

Single-Strength glass, size 16 x 20

Blowers	\$ .36 per box of 50'
Flatteners	.25 " " " 50'
Gatherers	.09 " " " 50'
Cutters	.135 " " " 50'
Total	\$ .815 " " " 50'

Double-Strength glass, size 24 x 36

Blowers	\$ .85 per box of 50'
Flatteners	.265 " " " 50'
Gatherers	.21 " " " 50'
Cutters	.20 " " " 50'
Total	\$ 1.725 " " " 50'

I submit these figures as they might serve as a basis of computing approximate costs under present operating conditions.

AVAILABLE RAW MATERIALS FOR THE MANUFACTURE OF GLASS AT

LARAMIE.

Sand.

Location: Two miles east of Laramie in Sec. 25, T.16 N., R. 73 W., and adjacent territory. The outcrop is 200' higher than the town.

Thickness: Two to four feet; average 3 feet.

Extent: The sand is present as a continuous bed over a large area, and it is covered with an overburden of from 0-10'. Resting directly upon the sand is 7 to 8 feet of flaggy calcareous sandstone, followed by 2 to 3 feet of limestone, which forms the cap rock over the entire area. Underlying the sand is 15 feet of red sand. The sand is sufficiently friable to be worked readily with a pick and shovel. The amount of sand available under the above conditions is practically inexhaustible.

Composition:	<u>Sample #1</u>	<u>Sample #2</u>
Chemical Composition		
Silica	99.04	97.92
Fe <sub>2</sub> O <sub>3</sub>	.73	2.01

October 1, 1946

President G. D. Humphrey  
Campus

Dear President Humphrey:

I am submitting herewith information pertinent to the possible establishment of a glass factory at Laramie.

History of early glass plant. - A glass factory operated in Laramie during the years 1886-1893, using locally-derived raw materials. It is reported that approximately 100,000 boxes of glass were manufactured during the years 1892-1893. The failure of the plant was reported to have been attributable to the adverse freight rates then prevailing and in part to poor management.

Available raw materials

1. - Silica sand. - The sand used by the Laramie plant was obtained from a quarry about two miles east of Laramie. An old report in our files states that "The sand is present as a continuous bed over a large area and is overlain by an overburden varying in thickness from a few inches to as much as 10 feet. Resting directly on the sand is 7 to 8 feet of flaggy calcareous sandstone, followed by 2 to 3 feet of limestone which forms the cap rock over the entire area. Underlying the sand is 15 feet of red sandstone. The glass sand is sufficiently soft to be worked readily with a pick and shovel. The amount of sand available under the above conditions is practically inexhaustible." Analyses of the sand given in this report are as follows:

<u>Composition</u>	<u>Sample #1</u>	<u>Sample #2</u>
Silica . . . . .	99.04 %	97.92 %
Fe <sub>2</sub> O <sub>3</sub> . . . . .	.73	2.01

2. - Sodium sulfate and sodium carbonate. - During the operation of the Laramie glass plant, a saline deposit about 12 miles southwest of Laramie was operated and a branch railroad built to the lakes. Other similar lakes in the general area are present, and a bulletin concerning the "Downey Lakes" is included herewith. These saline deposits are not pure, but comprise mixtures made up of about 90% of sodium sulphate with minor amounts of calcium sulphate, magnesium sulphate, magnesium chloride and sodium carbonate.

President G. D. Humphrey  
October 1, 1946

A source of pure soda ash is now in sight in Wyoming. The Westvaco Chlorine Products Company is now engaged in shaft sinking to open up a very large deposit of pure sodium carbonate near Green River. The deposit lies at a depth of about 1,600 feet, but because of its vast size development is warranted. The shaft should be completed by the spring of 1947 and mining should begin soon thereafter.

3.- Limestone. - High-grade limestone occurs in almost inexhaustible quantities about 2 miles east of Laramie. This limestone is the same as that used in the early days for glass manufacture. The following analysis has been published in the U. S. Geological Survey literature:

Calcium carbonate . . . . .	98.83 %
Magnesium carbonate . . . . .	.45
Iron carbonate . . . . .	.02
Iron bisulphide . . . . .	.10
Alumina . . . . .	.43
Silica . . . . .	.05

4.- Feldspar. - High-quality feldspar is quarried at Tie Siding, about 18 miles south of Laramie. At the present time the entire output is shipped to Denver for use in the glass industry, but the production could surely be increased to the point to meet any local demand.

This, of course, is simply a sketch regarding the occurrence of these raw materials. Should additional information be needed on specific points, please let me know.

Yours very truly,

H. D. Thomas,  
State Geologist

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