

0410 0004

(189)

Item 4

(188 pages)

JUNIATA - LAST CHANCE MINE

AURORA MINING DISTRICT, MINERAL
COUNTY, NEVADA

REPORTS - ASSAY DATA

0410 0004

189
item 4

435 Hillcrest Road
San Mateo, California
September 25, 1936

Mr. A. P. Scott
140 S. McCarty Drive
Beverly Hills, California

Dear Mr. Scott:

I am summarizing briefly the results of the Aurora examination made from July 9 to September 20.

The values in this letter are combined gold (at \$35 per ounce) and silver (at 77 cents per ounce) unless otherwise noted.

ORE PROBABILITIES

Juniata-Martinez Mine

Vein No. 1

One Hundred Feet Deeper Than Lower Tunnel Level

Length (L) - the length stoped by Goldfield from the Lower Tunnel to the Middle Tunnel levels.

Width (W) - the average width of the vein on the Lower Tunnel level.

Depth (D) - a man-way extending from the Lower Tunnel level down to the Drainage Tunnel level was made accessible until water was encountered 40 feet above the Drainage Tunnel. The sampling of the man-way showed ore persisting below the Lower Tunnel level to a depth of 100 feet. Below this depth the vein persisted with equal strength but is too low grade. An Intermediate level at a depth of 140 feet below the Lower Tunnel level and 80 feet above the Drainage Tunnel level is 200 feet in length on the vein and was sampled by ten samples over the accessible length of 140 feet which give an average value of \$2.95 per ton over an average width of 4.5 feet. This is too low grade. On the Drainage Tunnel level this vein was sampled by Goldfield for a length of 220 feet by 37 samples which show an arithmetic average of \$1.75 per ton - sample widths were not given.

Value - The average grade is the average of 65 samples taken by Goldfield on the Lower Tunnel level over a

length of 400 feet before stoping. These showed an average width of 4 feet, averaging \$9.40 per ton in gold; silver was not determined but the amount of silver in our sampling on this vein averages around one ounce per ton. Our ten samples down the man-way from the Lower Tunnel level to a depth of 100 feet gave an average of \$10.35 per ton with an average vein width of 5 feet.

$$\frac{(L) 400' \times (W) 4' \times (D) 100'}{15 \text{ cu. ft.}} = 12,300 \text{ tons averaging } \$9.40 \text{ per ton.}$$

Above The Middle Tunnel Level In The Western Portion
Which Is In The Lost Chance Fraction Ground

In the eastern portion this vein was stoped by Goldfield from the Lower Tunnel level to the surface. So far as we see the eastern portion it does not appear to have been stoped above the Middle Tunnel level. It is possible that Goldfield had an obscure entrance into this ground and did some stoping of which we found no evidence. However, Goldfield did not own the Lost Chance Fraction claim.

Length (L) - the length proved on this vein on the Lower Tunnel level and which does not appear to have been stoped above the Middle Tunnel level. This is also the distance from the Juniata Western end line that the vein was proved westward into Lost Chance Fraction ground.

Width (W) - the average width on the Lower Tunnel level.

Value - the average grade of the Lower Tunnel level. The block itself could not be got at without more time and expense than was available.

$$\frac{(L) 150' \times (W) 4' \times (D) 150'}{15 \text{ cu. ft.}} = 7,000 \text{ tons averaging } \$9.40 \text{ per ton.}$$

Vein No. 2

Fifty Feet Deeper Than Lower Tunnel Level

This vein has been developed by Goldfield for a length of 200 feet on the Lower Tunnel level. It was sampled by us in 21 samples which show an average vein width of 4.75 feet with an average value of \$8.90 per ton. No development of this vein below this level has occurred. As ore persisted 100 feet below this level on No. 1 vein we are assuming a fifty foot extension on this vein.

$$\frac{(L) 200' \times (W) 4.75' \times (D) 50'}{15 \text{ cu. ft.}} = 5,600 \text{ tons averaging } \$2.90 \text{ per ton.}$$

Above Middle Tunnel level

This vein was stoped by Goldfield from the Lower Tunnel to about the position of the Middle Tunnel. No workings develop this vein on the latter tunnel level. It appears that Goldfield intended to continue the stoping of this vein from the Lower Tunnel level. We were unable to make accessible the top of their stope with the time and means available, but were able to recover a raise from the Lower Tunnel to the top of the stope. The sampling of this showed an average of \$7.50 per ton over a vein width of 5.1 feet. From the top of this stope to the surface is 200 feet.

