

DEPARTMENT OF MINES  
SOUTH AUSTRALIA

RB 50/152

REPORT ON

PROPOSED MINING OF SANDSTONE  
SECTION 1180, HUNDRED OF ADELAIDE

by

A. T. Armstrong  
State Mining Engineer

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Rept. Bk. 50/152

E.N.80/T71

D.M.567/59

19th April, 1960

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REPORT ON

PROPOSED MINING OF SANDSTONE, SECTION 1180, HD. ADELAIDE

ABSTRACT

For a number of years White Rock Quarries Ltd. has operated on Part Section 1109 and Section 1180, Hundred of Adelaide, which are Government property. The company has now acquired its own deposits of stone on adjoining land, but wishes to continue its quarrying on Section 1180 to ensure supplies of sand. There should be adequate supplies of sandstone on this section suitable for the company's purpose, and the material could be obtained by widening or extending existing roads.

INTRODUCTION

White Rock Quarries Ltd. has struggled for years to keep up production of crushed stone and sand from its own and neighbouring small deposits. Recently it acquired several additional properties - Part Sections 1107, 1109 and 1110 and Section 1108. The company is not able to exploit these properties fully because of a caveat on them in favour of Quarry Industries Ltd. for the working of stone. The caveat terminates in June 1960, but is subject to an option for renewal for another ten years.

Shortly, White Rock Quarries Ltd. wishes to start a ready-mixed-concrete plant, and is anxious to ensure supplies of stone and sand.

QUARRYING OPERATIONS

PRODUCTION

The company at present produces about 300 tons of crushed rock and 80 tons of washed sand per day. When the concrete plant is in operation production is expected to rise to 400-500 tons of crushed rock and 250 tons of sand per day.

# WORKINGS

Work is now confined to Quarry No. 3 on the property of the government (Part Section 1109). This quarry has been extended southwards until it now cuts the road leading to the freestone quarry on Section 1180. The company intends to return as early as possible to its own quarries on Part Section 1109, where a new crushing plant is nearing completion. Its further plans include the quarrying of quartzite on Sections 1107 and 1108, as soon as the caveat is lifted.

At present sand is produced by washing the fines from the stone crushing plant. Fines for washing are also bought from other quarries. With regard to future sand supplies, the company is to some extent covered by the softer sandstone formations on its own section 1109, which could be crushed, and there are also fines to be had from its stone crushing plant. However, these supplies are sufficient only for normal demand, and do not cover the proposed expansions into the ready-mixed concrete business; moreover as the supply from his own works could vary considerably from week to week, the owner feels that he should have an assured supply not only to make up any current leeway but also to ensure supplies for his expansion. He proposes, if permission is forthcoming, to mine sandstone on Section 1180 by widening the road leading to a freestone quarry which is towards the southern end of the section, and by extending the road past the quarry.

# RESERVE OF STONE

A number of geological surveys have been made on the properties referred to above. The following details have been obtained from the reports issued:

<u>Section</u>	<u>Owner</u>	<u>Quantity of Stone (c.yds)</u>	<u>Survey</u>	<u>Docket</u>
1107	White Rock Quarries Ltd. (subject to caveat)	500,000 to 1,000,000	L. G. Nixon	DM920/51
1108	White Rock Quarries Ltd. (subject to caveat.)	1,750,000	L. G. Nixon	DM1084/57
1109	White Rock Quarries			

<u>Section</u>	<u>Owner</u>	<u>Quantity of Stone (c.yds)</u>	<u>Survey</u>	<u>Docket</u>
1110	L. H. Morasnell	100,000 to 500,000	L. G. Nixon	DM920/51
1180	Government Property	No reserves stone for crushed aggregate.	L. G. Nixon	DM920/51

It will be noted in connection with Section 1180 and the report by Mr. L. G. Nixon on this property that there are no worthwhile developments of hard stone. However, there are almost unlimited supplies of softer sandstones on this and the next section south (No. 1181).

#### DISCUSSION

Mr. C. Ferraro of White Rock Quarries Ltd. has intimated that he required approval for the following operations on Section 1180:-

- (a) The building of a new slime dam above the existing one on his own property.
- (b) The mining of sandstone on the last leg of the road to the freestone quarry, and on a continuation of that road.

He is obliged in any case to restore the road to the freestone quarry at the point where he cut it in his operations at Quarry No. 3. He must also smooth the gash made in the hillside on the lower side of the quarry. His suggestion is that he cut into the top of the eastern side of No. 3 quarry to build up a base for a road which will swing from the entrance to the quarry, passing east of the workings and the old road, up to the point where the old road crosses the creek. This seems a reasonable proposition.

