75	11.25	12.25	....	15.50	15.50	20.00
10	16.25	22.75	13.00	16.25	....	18.75	23.25	35.00
25	31.25	47.25	....	25.00	....	29.00	46.25	....
50	34.25	....	....	30.00	....	36.25	....	....
75	35.50	....	....	31.25	....	38.00	....	....
100	36.25	....	....	31.75	....	37.75	....	....
125	....	....	....	....	42.75	38.00	....	....
150	....	....	....	....	44.50	37.00	....	....
200	....	....	....	....	....	38.25	....	....
Comments—	100 min test	Dry @ 30 mins	Pump cut out	100 min test	Multiple stage test 1500/ 2000 gal/ hour		Dry @ 30 mins	Dry @ 12 mins