

TR7-55-57

13. REPORT ON CLAY IN THE WYNYARD DISTRICT

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INTRODUCTION

This report concerns the description of the clay deposits of the Wynyard district, as a preliminary step towards re-establishing a brickworks. Special reference is made to the clay deposits covered by the options to purchase of Mr. J. Walker, Quiggins Road, Wynyard.

A brick works was in operation intermittently for about 20 years but was closed down about 1930, not through the lack of clay reserves. The old brick pit is located 1 mile SW of Wynyard township on the south side of Deep Creek Road, half a mile west of the Wynyard Aerodrome runway. The brick pit is alleged to be 20 feet deep but is now full of water.

The clay deposit of Deep Creek Road (Figure 16) extends in a narrow strip for 1 mile in a SE direction from the old brick pit.

ORIGIN OF THE CLAY

It is residual, partly transported clay derived from Permian pebbly mudstone and claystone, and is situated in the angle between the line of cliffs of Permian conglomerate, and the flat Quaternary surface.

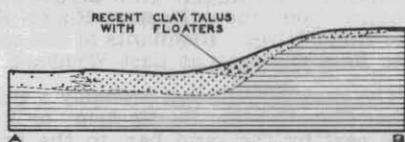
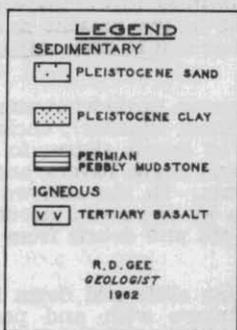
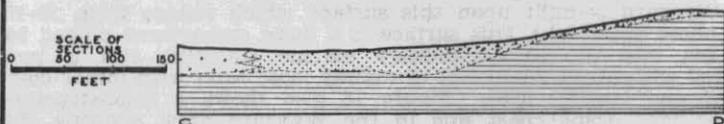
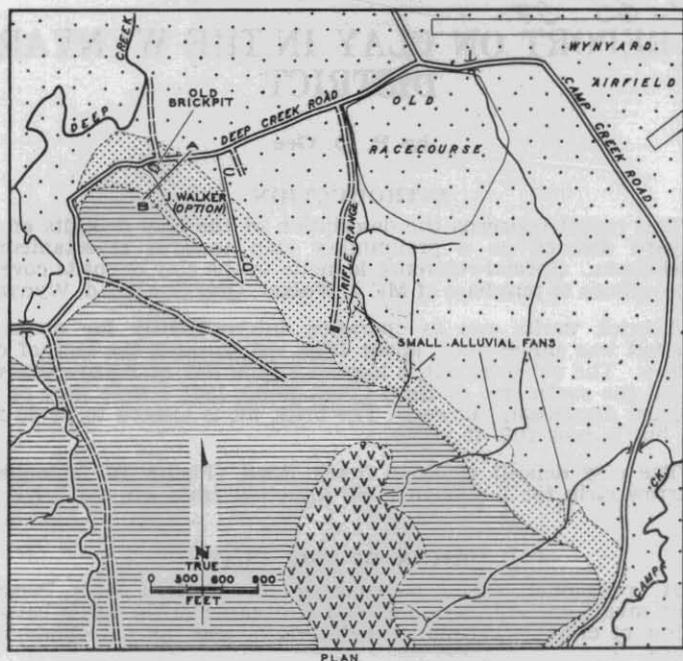
Wynyard is built upon this surface which ranges from 30-70 feet above sea level. This surface is a large embayment etched by the sea into the softer Tertiary marine siltstone, and is now covered with about 20-30 feet of mainly loose sand with minor clay, gravel and boulder beds. Figure 16 also shows a reconstruction of the Pleistocene coast line in the Wynyard area, showing the embayment. A sand bar grew across the mouth of this embayment, extending from about Doctors Rocks almost to the present mouth of the Inglis River. Remnants of the sand bar can be seen adjacent to the Bass Highway at East Wynyard.

