

SOUTH JACKSON MINE - 1920.

Mining started in the South Jackson Pit in May and continued throughout the summer, the Pit shutting down on October 1st. A product of 69,222 tons was mined of the South Jackson grade. Practically all of this came from the East end of the open pit which now extends over 200' onto the Lucy property. Cuts were taken on both the North and South sides of this pit and considerable difficulty was had in making the grade, at various times, on account of encountering old filling material that was placed there years ago. A small part of the product came from underground development at the tunnel level where drifts were driven to the West under the manganese pit and to the Southeast towards the Lucy line to provide drainage for that area.

OPEN PIT.

Steam shovel loading was employed throughout the year. Most of the ore was broken by blasting of churn drill holes which were drilled a year ago, however considerable block holing was required to break up the large chunks. Heretofore cars were spotted by gravity where possible or by means of an L. S. & I. spotting engine when the tail room was short. This method was very expensive as the Railroad Company made a charge of \$7.50 per hour for engine service. Last summer a "dinky" engine was employed which handled the cars from the siding in front of the crusher, took them into the pit, supplied the shovel and placed the loaded cars back on the side track below the old crusher. This facilitated operations very much, although we did considerable work to expedite matters which should have been done by the Railroad Company. During the coming year, if there is a call for this ore, it is expected that most of the product will come from this section and will be mined by steam shovel if possible.

FUTURE DEVELOPMENT.

If the operations in this pit warrant it, I would recommend that a shovel of the "merry-go-round" type be used which could advance in a breast

cut. This would permit the extension of the present pit through the Lucy shaft to the East. As the pit is extended in this direction the ore could be loaded directly into Railroad cars without rehandling. It is possible, too, that an electric operated shovel with caterpillar traction which would require no tracks might be used to advantage in this pit, as the crew could be cut down to a minimum and practically no one would be required around the shovel except when it is being moved to a new position.

UNDERGROUND.

The development at the tunnel level which was started last year was continued during the year. The West drift was advanced 215' and stopped August 7th. Three crosscuts were put out from this drift each 20' in length; two to the North and one to the South. These crosscuts were located as follows:-

No. 1 crosscut to the North at diamond drill hole #98.

No. 1 crosscut to the South was 10' West of churn drill hole #97.

No. 2 crosscut to the North was 12' East of the breast.

The South drift to the West of the shaft advanced 10' around the turn when it was stopped.

The South drift to the East of the shaft advanced 128' to point of curve, 24' around the curve and then 100' on the tangent to the Southeast, making a total of 252' in all.

These drifts serve the double purpose of providing drainage for the pit above and can be used for milling purposes if that method of mining is ever necessary. The Southeast drift will be continued this summer towards the Lucy workings to drain the water above this elevation.

SURFACE.

NEW COMPRESSOR.

An Ingersoll-Rand Compressor with a capacity of 599 cubic feet of free air per minute was purchased in May. The foundation was installed during the month and the compressor started operating July 15th. This compressor is belt driven, and is equipped with a 104 horsepower motor, 2300 volts.

OLD COMPRESSOR.

The old Ingersoll-Rand compressor, capacity of 300 cubic feet per minute, was shipped to the Spies Mine July 28th and later sold to the Hill-Trumbull Mine.

REPAIRS TO DRAINAGE TUNNEL.

In May repairs were made to the drainage tunnel beneath the County Road. Lining sets were installed wherever necessary and the drift put in good repair.

ESTIMATE OF ORE RESERVES OF DECEMBER 31, 1920.

Above present pit available by present system of mining:

On Southwest side	- - - - -	35,000 tons,
North of Lucy Pit	- - - - -	10,000 "
South and Southwest of Lucy Pit	- - - - -	<u>10,000</u> "
Total	-	55,000 tons.

Below present pit and above drainage tunnel available by milling:

West of Crusher	-- - - -	- 186,000 tons,
Area below bottom present pit by churn drilling	- -	<u>160,000</u> "
Total	-	346,000 tons.

GRAND TOTAL - 401,000 tons.

