

1983/54. Sand and gravel resources on Lease/Licence areas at Bellamy Road near Forth.

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Abstract

Investigation of sand/gravel resources near Forth showed that reserves are very limited, with one narrow zone probably containing a workable quantity.

INTRODUCTION

An investigation was made for the Devonport City Council over two properties adjacent to Bellamy Road in the vicinity of Forth:

Property (see fig. 1)	Lease/Licence Number	Area (ha)	AMG reference of NW corner	
			mE	mN
1	M.L. 46M/76 (Dept. of Mines)	15	440 300	5 437 100
2	P.F. 2930 (Lands Dept.)	10	440 800	5 436 800

Marking out notices for Department of Mines Stone Leases had been placed on the north-west corner of both properties by J.M. Clune in July 1982. The properties share a common north-south boundary. Property 1 can be accessed directly from Bellamy Road on the property's western boundary. Property 2 is bounded by the Don River on the eastern boundary.

A front-end loader and operator were made available by the Devonport City Council for test pitting. The logs of the holes are given in Table 1.

GEOLOGY

The principal rock type of the area is an interbedded sequence of quartzite and schist of Precambrian age which crops out on an interfluvial ridge between Don River and Bella Macargee Creek.

The disused pits on Property 1 and the working pits to the north are situated on this ridge and the gravel is formed by the leaching out of the more easily weathered fraction (schist) leaving a lag deposit of sand and quartzite fragments. Workable thicknesses of this material only occur where there is a sufficient depth of weathering or where the lag has accumulated on the flanks of the hills.

The disused pits on Property 1 are, for practical purposes, worked out and undisturbed bedrock is exposed in several places in these pits. Generally the worked areas were less than one metre deep and frequently less than 0.5 m.

Test Pit 14 exposed 900 mm of sand which is probably a local accumulation of hill wash sand into a depression in the bedrock. Other such areas may occur but most of the remainder of Property 1 consists of a red soil cover over weathered schist.

The predominant rock type on Property 2 is Moina Sandstone of Ordovician age. The contact between the two rock types was exposed in