The environment was probably a tidal lagoon (somewhat similar to Pipe Clay Lagoon, South Arm; or East Inlet, Stanley), enclosed to the east by the sand bar, to the north by basalt slopes, to the west by the alluvial flats of the Flowerdale and Inglis Rivers, and to the south by low cliffs of Permian sediments. In the still waters of the lagoon, the fine waste brought down by the rivers accumulated, together with sand washed in by the sea and debris from the bordering hill slopes.

Clay and scree derived from the Permian cliffs slid down into the fringe of the lagoon where it interfingers with and passes laterally into the lagoonal sand sediments within a short distance.

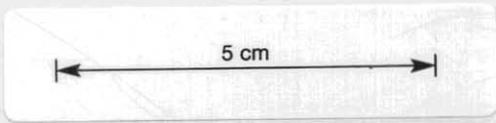
All along the southern border, a shoestring deposit of clay is found, except where it is cut by creeks. However, the clay seems to be more plentiful and richer where the cliffs are higher. This is the situation at Deep Creek Road.

CLAY DEPOSIT — DEEP CREEK ROAD WYNYARD



RECONSTRUCTION — PLEISTOCENE TIDAL LAGOON

FIGURE 16.



Clay is also found in a similar position immediately south of the aerodrome, half a mile up the Mt Hicks Road, and in the vicinity of Seabrook Creek. However, these deposits are of a more sandy type. Two miles up Camp Creek Road from the aerodrome, exposed in road cuttings are greenish Permian varved mudstones which contain up to 75% clay mineral. From the reserves point of view this would be excellent for establishing a brickworks. Problems of brick manufacture from bedrock may be encountered. On top of the bedrock is 5-15 feet of clay weathering material which seems to have a substantial lateral extent.

CLAY AT DEEP CREEK ROAD

In the segment between Deep Creek Road and Camp Creek Road is a strip of clay one mile long and 400 feet wide. On top of this is a thin recent talus wedge composed of clay with about 40% floaters of decayed bedrock and quartzite boulders from the conglomerate.

Five acres of clay in the immediate vicinity of the old brick pit, covered by the option of Mr. J. Walker, have been examined by probing with a post hole digger with an extended handle. Fine yellow-brown plastic clay has been proved to a depth of at least 10 feet in eight holes. It is reported by the local residents that the same plastic clay is found in the bottom of the brick-pit, suggesting a depth of at least 20 feet. This is to be expected in view of the previously outlined origin of the clay. Profiles AB and CD (Figure 16) show the suggested position of the clay.

ESTIMATES OF RESERVES, LIFE AND CAPACITY OF A BRICKWORKS

An economical and paying brickworks should be able to produce 4 million bricks per year (15,000 per day, 5 days a week) for about 20 years.

Proven reserves (west of the line CD, Figure 16) amount to 55,000 yards or 86,500 tons (specific gravity of wet clay 130 lb./cu. ft.) assuming the clay is only 10 feet deep. On the basis that 1,000 bricks requires 4 tons of clay, then there is at least 5½ years' work. If the clay has a depth of 20 feet, as seems probable, then there is 11 years' work. If the clay persists in the same manner as far as the rifle range (Figure 16), there is 270,000 yards in reserve, and the life increases to 30 years.

A more liberal estimate of 90 years' work is obtained assuming the clay continues to Camp Creek Road. Superficially, this appears to be so.

CONCLUSIONS AND RECOMMENDATIONS

At present there seems enough clay for a brickworks producing 4 million bricks a year to operate for at least 10 years, with every possibility that it may be ten times this life.

There is enough clay present at Deep Creek Road to warrant more intensive boring and systematic sampling in order to prove the suitability of the deposit. A line of 5 bores to a depth of 20 feet between the old brick pit and the targets of the rifle range, together with a few bores further to the east, may confirm the most optimistic estimate of reserves.

Other clay deposits in the area do exist, but if further boring confirms what is suspected, these would not have to be called upon.

The clay is mostly a homogeneous yellow-brown colour, but pale blue bands occur. Facilities exist for making bricks of different shades.