

SOUTH JACKSON MINE - 1921.

No mining was done in the South Jackson Pit until September when an order was received early in the month for 400 tons for the Cadillac Furnace. This was made by an all rail shipment. On the 27th of September a further order of from 3,000 to 4,000 tons was received to go forward by lake. This was completed on the 14th of October. The total tonnage for the year was as follows:-

September,	1,655 tons,
October,	3,022 "
Total -	4,677 tons.

This ore was taken from the South side of the pit along the Lucy line by means of steam shovel. The dinky locomotive was used to handle the cars from the pit to the storage track in front of the crusher.

TUNNEL REPAIRS.

After the completion of the work in the pit a few sets which were broken down near the portal of the tunnel were replaced by Captain Nicholls and one helper. The open ditch was also repaired to the Southeast of the mouth of the tunnel through the field.

FUTURE DEVELOPMENT.

I wish to repeat what I stated in my report a year ago. 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. The greatest cost in our present operation, outside of breaking ground, is the shovel crew. If an electrically driven shovel with caterpillar traction could be secured, several men could be saved daily in the operation of this pit.

ESTIMATE OF ORE RESERVES OF DECEMBER 31, 1921.

Above present pit available by present system of mining:

On Southwest side	- - - - -	- 30,400 tons,
North of Lucy Pit	- - - - -	- 10,000 "
South and Southwest of Lucy Pit	- - - - -	- <u>10,000</u> "
Total	-	50,400 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 - 396,400 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

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AVERAGE MINE ANALYSIS ON OUTPUT FOR YEAR 1921.

GRADE	IRON	PHOS.	SILICA	MANG.
So. Jackson,	36.44	.065	35.80	2.65

AVERAGE ANALYSIS ON STRAIGHT CARGOES FOR YEAR 1921.

GRADE	Mine				Lake Erie		
	IRON	PHOS.	SILICA	MANG.	IRON	MOIST.	MANG.
So. Jackson,	36.19	.056	35.85	2.64	40.00	8.65	3.22

ORE STATEMENT AND SHIPMENTS FOR YEAR 1921.

	YEAR	LAST YEAR
Output for Year,	4,677	69,222
Shipments,	4,677	69,222
Balance on Hand,	0	0

1921 -- Idle Jan. 1st to Sept. 27th, 1921.  
 1-10 Hour Shift, Sept. 27th to Oct. 14th, 1921.  
 Idle Oct. 14th to Dec. 31st, 1921.

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.

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COMPARATIVE MINING COST FOR YEAR

	1 9 2 1	1 9 2 0	INCREASE	DECREASE
Product	4,677	69,222		64,545
Underground Costs	.726	.631	.095	
Surface Costs	-	.020		.020
General Mine Accounts	.054	.023	.031	
Cost of Production	.780	.674	.106	
Original Cost	.803	.803	.	
Plant Account	.046		.046	
Taxes	1.198	.034	1.164	
Central Office	.024	.013	.011	
Contingent Expense	.003		.003	
Cost Adjustment	.167	.019	.048	
Winter Expense	.190	.013	.177	
Cost on Stockpile	3.211	1.556	1.655	
Loading & Shipping	m-	.001		.001
Total Cost on Cars	3.211	1.557	1.654	
No. Days Operating	12	124		112
No. Shifts & Hours	1-10hr	1-10hr		
Average Daily Product	390	558		168
<u>COST OF PRODUCTION</u>				
Labor	.279	.296		.017
Supplies	.501	.378	.123	
Total	.780	.674	.106	

Mine only operated 12 days with 5 men  
surface and 7 men in pit.

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COMPARATIVE WAGES AND PRODUCT

	1 9 2 1	1 9 2 0	INCREASE	DECREASE
PRODUCT	4,677	69,222		64,545
No.Shifts and Hours	1-10 hr	1-10hr		
AVERAGE NO.MEN WORKING				
Surface		7		
* Underground		4		
Total		11		
AVERAGE WAGES PER DAY				
SURFACE	4.39	3.74		1.35
UNDERground	4.16	6.73		2.57
Total	4.28	6.09		1.81
WAGES PER MONTH OF 25 DAYS				
Surface	109.75	143.50		33.75
Underground	104.00	163.25		64.25
Total	107.00	152.25		55.25
PRODUCT PER MAN PER DAY				
Surface	34.26	32.49	1.77	
Underground	39.14	59.92		30.78
Total	18.27	21.07		2.80
LABOR COST PER TON				
Surface	.128	.177		.049
Underground	.106	.112		.006
Total	.234	.289		.055
TOTAL NUMBER OF DAYS				
Surface	136½	2,130		1993½
Underground	119½	1,135		1015½
Total	256	3,265		3009
AMOUNT FOR LABOR				
Surface	599.26	12225.19		11625.93
Underground	497.32	7778.63		17281.31
Total	1096.58	20003.82		18907.24

Proportion Surface to Underground Men:

1921 -  
 1920 - 1 to .56  
 1919 - 1 to .6  
 1918 - 1 to 1.75  
 1917 - 1 to 6,5  
 1915 - 1 to 5

\* - Mine only operated 12 days with 5 men surface and 7 men in pit.