The road from this point would be taken above creek level, widening in sandstone at the first big bend, widening again in sandstone at the second sharp bend and continuing at the full width up to the freestone quarry. Mr. Ferraro proposed then to continue in sandstone on the contour of this quarry.

It was made clear to him in a discussion on the site that there was to be no quarrying (as such) and no aimless road making. Those present at the discussion were Messrs. P. Pollnitz, A. Brooks, F. Pearce (Tourist Bureau), S. Hart (Town Planner), Mr. C. Ferraro (White Rock Quarries Ltd.) and A. T. Armstrong, (Mines Department). While the widening of the existing road or an extension of it could be an asset to the National Pleasure Resort (Sec. 1180), a quarry would cause an undesirable break in the natural setting.

It is evident that the amount of sandstone to be obtained in the widening of the existing road, say, 60 ft. would only be of the order of 30,000 c.yds. This amount would only be enough for a year's operation at the estimated future production rate, though it may last longer if much soft sandstone is obtained at the main stone quarry. Mr. Ferraro considers it necessary to safeguard his position for a longer period than one or two years.

On the accompanying map it will be seen that the hills at the back of the freestone quarry are largely in "Stonyfell" quartzite. This term includes a variety of rocks ranging from hard quartzite suitable for crushed aggregate to a soft "sugery" sandstone which breaks up very easily. Between the freestone quarry and Greenhill Road is a road which serves some agricultural holdings and then leads into the back of Stonyfell Quarry. A track off this road winds down to the vicinity of Skye Estate, passing along the western boundary of Section 919. It would be possible to make a road of a reasonable grade to connect the road at the freestone quarry to the Stonyfell road (and hence the Greenhill Road) by working largely westwards. Alternatively, a road could also be made eastwards from the freestone quarry around to the same area.

Either way the new road would be in the quartzite formation. Some of the rock would be hard enough for crushed metal, but in the lower section near the quarry it would be mainly of a softer variety, suitable for the purposes of White Rock Quarries Ltd. Supplies of sand are limited in the

metropolitan area. It would be a definite advantage to have road-making spoil used for the production of sand.

If a connecting road, as suggested above, is warranted, it is recommended that the company be given permission to mine sandstone on a defined route and to a height not exceeding 65ft (with a batter of 70°) and a width not exceeding 60ft at the floor with a view to the material being crushed and washed for sand. It will be six months before the company could complete the preliminary work necessary to the road widening. It might be another six months before the ready-mixed-concrete plant is up to capacity. It is suggested, therefore, that any agreement with the company be for a period in the first instance of five years.