$$\frac{(L) 200' \times (W) 5' \times (D) 200'}{15 \text{ cu. ft.}} = 15,400 \text{ tons averaging } \$8.20 \text{ per ton.}$$

Vein No. 3

Between The Lower And Middle Tunnels In The Eastern Portion

Goldfield and earlier operators stoped this vein over a length of 380 feet from the Lower Tunnel level to the surface, a distance of 500 feet, leaving some small pillars and a block in the eastern portion between the Lower and Middle Tunnel levels. This block is rather low grade. On the Middle Tunnel level it shows an average width of 3.7 feet over an unstoped length of 160 feet averaging \$5.30 per ton. It is limited on the east by a post-mineral cross fault. The drift on the Lower Tunnel level poorly and only partially exposes the vein. Our sampling shows an average width of 4 feet with \$5.60 per ton.

$$\frac{(L) 160' \times (W) 3.8' \times (D) 100'}{15 \text{ cu. ft.}} = 4,700 \text{ tons averaging } \$4.50 \text{ per ton.}$$

From Lower to Upper Tunnel Levels At Western Extension

The Upper Tunnel drift on this vein is advanced 100 feet farther west than the average stoping in this direction. A small shaft and two raises bounding this block of ground on the east are in good ore. The average of 37 samples

in the small shaft, the Upper Tunnel drift into this ground, the two raises and the faces of the Middle and Lower Tunnel drives show a width of 3.5 feet with \$10.90 per ton.

$$\frac{(L) 100' \times (W) 3.5' \times (D) 200'}{13 \text{ cu. ft.}} = 5,400 \text{ tons averaging } \$10.90 \text{ per ton.}$$

No ore is estimated on this vein below the Lower Tunnel as our available data indicate that the grade is becoming too low at this depth.

In the Juniata-Martinez stopes on all three veins there is broken ore and quartz filling, the latter rejected by the earlier operators, totalling around 4,000 tons that such sampling as we were able to do suggests has a grade of \$5 a ton. This filling and broken ore is loose and ready for drawing at a cost of not over 50 cents a ton when the mine is equipped for tramming.

This gives a total of 50,000 tons of ore not blocked out but fairly well indicated.

At none of the other mines are we able to estimate any ore reserve. However, the workings at the Prospectus, Humboldt and Silver Lining are not accessible. Goldfield data and such little sampling as we were able to do indicate that an appreciable quantity of ore could be estimated at the latter were the workings accessible.

Dumps

There are a few surface dumps on the property you have under option which probably could be made accessible through mine workings if surface haulage was not practical.

Juniata Upper Tunnel	600 tons approximating	\$12.50 / T.
Juniata Middle Tunnel (a portion)	100 " "	10.00 "
Juniata Incline Shaft	500 " "	7.00 "
Martinez small shafts	50 " "	15.00 "
Last Chance Opencut	100 " "	5.00 "
Philadelphia Tunnel	500 " "	7.00 "
	1850 " "	\$ 9.50 "

On outside properties in the district there are other surface dumps which it may be profitable to include if the owners are reasonable:

Antelope various localities	3500 tons approximating	\$ 9.50 / T.
Clarence tunnel	500 " "	8.50 "
Gladiator	800 " "	5.00 "

ORE POSSIBILITIESJuniata--Martinez

At and above the Lower Tunnel level the western faces of all three veins are in ore.

	Width (feet)	Grade (\$ per ton)	
Lower Tunnel level			
Vein No. 1	4.	9.60	(Goldfield Data)
Vein No. 2	4.5	16.67	
Vein No. 3	3	4.73	
Middle Tunnel level			
Vein No. 3	4	10.60	
Vein No. 2	is not developed on this level		
Vein No. 1	is not accessible but was stopped by Goldfield as far west as the face of the Lower Tunnel level.		
Upper Tunnel Level			
Vein No. 3	{ 4.5	3.89	
	{ 4	9.06	
Thirty-foot level			
Vein No. 3	2	16.20	
Twenty-foot level	5.5		
Vein No. 3		12.31	

No reason was found to suggest that these veins do not continue to persist westward until the Humboldt cross fault zone is reached, which is tentatively located some 500 feet farther west. This area is covered by sand and was the stratified filling of what appears to have been a former small valley. Out crops cannot be traced nor can the position of the Humboldt fault zone be accurately placed. Before this zone is reached minor disturbances may be found, but no important difficulty is anticipated. Elsewhere the Humboldt fault zone has shown an important displacement to the north, and it is anticipated that it will displace these veins in steps in such direction. The amount of displacement observed elsewhere on this fault zone is sufficient to permit the principal vein showing in the southern segment of the Last Chance to be one of the Juniata-Martinez veins beyond (west) of the fault. This would be a total displacement in a northern direction of a few hundred feet - less than five hundred feet.

