

TR6-63-64

WATER STORAGE AREA FOR HUON MUNICIPAL WATER SUPPLY

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A concrete tank designed to hold half a million gallons of water is being erected on the foothills, just west of Ranelagh.

At the time of the first geological examination, the site had been excavated and boxing prepared for the pouring of the first concrete. It was recommended that certain test holes be dug and further visits were paid to inspect these.

The site selected is on a small platform, one of several along the edge of the hills, and is portion of the toe of an old slip surface. The rocks forming these hills are part of the Permian sequence and consist of the Woodbridge Group overlain conformably by the Ferntree Group. The Woodbridge consists of fine sandstone containing some pebbles while the Ferntree rocks are typical silt-

stone. However, just above the Woodbridge Group, forming the base of the Ferntree Group, are beds of coarse sandstone, 20-50 feet in thickness, called the Risdon Sandstone. This sandstone outcrops fairly boldly on a small hill behind the site. A good face of Ferntree siltstone, on the edge of a fault zone, can be seen in a quarry further to the north and slightly higher in elevation.

Faulting is common in this area. A major fault along the valley of the Huon River separates Triassic rocks in the south from Permian near the reservoir site. These Permian rocks are further disturbed by a series of faults along the main fault margin. In the face of the quarry a fault zone is apparent, running parallel to the face, and between the quarry and the hill behind the tank site is another fault. It is also possible that a fault runs parallel to the main fault on the front face of this hill, that is, in the vicinity of the swamp behind the reservoir.

It is not certain whether the slip has been aggravated in the past by faulting or is simply due to the differential weathering properties of the Risdon Sandstone and the other rocks. Large boulders of Risdon Sandstone have rolled down the hill and formed a kind of dam wall behind which have collected fragments of finer grained rocks set in a matrix of clay. The large boulders underlie about the outer third of the tank and consist of angular blocks of coarse sandstone usually varying between one and three feet in size with sometimes fine sand and sometimes voids between. The material underlying the inner two thirds of the tank is much more compact and consists of smaller pieces of very weathered siltstone set in a matrix of sandy clay and having no voids.

The danger to structures on slip surfaces may be due to two factors:—

- (1) The alteration of weight of loading including the position on the slip surface of this alteration; and
- (2) Excessive water.

In this instance the load has not been increased as much as is at first apparent as quite a lot of surface material has been taken off. The position of increase near the toe of the slip is not as disturbing a factor as it would be near the top and indeed in some instances an increase near the toe aids stability.

Excess water soaking into the clay round and under the tank may cause sufficient lubrication to initiate movement so great care should be taken to construct adequate drains to carry away any surface water falling on the front of the hill behind the tank.