45/28
GS 758
DM 1276/56

DEPARTMENT OF MINES
SOUTH AUSTRALIA

SHELL GRIT DEPOSITS, SEC. 5, HD. INKERMAN

(M.C. 2202, 2203 - D.F. Sherman)

INTRODUCTION

Two mineral claims situated on Sec. 5, Hd. Inkerman, and approximately 51 miles north of Adelaide, were inspected on 15th March 1957 by W.A. Clothier. This report was prepared from several minutes presented by him.

The profile of the deposit was examined in several pits and seven representative samples collected from two pits for partial analyses to be undertaken.

PREVIOUS REPORTS

Mining Review 99 pp. 201-209 (L.L. Waterfield).

PLAN

The accompanying plan (S1539) shows the location of the deposits.

GEOLOGICAL SETTING

Low dunes composed of shell fragments (grit) formed by wave action and distributed by the prevailing westerly winds occur along the eastern coast of Gulf St. Vincent between Porte Gawler and Wakefield. The dunes are usually about 5 ft. high but in places range up to 20 ft.

On the claims under review pits have exposed a thickness of 3 to 5 ft. of shell grit. A typical log is as follows:

0	- 6"	Grey shelly loam with organic matter
6	- 12"	Stained shell grit - little organic matter
12	- 18"	Coarse shell grit
18	- 24"	Fine shell grit
24	- 48"	Clean shell grit
48	- 72"	Shell grit becoming increasingly sandy and clayey towards bottom (iron stained). Approaching water table.

RESULTS OF ANALYSES

Seven samples were taken from 2 pits (Nos. 1 and 2) and submitted for partial analyses, the results of which are as under:

Pit & Sample No.	$CaCO_3$	$MgCO_3$	Oxides of Fe & Al	Insol.
1a	92.3	2.50	0.34	2.82
1b	89.3	2.88	0.32	4.90
1c	76.2	5.45	0.36	16.90
2a	94.6	1.21	0.16	1.38
2b	91.8	2.17	0.20	3.42
2c	91.4	2.18	0.26	3.52
2d	90.7	2.06	0.20	4.42

These figures show that the $CaCO_3$ content decreases with depth as a consequence of an increase in the content of insolubles and of $MgCO_3$. The samples were taken in each case from depths of 1 ft. to 5 ft. (a, b, c - being successively deeper).

UTILISATION

(1) Cement Industry

The grit is acceptable to the cement industry and similar grades of material have been used in large quantities when normal supplies of limestone have been curtailed.

(2) Glass ware

Glass manufacturers use only small tonnages of shell grit and supplies are obtained from their own leases.

(3) Lime burning

Calcined shell grit is reputed to produce a whiter lime than that currently produced from the burning of travertine limestone.

Over the last few years the calcination of shell grit by continuous fluidised burning has been adopted successfully by several American producers. Despite the early optimism and the apparent simplicity of the process it has not been widely adopted.

RESERVES

Close boring would be necessary to establish areas of plus 80% $CaCO_3$ for selective mining and to compute reserves.

In the area examined the shell grit could be assumed to average 2 ft. in thickness and thus the claims contain an estimated 32,000 cub. yards.

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per E. A. Clothier

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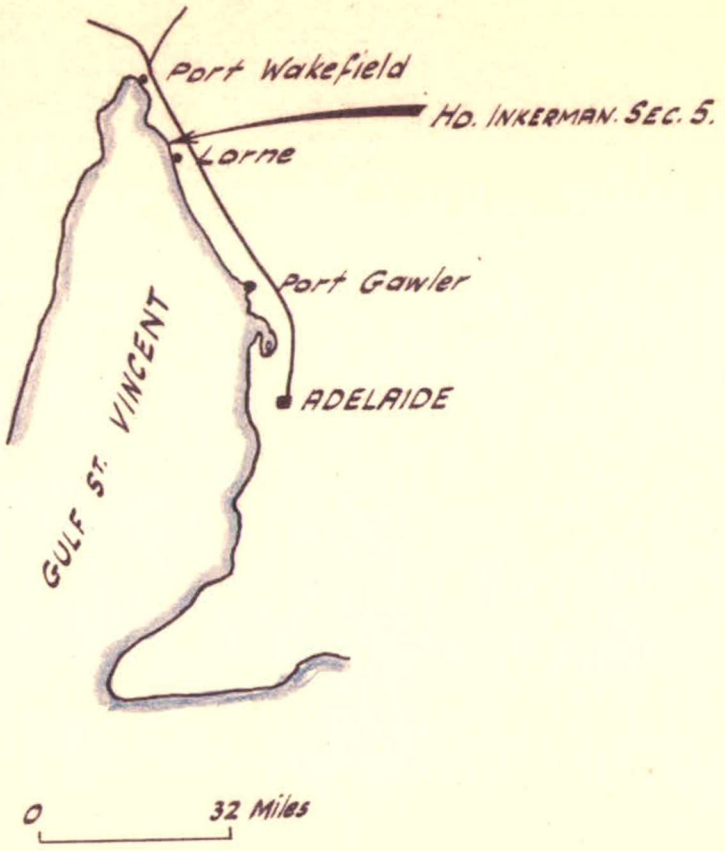
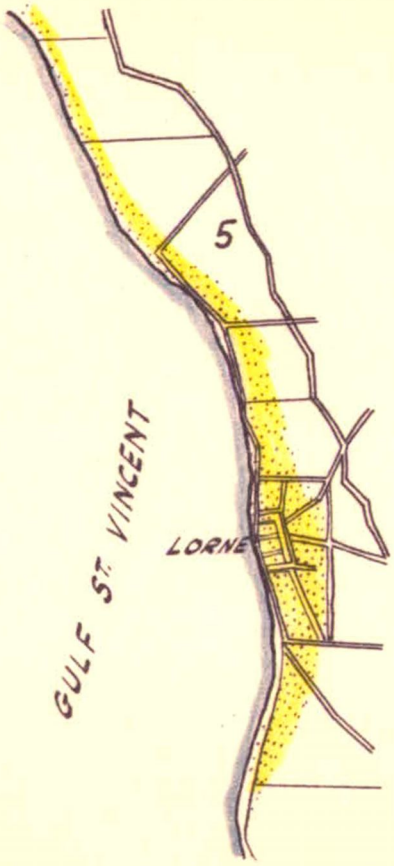
E. E. Johns
SENIOR GEOLOGIST

EEJ:AGK
1st August, 1957.

LOCALITY PLAN





0 120 Chains
0 1 Mile

Shellgrit Deposits .....

To accompany report by R.K. Johns

S.A. DEPARTMENT OF MINES

SHELL GRIT DEPOSITS
Hd. INKERMAN SEC. 5

Approved	Passed	Drn.	D.M.	Scale
		Tcd. A.W	Req.	S1539 Gj 1
Director		Ckd.		Date 1-8-57
		Exd.		