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DEPARTMENT OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

1954/48.

White Rocks Gravel Pits, Queanbeyan

G. M. Burton.

WHITE ROCKS GRAVEL PITS

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SUMMARY.

A deposit of weathered graphic granite at White Rocks, 2 miles south of Queanbeyan, was investigated and the limits of material in it suitable for easily quarryable road metal were delineated.

The area was divided into two sections: a northern one held for the most part by the Queanbeyan Council, and a southern section at present held privately as a grazing lease. "Indicated" reserves, based on the present quarrying level, of 170,000 cub. yds were established in the northern section. Most of this material will be of the same quality as that being quarried at present; some of the material towards the southern boundary of the lease will however be harder and require more blasting. In the grazing lease "inferred reserves" of 140,000 cub.yds. were delineated. It is expected that this material will be quite suitable for road making but may be slightly inferior in sizing to the material at present being quarried; also it may require more blasting in some portions than the material being quarried at present; it will carry a higher average overburden than the Queanbeyan lease.

LOCATION.

The White Rocks Gravel Pits are in Portion 49, Ph. Queanbeyan, Co.Murray. They lie immediately south-east of the intersection of Barracks Creek and the Queanbeyan Royalla Rd. and are 2 miles south of Queanbeyan.

GEOLOGY

The rock quarried in the gravel pits is a deeply weathered graphic granite, probably of Upper Silurian age; it has been inspected previously by Woolnough (1928), Smith (1950), and McInnes (1952). In the present survey by the writer assisted by M.A. Randal a more detailed inspection was made of the neighbouring area.

This more detailed work indicated that there are at least two phases in this granite mass, which has not been named previously but will be referred to in future as the Barracks Creek Granite. In Portion 49, and the extreme north-western corner of Portion 50 is a graphic granite phase, which according to Smith (op. cit.) is composed entirely of quartz and extensively kaolinised albite. This phase appears to be marginal and was emplaced at the contact of the granite mass with the Ordovician sediments to the west.

The main body of the granite to the east of the graphic phase is coarser in grain and contains mica and some hornblende. This granite is contaminated in a number of places most probably by assimilated quartz-porphyry which it has intruded, and of which a large pendant has been mapped on the eastern boundary of Portion 49. This main mass of granite is expected to have the usual properties of a granite for road construction and is unlikely to be as good as the graphic granite.

The graphic granite provides a suitable road-making material because the kaolinised felspar provides a good clay base and the unaltered felspar and graphic quartz provide a good blend of the

larger factions. In places, as for example in the centre of the present quarry face, small zones of quartz veining produce silicified spines which are not as amenable as the remainder of the quarry face material to the present method of quarrying and road construction. Small hard silicified patches, most of which probably do not persist far below ground level, are found towards the western margin of the graphic granite and on the higher points near the south-eastern corner of Portion 49 and northern part of Portion 50. Some of these patches represent the upper surfaces of silicified spines but for the most part probably are the chilled and veined marginal remnants of the former roof of the granite intrusion. Both spines and pendants (remnants) would require an increase in blasting, but this might not need to be very great.

It is noticeable that the graphic granite changes in percentage of quartz and quartz grainsize, particularly in Portion 50. With an increase in these two factors the material will become somewhat harder and may not yield as good sizing as the material in the present quarry. The increased hardness may not provide much added difficulty in quarrying but this point is hard to predict with any accuracy. The question of sizing should be investigated by checking samples from the pits which have been sunk during this investigation and by checking the outcrops in the creeks in Area B. The more northerly of the two easterly creeks in this area exposes a granite with more and larger quartz than the quarry graphic granite and is harder than this granite in the quarry; much of this hardness is due to case hardening by creek water and will probably not cause great difficulty in quarrying.

Roof pendants become so dense and possibly so thick in the north western section of Portion 50 as to prevent quarrying. A boundary to the area in which quarrying appears possible at present is shown; later quarrying may reveal that this boundary can be moved a short distance farther south and west; reserves will be increased accordingly. The southern end of the graphic granite has not been defined; it is possible that other quarrying sites in this material will be found south of the area covered by the attached plan. Small additional reserves may lie north of the present quarry.

RESERVES.

The reserves of graphic granite have been outlined on the accompanying plan. The possible quarryable area of graphic granite has been divided into two sections, A and B. The material in section A is largely proved by abundant outcrop and by the existing quarry face, and falls within the category of indicated reserves; the reserves of section B must be regarded as inferred because of the necessity of projecting information and because the quarrying quality has not been established satisfactorily.

Table of Reserves.

Section	Nett Reserves (allowing 15% wastage) cubic yards	Base level of quarry	Overburden (very approx.)
A	170,000	105	0 - 2 ft Av. 1ft.
B	140,000	110	2 - 12ft. Av.3-4ft.

It is considered that the floor of the present quarry could be reduced by 10 to 15 feet in height thus considerably increasing reserves; such reduction should not necessarily cause serious drainage problems.