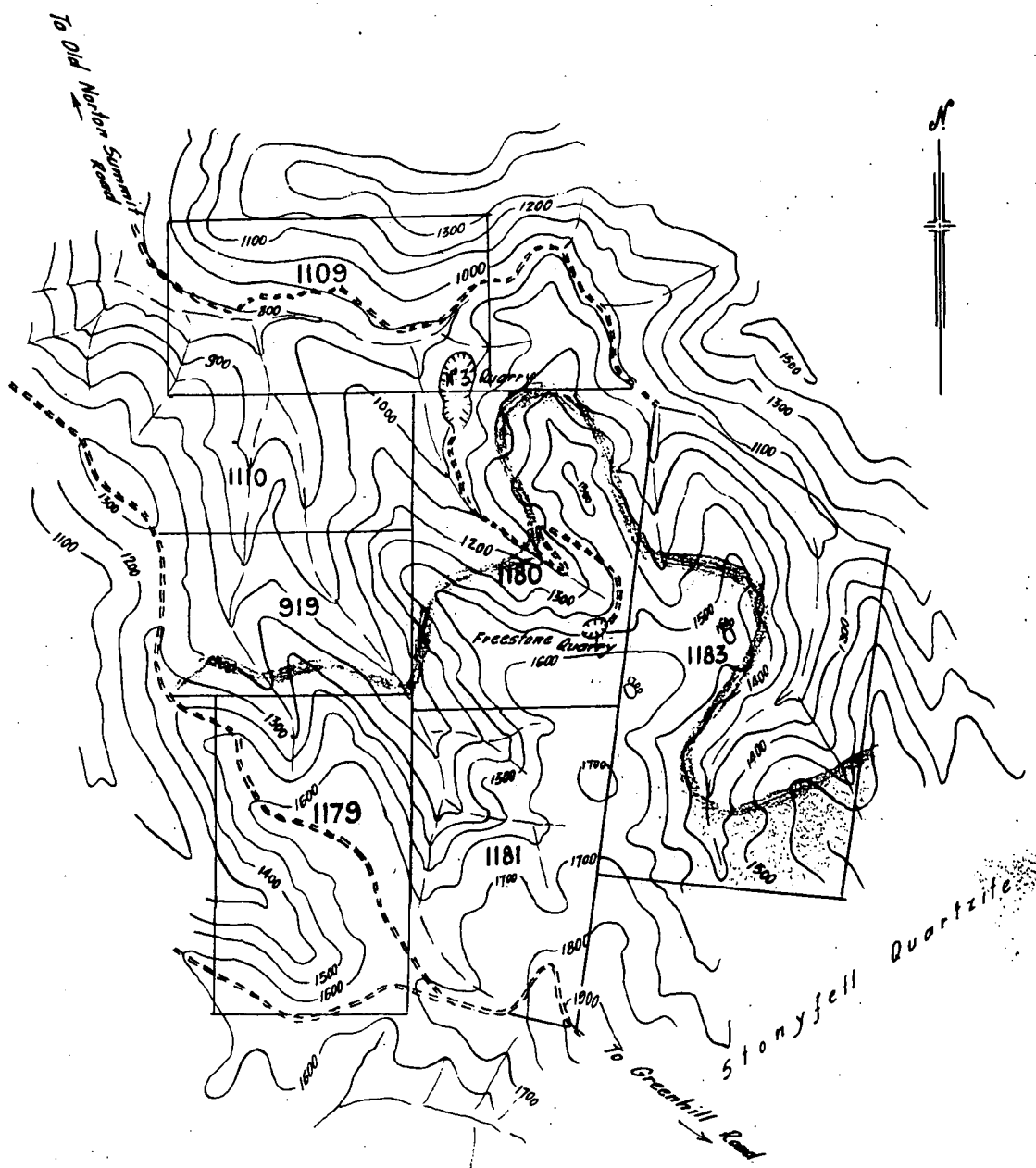
#### SUMMARY AND RECOMMENDATIONS

1. White Rock Quarries Ltd. is at present working on Part Section 1109, Hundred of Adelaide, which is government property.
2. The company produces about 300 tons of crushed rock and 80 tons of washed sand per day.
3. Within a few weeks it expects to resume quarrying on its own property which is also part of Section 1109.
4. The company is to commence the operation of a ready-mixed-concrete plant this month. It is expected that the production from the quarrying will gradually rise to about 400-500 tons of crushed rock and 250 tons of sand per day.
5. To ensure the extra sand supplies, the company requests permission to widen a portion of, and to extend, the road on Section 1180, which is government property. The portion in question is about 1200 ft. long and it leads to a small freestone quarry on the property.
6. The widening of the road to, say 60 ft. by 1200 ft. long, would make available up to 30,000 c.yds. of sandstone, say, one year's full supply to the company's plant.

7. The extension of the road past the freestone quarry is seen by the company as a continuation of the road on the same contour.
8. It would be inadvisable to allow the company to make a road which would serve no useful purpose. Such a road would tend to become an outright quarry.
9. On the other hand, since there are limited supplies of sand in the metropolitan area, road spoil which could be used as a source of sand would be welcome.
10. It would be possible to lay out a road for scenic purposes so that the road would be in sandstone or quartzite. The amount of sand or sandstone made available could only be estimated after the route of the road was pegged.
11. It is recommended that the company be given permission
  - (1) To widen the portion of the existing road.
  - (2) To extend the road on an approved course.
  - (3) To build a new alluvial dam on section 1180 to dispose of waste from washing operations.
12. The permission could be limited to a period of five years, and be conditional on the company
  - (a) restoring the road cut by quarry No. 3 and smoothing the western banks of the quarry, and
  - (b) restricting the height of excavations in road widening and extension to 65 ft with a batter of 70°, and restricting the width at the floor to 60 ft. except at approved scenic view points.

