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R E S T R I C T E DDEPARTMENT OF MINESSOUTH AUSTRALIAAPPRAISAL OF NOARLUNGA BARYTES LTD. MINE -SECTIONS 110 & 120, HUNDRED OF WILLUNGAINTRODUCTION:

This appraisal was carried out at the request of Mr. G. C. MacGregor, Manager of S.N. Rodda and Co. (S.A.) Pty. Ltd. This company had secured an option to purchase an interest in the property for 14 days from Noarlunga Barytes Ltd, and at the time that this request was received by the writer the option had but three days to run. An extension of the option for seven days was obtained in response to the writer's request. In such a short time it was possible to do no more than a reconnaissance of the area and a search of previous reports and records. Mr. E. Bradshaw, foreman at the mine, gave very valuable assistance in conducting a tour of the property and revealing his intimate knowledge of the workings (now largely inaccessible) and their history.

Upon such fragmentary information is this appraisal based and it represents, therefore, no more than a geological opinion.

APPRAISAL:

The geology of the area is covered in a report by R. W. Segnit, Assistant Government Geologist, published in Mining Review No. 66.

The lodes consist of a series of lenses arranged at irregular intervals along rather persistent shears, the lenticularity being evident both in the horizontal and the vertical plane. The lenses vary in width from 4 feet to 14 feet, the average approaching 6 feet, and the lodes between the lenses probably average about 1 foot in width, but in places pinch in to a shear only.

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Exposures to date suggest that approximately one half the length of the lodes is occupied by lenses. The property contains two major lodes and several minor lodes. Some of the minor lodes have not been tested, one has been worked to a depth of 6 feet only and one has been completely worked out to a depth of 50 feet.

The two major lodes are "A" Lode and "B" Lode. The largest, "A" Lode, has a known length of 5,500 feet, of which length 2,700 feet is within the property. A branch of this lode, known as "B" Lode, has a known length of 3,500 feet, of which 2,300 feet is within the property. The Adelaide Barytes Syndicate worked one section of "A" Lode to a depth of 286 feet. Lodes which are so persistent along their strike should also be very persistent in depth and it is therefore considered very likely that the major lodes could be worked successfully to a depth of 300 feet or more.

In assessing this field the past conditions of working and market requirements should be borne in mind. In the past the ore was hauled to the surface by hand-operated windlasses, consequently it was not economical to work the lodes to any depth greater than 40 to 50 feet. There was a premium on first quality barite and very little market for "seconds" and therefore operations ceased when the ore became too heavily ironstained, a common occurrence on this field. Under the terms of their contracts the miners were paid wages whilst engaged in the dead work, but they had to repay this money when they were working on ore again. Consequently, little or no dead work or exploratory work was ever done, apart from a few shallow costeans on the surface. In short, this field has not been thoroughly explored or exploited.

RESERVES:

No accurate estimate of reserves can be made, but by using the foregoing information the possible order of size of the reserves can be assessed. In order to keep the estimate

conservative, the following dimensions are used:

Total length of lode within property ("A" & "B" Lodes) 5,000 feet

Probable depth 300 feet.

Assumed one third of lode length consists of lenses (actual nearer one half).

Average width of lenses 5 feet (actual nearer 6 feet).

Assumed density 10 c. ft. per ton (actual less than 9 c.ft).

$$\frac{5000 \times 300 \times 5}{10 \times 3} = 250,000 \text{ tons possible.}$$

CONCLUSION:

The principal market which S.N. Rodda and Co. will be catering for is the use of barite in the preparation of drilling muds, therefore the ironstaining so common to the lodes on this field does not cause concern. Their requirements at present amount to less than 100 tons per month and it is considered that there is adequate material available to supply their needs for many years. An appreciable quantity of first grade barite should also be won in the process of working the mine and this will provide material for the more remunerative paint industry market.

It cannot be too strongly emphasized that persistence in both exploration and development is essential if the lodes on this field are to be successfully exploited.

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