2/A

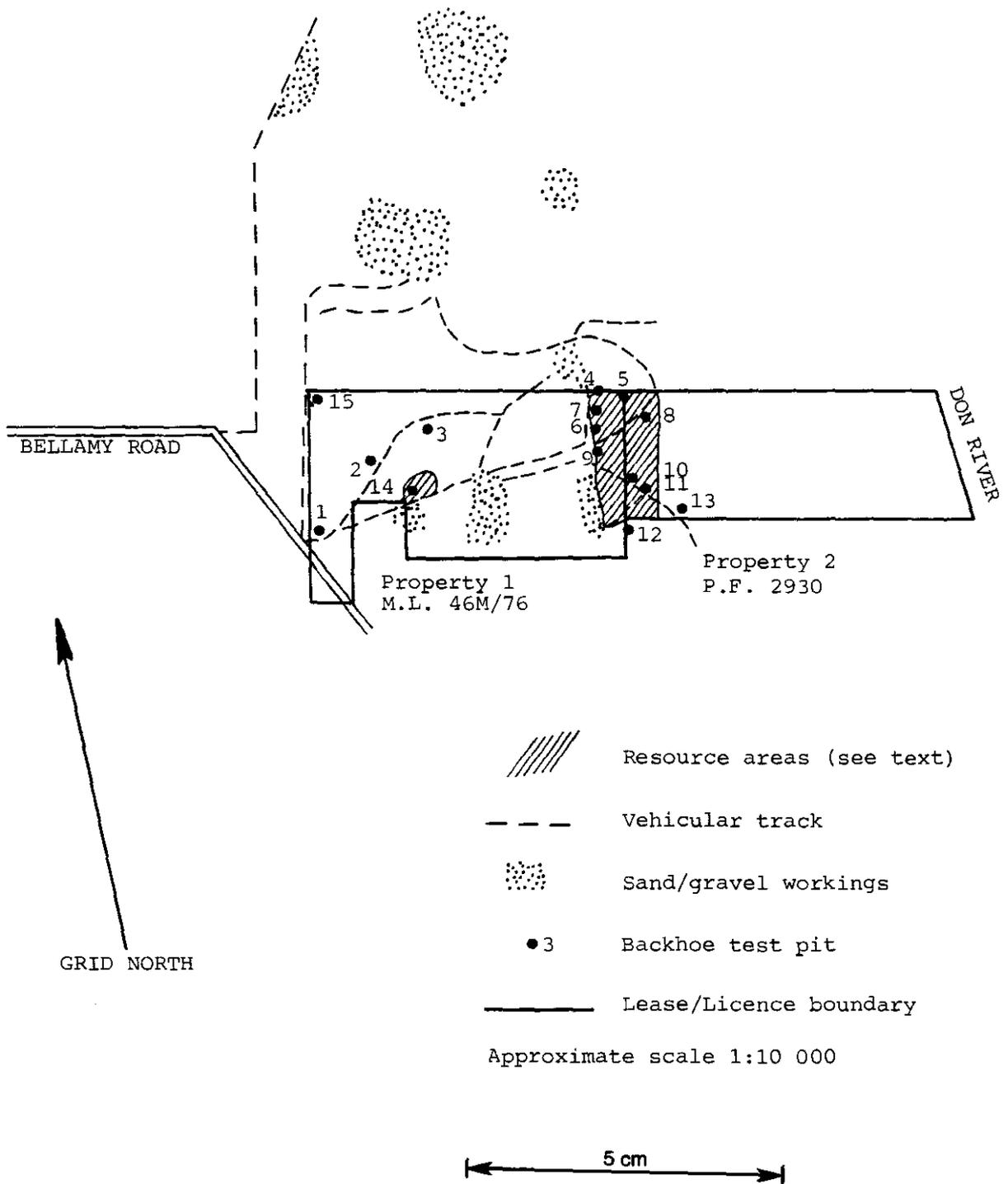


Figure 1. Sand/gravel resources in Lease/Licence areas adjacent to Bellamy Road

Test Pit 7.

Most of Property 2 has slopes of 1 in 4 to the east towards the Don River and has only a very thin mantle of weathered sandstone over bedrock.

The steepness and lack of access made it impractical to carry out test pitting but a surface examination suggests that it is both environmentally undesirable and economically impractical to work these slopes for sand or gravel.

SAND/GRAVEL RESERVE

A narrow zone measuring about 100 m by 200 m and 0.5-0.75 m deep (indicated on Figure 1) may contain a workable quantity of sand/gravel. This zone is situated on the upper western slope of the hill and care must be exercised to prevent erosion if a sand/gravel pit was opened up there. The quantity of material in this zone is estimated to be not greater than 15 000 m³.

A small pocket of sand occurs in the vicinity of Test Pit 14 downslope from disused workings. Exploitation of this area would necessitate relocating the road which is used by J.M. Clune and C. Storay to access both the gravel workings and residence to the north of these properties.

CONCLUSION

Reserves of sand and gravel on the land investigated are very limited but there may be sufficient material present to warrant exploitation during the current period of tenure. The areas do not appear to be worth continued renewals for their value of aggregate resources.

[26 October 1983]

Table 1. TEST PITS ON M.L. 46M/76 AND LANDS DEPARTMENT TEMPORARY LICENCE P.F. 2930, BELLAMY ROAD AREA NEAR FORTH

Pit	Depth (mm)	Log
1	0 - 200	Black soil
	200 - 500	Fine white sand (hillwash)
	500 - 1000	Yellow clay
2	0 - 700	Red clayey soil
	700 - 800	Yellow clayey soil
	800 - 850	Weathered mica schist
3	0 - 700	Red clayey soil
	700 - 1200	Yellow clayey soil
	1200 - 1400	Quartz and weathered mica schist
4	0 - 500	Red clayey soil with traces of mica
	500 - 1000	Weathered mica schist
5	0 - 200	Black sandy soil
	200 - 750	Fine sand and gravel

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Table 1. (continued)

Pit	Depth (mm)	Log
6	0 - 300	Disturbed ground (roadside)
	300 - 1500	Weathered schist
7	0 - 1500	Fine sand and gravel in angular contact with yellow clay

(The contact between Precambrian metamorphic rocks to the west and Lower Palaeozoic sediments to the east passes through this test pit).

8	0 - 200	Black sandy soil
	200 - 500	Fine sand with angular quartz fragments (maximum particle size 76 mm).
9	0 - 300	Fine sand
	300 - 350	Quartzite and weathered schist
10	0 - 200	Fine sand and angular quartz fragments
	200 - 1500	Mottled clay
	1500 - 1600	Decomposed schist
11	0 - 700	Fine sand and angular quartz fragments
	700 - 1100	Fine sand
	1100 - 1700	Fine yellow sandstone
12	0 - 300	Fine sand and angular quartz fragments
13	0 - 1500	Mottled clay
14	0 - 900	Grey sand
	900 - 1250	Yellow clay
15	0 - 100	Sandy hillwash
	100 - 300	Red clay