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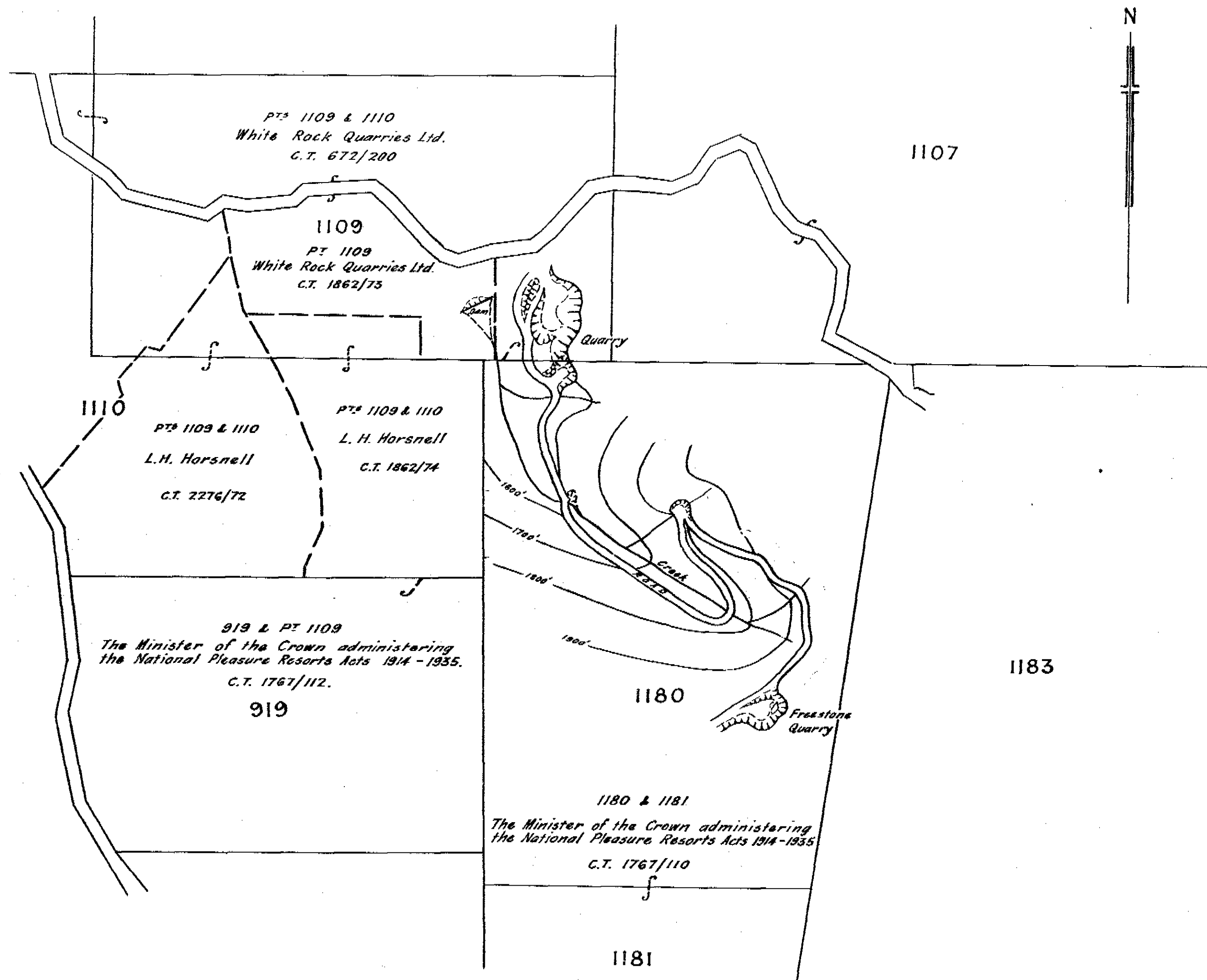
*A. T. Armstrong*  
A. T. ARMSTRONG  
STATE MINING ENGINEER



# S.A. DEPARTMENT OF MINES

Approved	Passed	Drn.	<p>WHITE ROCK QUARRIES LTD &amp; TOURIST BUREAU LAND AT HORSNELL GULLY HP ADELAIDE</p>	D.M.	Scale 20 Chns. to 1 in.
		Tcd. <i>[Signature]</i>		Req.	S · 2444
		Ckd.			Ho 6
Director		Exd.			Date 14. 4. 60





S.A. DEPT. OF MINES										400-7.58 2/17			
Associated Drawing		No.	No.	Amendment	Exd.	Date	Req. No. D.M. Compiled from	WHITE ROCK QUARRIES LTD AND TOURIST BUREAU LAND AT HORSNELL GULLY HQ ADELAIDE		Approved	Passed	Scale: 5 Chains to 1 inch	
										Drn.		60-92 HAG	
										Tcd.			
										Ckd.			
										Director of Mines		Exd.	Date