

MORRIS-LLOYD MINE.

The hoist for the year 1914 at the Morris-Lloyd was as follows:

GRADE	MORRIS	LLOYD	TOTAL TONS.
Bessemer,	31,776	34,546	66,322
Non-Bessemer,	5,606	10,100	15,706
Silica,	<u>25,174</u>	<u>84,943</u>	<u>110,117</u>
TOTAL ORE,	62,556	129,589	192,145

PERCENTAGE OF GRADES HOISTED.

Bessemer,	51%	26%	35%
Non-Bessemer,	8%	8%	8%
Silica,	41%	66%	57%

ROCK HOISTED.

From Morris Mine proper.....	3,271
" Lloyd Mine proper.....	845
" 4th Le. Raising & Stripping Lloyd Shaft, Section 6, (Pockets & Flat, all hoisted through Morris.	35,109
" Cutting plats and drifting on 3rd level, Lloyd,.....	12,849
" Sinking Morris Mine winze to 1200 ft. level,.....	<u>3,342</u>
TOTAL ROCK HOIST,.....	55,416
TOTAL ORE HOIST,.....	<u>192,145</u>
GRAND TOTAL HOIST, Ore and Rock,.....	247,561

MORRIS

SHIPMENTS FOR YEAR.

GRADE.	FROM STOCK.	FROM POCKET.	TOTAL.	BAL. IN STOCK.
Morris Bessemer,		11,565	11,565	27,246
Morris Ore,		617	617	7,902
Silica,	<u>9,544</u>	<u>7,337</u>	<u>16,881</u>	<u>21,034</u>
TOTAL,	9,544	19,519	29,063	56,182

LLOYD

Lloyd Bessemer,	5,340	13,376	18,716	25,014
North Lake Ore,	11,496	1,560	13,056	9,338
Silica,	<u>47,047</u>	<u>44,391</u>	<u>91,438</u>	<u>114,467</u>
TOTAL,	<u>63,883</u>	<u>59,327</u>	<u>123,210</u>	<u>148,819</u>
GRAND TOTAL,	73,427	78,846	152,273	205,001

MORRIS-LLOYD MINE.

The Morris Mine ore hoist in 1914 shows an increase of 25,314 tons over that of 1913. During all of 1913 and for the first five months of 1914, this mine was being developed for ore production, so that mining was in progress only during the last seven months of the year. The output of Bessemer in 1914 increased 11,553 tons, the Morris 1,693 tons, and the Silica ore 12,068 tons. This shows that fifty percent of the increased hoist is in the Silica grade; this was due entirely to the large amount of Silica ore encountered in developing the ore body for mining.

Of the ore hoisted during 1914, 36,267 tons came from the Chase Lease, and this with the 968 tons hoisted in 1912 and the 15,345 tons hoisted in 1913, makes a total output of 52,580 tons of ore from the Chase Lease since the mine was opened, on which royalty has been paid.

The hoist of ore from the Lloyd Mine shows a decrease of 9,249 tons as compared with 1913. This decrease started in July and continued throughout the balance of the year. It was due mainly to the decreased output of Silica ore from the 2nd level shrinkage stopes, which averaged 2,888 tons per month up to July, and only 1,226 tons per month for the last six months of the year. This was caused by all the ore being drawn from the big stopes near the shaft, so that the only ore obtained during the last six months of the year came from the smaller stopes at the East end of the 2nd level. The decrease was also due in part to the decrease in the area of high grade ore on the sub levels, rendering it impossible to work as many contracts here as before; also the plan adopted in October of only mining the Silica ore encountered in development work, further decreased the product.

The Bessemer hoist decreased 7,545 tons and the North Lake 9,994 tons, while the Silica hoist increased 8,290 tons as compared with 1913. The decrease of high grade ore is due principally to the decreased areas of these grades encountered on the sub levels. Prior to adopting the plan of mining only the Silica ore encountered in the development of the high grade ore bodies, the output of this grade had been sufficiently large to increase the total output of Silica ore above that of 1913. The average hoist of Silica ore dur-

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ing the first ten months of the year was 7,715 tons, and the last two months when this plan was in force, the Silica hoist only averaged 3,895 tons per month.

The cost per ton shows an increase of 27.9 cents per ton over that of 1916. The cost is increased for three reasons; first, and most important, on account of the extensive program of development work under way throughout the past year; second, to the small size of the Morris ore body and the decreasing size of the Lloyd ore bodies; third, to the decrease in output of the shrinkage stopes at the Lloyd during the last six months of the year.

MORRIS-LLOYD MINE.  
ESTIMATE OF ORE IN SIGHT.  
MORRIS MINE.

LOCATION.	BESSEMER	MORRIS	SILICA	TOTAL TONS.
Above 1st level,	100,000	10,000	25,000	135,000
Above 2nd level,	179,000	50,000	46,000	275,000
Probable ore below 2nd level,	47,400	31,600	15,000	94,000
TOTAL ORE,	326,400	91,600	86,000	504,000
Less 20% for rock and loss in mining,	65,280	18,320	17,200	100,800
NET TOTAL ORE,	261,120	73,280	68,800	403,200

PROBABLE  
ANALYSIS.

Bessemer,	Iron	59.50	Phosphorous	.055	Moisture	15.00
Non-Bessemer,	"	57.55	"	.075	"	15.00
Silica,	"	52.00	"	.054	"	15.00

LLOYD MINE.