ANALYSIS

	<u>IRON</u>	<u>PHOS.</u>	<u>SUL.</u>	<u>MANG.</u>	<u>MOIST.</u>	<u>SIL.</u>
Natural	36.83	.066	.010	2.00	7.00	31.56

SOUTH JACKSON MINE

AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1920.

GRADE	IRON	PHOS.	SILICA	MANG.
South Jackson,	37.63	.038	35.76	2.64

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1920.

GRADE	Mine				Lake Erie		
	IRON	PHOS.	SILICA	MANG.	IRON	MOIST.	MANG.
South Jackson,	37.73	.039	35.68	2.65	37.85	7.57	2.81

ORE STATEMENT AND SHIPMENTS FOR YEAR 1920.

	YEAR	LAST YEAR
Output for year,	69,222	56,840
Shipments,	69,222	56,840
Balance on hand,	0	0

1920 - Idle Jan. 1st to May 3rd, 1920
1-10 Hour Shift May 3rd to Oct. 2nd, 1920
Idle Oct. 2nd to Dec. 31st, 1920
1919 - 1-10 Hour Shift May 28th to Nov. 13, 1919.

SOUTH JACKSON MINE.

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SOUTH JACKSON MINE.

COMPARATIVE MINING COST FOR YEAR.

	1 9 2 0.	1 9 1 9.	INCREASE.	DECREASE.
MADE IN				
PRODUCT	69,222	56,840	12,382	
General Expense	.026	.036		.010
Maintenance	.093	.007	.086	
Mining Expense	.400	.436		.036
Crushing	.150	.125	.025	
Stripping	.005	.018		.013
Cost of Production	.674	.622	.052	
<u>DEPRECIATION.</u>				
Original Purchase	.803	.803		
Total Depreciation	.803	.803		
Taxes	.034	.037		.003
Idle Expense	.013	.017		.004
Central Office	.013	.013		
Miscellaneous	.011	.008	.019	
Sundry Expense	.008	.007	.001	
Cost on Stockpile	1.556	1.491	.065	
Loading & Shipping	.001	.008		.007
Total Cost on Cars	1.557	1.499	.058	
No. Days Operating	124	100	24	
No. Shifts & Hours	1-10hr	1-10hr		
Avg. Daily Product	558 ³	568		10
<u>COST OF PRODUCTION.</u>				
Labor	.296	.325		.029
Supplies	.378	.297	.081	
Total	.674	.622	.052	

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SOUTH JACKSON MINE

COMPARATIVE WAGES AND PRODUCT

	1 9 2 0	1 9 1 2	INCREASE	DECREASE
PRODUCT	69,222	56,840	12,382	
No.Shifts and Hours	1-10hr	1-10hr		
AVERAGE NO. MEN WORKING				
Surface	7	7 $\frac{1}{2}$		$\frac{1}{2}$
Underground	4	4 $\frac{1}{2}$		$\frac{1}{2}$
Total	11	12		1
AVERAGE WAGES PER DAY				
Surface	5.74	5.32	.42-8%	
Underground	6.73	5.92	.81-13	
Total	6.09	5.51	.58-10.5	
WAGES PER MONTH OF 25 DAYS				
Surface	143.50	133.00	10.50	
Underground	168.25	148.00	20.25	
Total	152.25	137.75	14.50	
PRODUCT PER MAN PER DAY				
Surface	32.49	25.90	6.59	
Underground	59.92	53.38	6.54	
Total	21.07	17.44	3.63	
LABOR COST PER TON				
Surface	.177	.205		.028
Underground	.112	.111	.001	
Total	.289	.316		.027
TOTAL NUMBER OF DAYS				
Surface	2,130	2,194 $\frac{1}{2}$		64 $\frac{1}{2}$
Underground	1,155	1,065	90	
Total	3,285	3,259 $\frac{1}{2}$	25 $\frac{1}{2}$	
AMOUNT FOR LABOR				
Surface	12225.19	11676.19	549.00	
Underground	7778.63	6303.37	1475.26	
Total	20003.82	17979.56	2024.26	

Proportion Surface to Underground Men:

1920 - 1 to .56
 1919 - 1 to .6
 1918 - 1 to 1.75
 1917 - 1 to 6.5
 1915 - 1 to 5.