It was not possible during this survey to determine the exact boundary between portions 49 and 50 for the purpose of delineating the limit of the Queanbeyan Council's mining lease. It is thought that the fence which divided sections A from section B probably marks this boundary.

REFERENCES.

McInnes, G., 1949 - Geology of the Canberra-Tharwa Area, Bur.Miner.Resour.Rec. 1949/52.

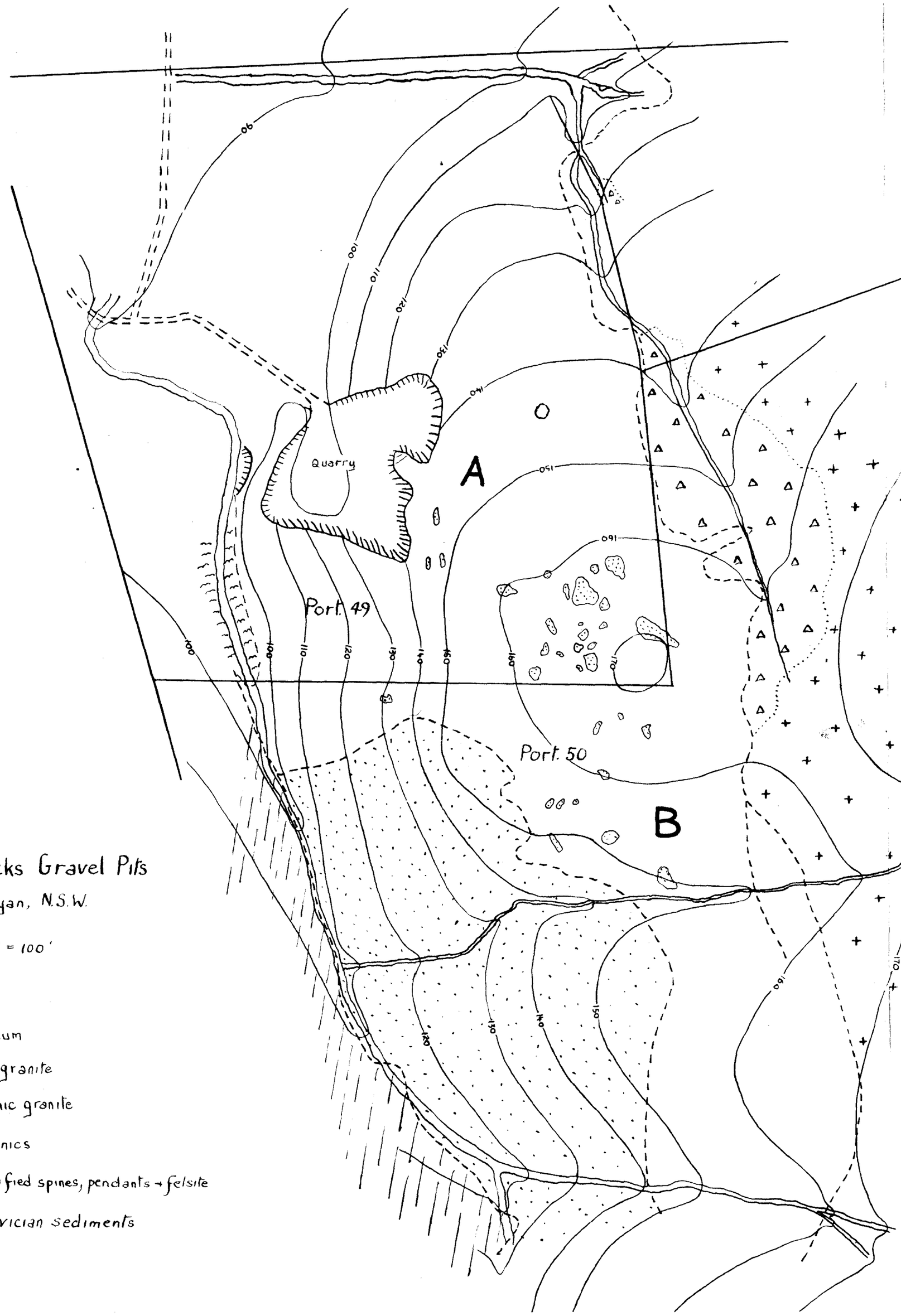
Smith, W.C., 1950 - Mortons clay deposit, Ph. Queanbeyan Bur.Miner.Resour.Rec., 1950/51.

Woolnough, W.E., 1928 - Departmental Reports - 17/2/28 and 20/6/28 (unpub.), Dept. Interior.

White Rocks Gravel Pits

Queanbeyan, N.S.W.

Scale: 1" = 100'



- Alluvium
- Mica granite
- Graphic granite
- Volcanics
- Silicified spines, pendants + felsite
- Ordovician sediments

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