LOCATION.	BESSEMER-NO. LAKE-	SILICA	TOTAL TONS	
Above 2nd level,	28,000	50,000	47,000	125,000
Probable above 3rd Level,	25,000	275,000	90,000	390,000
Probable below 3rd Level,		5,000		5,000
TOTAL ORE,	53,000	330,000	137,000	520,000
Less 20% for rock and loss in mining,	10,600	66,000	27,400	104,000
NET TOTAL ORE,	42,400	264,000	109,600	416,000

PROBABLE  
ANALYSIS.

Bessemer,	Iron	58.00	Phosphorous	.053	Moisture	11.50
Non-Bessemer,	"	58.50	"	.085	"	11.50
Silica,	"	51.30	"	.052	"	10.00

SECTION 6 ORE BODY.

LOCATION.	BESSEMER	NON-BESS.	SILICA	TOTAL.
Developed above 4th level,	47,000	611,000	112,000	770,000
Probable above 4th level,		1,500,000		1,500,000
TOTAL ORE,	47,000	2,111,000	112,000	2,270,000
20% for rock and loss in mining already deducted.				

PROBABLE  
ANALYSIS.

Bessemer,	Iron	64.10	Phosphorous	.043	Moisture	13.42
Non-Bessemer,	"	60.80	"	.135	"	13.42
Silica, 86,000 tons,	"	54.04	"	.112	"	13.42
Silica, 36,000 tons,	"	54.28	"	.043	"	13.42

NET DEVELOPED AND PROBABLE ORE - MORRIS-LLOYD AND SECTION 6 ORE BODIES.

	BESSEMER	NON-BESSEMER	SILICA	TOTAL.
Morris ore body,	261,120	73,280	68,800	403,200
Lloyd ore body,	42,400	264,000	109,600	416,000
Section 6 ore body,	47,000	2,111,000	112,000	2,270,000
GRAND TOTAL ORE,	350,520	2,448,280	290,400	3,089,200

MORRIS-LLOYD.

MORRIS-LLOYD MINE.

The estimate of ore in sight at the Morris Mine shows a reduction from the estimate of 1913 of 297,550 tons. When the 1913 estimate was made, development work had not progressed far enough to permit of establishing an accurate idea of the limits of the ore body. The work done during 1914 has made it possible to make a more accurate estimate. As it is not planned to mine any Silica ore at the Morris Mine, other than that encountered in development work, the estimate of Silica ore for 1914 is based on the amount of Silica ore which it is figured must be produced in order to mine the high grade ore. There is, without question, a very much larger tonnage of this grade, as development work above the 1st level has shown the Silica ore to have a greater width than the high grade ore. If this condition persists down to the 2nd level, it may be reasonably be expected that there is in the neighborhood of a half million tons of Silica ore. In ordinary sub level mining operations, there is no profit in mining this grade at present prices, and as most of the ore mined during 1914-15 will come from the Chase Lease, where there is an additional Royalty of 25¢ per ton, mining of all the Silica ore would entail a considerable loss.

It will be noted that in this estimate twenty percent has been deducted for rock and loss in mining. The deduction of this amount has been made standard for all the mines, and accordingly, the mines in the North Lake District have been brought in line with the rest.

The Lloyd estimate shows a decrease of 102,000 tons as compared with the estimate made in 1913. There is a decrease of over 117,000 tons in the Bessemer, an increase of 118,000 tons in the Non-Bessemer, and a decrease of 103,000 tons in the Silica ore. The Bessemer grade is decreased on account of developments during the past year, which showed that the area of ore of this grade was showing a rapid decrease as the sub levels gained in depth below the 1st level. It is possible that a larger tonnage of this grade may eventually be obtained, but it was not considered safe to make the estimate larger at this time.

There is a large increase in the estimate of non-Bessemer ore due to the opening of the 3rd level. Cross sections made of the ore body after the 3rd level was opened, showed that a much larger tonnage of this grade

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could be expected between the 2nd and 3rd levels. If ore is developed between the 2nd and 3rd levels at the East end of the mine, which fact was hardly considered in this estimate, it is possible that the estimate of high grade ore may later be more than doubled.

For the first time an estimate is included for the Section 6 ore body. This estimate allows for a solid ore body between the limits of the crosscuts opened on the 4th level of the Lloyd, and a solid ore body at the East end of the ore trough just below surface, where a number of drill holes were put down. Between these two ore bodies, the only ore estimated, is a cylinder 50 ft. in diameter at each drill hole which encountered ore in this territory. This estimate is certainly conservative, and as these figures represent only the actual developed ore after twenty percent has been deducted for rock and loss in mining, I would, as a conservative estimate say that there was 1,500,000 tons of probable ore above the 4th level in the Section 6 ore body in addition to the developed ore. Even this estimate of probable ore is extremely conservative, and it is possible that three million tons may be developed here.

#### MORRIS MINE.

The first of the year there was thirteen contracts working at the Morris Mine, all on development work. This number was decreased to twelve in July, and in August dropped to eight. This was the time that all the contracts started mining ore, and eight contracts worked here until the last two months of the year, after that there was only room for seven contracts. It is manifestly impossible to obtain a larger product from the mine unless the working force is increased, but this is, at this time, impossible on account of the small area of the ore bodies where mining is now in progress.

Water has not interfered as much with the development work and mining operations as in 1913, although all the men employed in the mine continue to wear oil clothes. Drain pipes have been put in on every sub level, and the greater part of the water is now piped down to the 1st level. Some water comes in through the cribbing of the raises and causes trouble when loading cars, as the dirt overflows the cars before it can be stopped. The water has increased the amount of ore carried out to the shaft and down to the settling