

GARDNER MINE.

It had originally been planned to start sinking operations at the Gardner shaft just as soon as men were available. Labor conditions were such, however, that it was not possible to hire men for this work. The Mackinaw shaft reached the elevation of the 4th level in August, from which point it was planned to drive a drift over to the Gardner so that the Gardner shaft could be raised. A part of the shaft sinking crew was transferred immediately to the Gardner and sinking has been continued since September.

The work of re-opening the Gardner shaft started about the middle of July, the material being assembled at the shaft, preparatory to unwatering. The shaft had previously been sunk to a depth of 335 feet. The shaft made more water than the Mackinaw, and up to the time of closing down no pump station had been made. It was realized that the first work necessary would be to cut a pump station and sump. The actual work of unwatering was started in the first week of August and completed in two days. The original plan of opening the Gardner Mine contemplated the opening of a level 309 feet below surface. This is very close to the ledge and it was not probable that mining could ever be conducted in this territory. In order to make a small pump house and sump it was decided, however, to drive a drift at the elevation of the 1st level, as originally planned. This drift was extended 58 feet to the North of the shaft, the inside 40 feet being stripped to a width of 12 feet. Fifteen feet North of the shaft a concrete dam, 6 feet high, was put across the drift, which, it was figured, would provide a sump of sufficient capacity to hold the water for twelve hours. It has only required two pumpmen - one on the day and one on the night shift to take care of the water at the Gardner shaft. Some delay was experienced in starting the sinking after the completion of the pump house from the fact that the bottom sets of shaft timber were badly out of line. After they had been taken out and the shaft re-timbered, sinking was started; for a time the work was done on two shifts, as there was

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not sufficient men available to permit of taking the entire shaft sinking crew from the Mackinaw. Men were obtained, however, by the middle of September, since which time the work, with the exception of a short period in November, has been continued on three shifts.

During the month of September the shaft was sunk 58 feet, and aside from the shortage of men, progress was slow due to the hard jasper, which was standing almost vertical, making it difficult to drill and blast. The monthly progress of sinking for 1917 was as follows:

<u>MONTH.</u>	<u>SINKING.</u>	<u>COST PER FOOT.</u>
September,	58'	\$92.95
October,	82'	92.31
November,	65'	94.57
December,	<u>86'</u>	84.94

Total for 1917, 291' Avg. cost per foot, \$91.07

The increased cost per foot, over the cost of the Mackinaw shaft, was due almost entirely to the increase in wages.

Sinking in November was decreased owing to trouble with the shaft sinking crew, who struck for higher wages on November 15th. The men were discharged and paid off at once, a new crew was obtained, and sinking resumed on November 21st. For some time, however, there were only five men on a shift instead of eight (the full crew) so that the progress of sinking was slow for more than two weeks.

The summary of the shaft work for the year was as follows: -
Sinking 291 feet; 47 sets of timber and two sets of bearing pieces installed. Portions of two plats were cut on the North side of the shaft, one a depth of 455 feet below surface and one at a depth of 555 feet below surface. They were excavated the full width of the shaft for a distance of 12 feet.

The work on the 4th level, done from the Mackinaw shaft, consisted in extending the drift from the Mackinaw boundary line 650 feet south-east towards the Gardner shaft. On December 31st, the drift had reached a point 143 feet from the line of the Gardner shaft, while the bottom of the shaft was about 235 feet above the 4th level. The drift will be extended to a point directly under the shaft and a vertical raise will be put up in the line of the shaft. Sinking and raising will be continued until the raise and the shaft hole.

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The work done on the Gardner property in 1917 will permit of a rapid development of the ore body in 1918. The drift from the Mackinaw will be used as the ore tramming drift from the Gardner ore body to the Gardner shaft. Only a few hundred feet of drifting remains to be done to reach the ore body, and with the completion of the shaft in about ninety days, it will only be a short time until some ore will be obtained from development work.

*Darnall's
Bond*

GARDNER SURFACE:

The work of clearing for stockpile grounds and timber yards was started in the fall, but owing to the scarcity of surface labor it was not possible to complete this work.

The ground at the shaft is being filled with rock, this filling being necessary on account of the timber tunnel which has been built eight feet above surface. The fill has been extended so as to permit of the construction of the permanent bents of the ore and rock trestles.

The C. & N. W. Ry. Company has promised to have the railroad tracks installed at the Gardner Mine by May 1st, 1918. This will permit of shipping any ore that may be obtained from development work next Summer.

*Damascus
Bond*

GARDNER-MACKINAW MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR - 1917.

GRADE	IRON	PHOS.	SILICA	MANG.
Mackinaw,	54.70	.125	10.16	.655

This analysis represents 51 tons.

ORE STATEMENT - DECEMBER 31ST, 1917.

	<u>MACKINAW</u>
Output for Year,	51
Shipments,	0
Balance on Hand,	<u>51</u>

Ore encountered in sinking shaft during 1917.