While successive samples along the veins vary notably in values, no definite localization of the ore to shoots in the veins was noted. So far as developed the values have been persistent longitudinally along the veins. Longitudinal development commonly has been stopped by faulting of the veins. As the lower

Tunnel level will be at a depth of around 270 feet in this ground to the west, every one hundred feet extension westward to this depth on the three veins would add 25,000 tons.

Eastward the faces in the accessible ground are determined by a post-mineral cross fault zone with the exception of the eastern face of vein No. 3 and the Lower Tunnel level which has 30 or 40 feet to be advanced before reaching this fault. The present face shows a 2.5 foot width of \$6.29 per ton with the full width of the vein not exposed by the drift. On the Middle Tunnel level this vein shows a 3.5 foot width of \$13.64 per ton as it is cut off by the fault. Vein No. 1 at the locality of the fault on the Lower Tunnel level shows an 8 foot width of \$13.23 per ton (Goldfield data). This vein has been completely stopped to the fault at this end from this level to the surface. Eastward vein No. 2 has not been explored and in this direction it may merge with vein No. 3. It may be a spur of that vein occurring as a separate vein only in the western part of the mine. However, this is not definite and the vein should be explored for in the eastern part of the mine.

East of this fault zone which appears to be around 20 feet in width the veins are displaced to the south a distance measurable in tens of feet. It was not possible to obtain observations more accurately defining the amount of displacement. No exploration to pick up the veins beyond this fault zone was effected from the accessible mine workings. While the surface slopes off rather steeply to the east there would be sufficient backs over the Lower Tunnel level to make it desirable to develop these veins easterly beyond the fault zone for a distance of some 300 feet.

In the early day a vertical shaft was sunk by Yerington and Sharon two hundred feet east of the outcrop of this fault zone. Its collar is near and at the same elevation as the portal of the Middle Tunnel. This shaft is inaccessible and caved. The elder Mr. Cain of Bodie, who has known the district for many years, advises that the shaft is 500 feet deep and that considerable ore was taken from this shaft during a period fifty or sixty years ago. No detailed information could be obtained. Twenty years ago Goldfield got into a portion of this ground from their haulage tunnel level which is 230 feet below the Lower Tunnel level and 380 feet below the collar of this shaft. In their annual report for the year 1917 the following statement occurs: "A drift 35 feet above the Haulage Tunnel level connected with the old Juniata shaft, and 70 feet above in the shaft the old 200 foot level was reached. Complicated faulting was encountered in this section, so that it was not certain which of the Juniata veins has been found. A segment between east and west dipping faults was exposed for 90 feet in the old workings, width 3 feet, grade \$4.50 (gold at \$20.67 an ounce) per ton. On the hanging wall side of the east fault in the old workings, a vein is exposed for 170 feet

which has been stoped (by square setting) and filled by the early day operators for a length of 130 feet. How far to the east these workings extend is not known since they are caved and inaccessible beyond this point. This vein is 12 to 13 feet wide and has been stoped over these widths. It is the strongest vein in this section and has every appearance of persistence in both dip and strike. The condition of the old workings does not permit an accurate sampling to be made, but cuts over 10 foot widths indicate a value ranging from \$8 to \$20 (gold at \$20.67 an ounce) per ton. The stopes are filled with quartz sorted from the broken ore and samples indicate a value of \$5 gold at \$20.67 an ounce) per ton." Goldfield made no further reference to these workings and I understand they did nothing further in this part of the mine despite its apparent attractiveness. When their drainage tunnel is opened this ground could be readily explored, and it would be a practical depth to attack this eastern portion.

Farther east the surface is covered by sand and the stratified filling of what was formerly a valley which appears to have extended for a mile easterly. There is also a cap of basalt covering part of this area. Beyond this covered area and about two miles northeast in the general direction of the strike of the Juniata veins the Arm and East veins of the New Emeralds district occur. In the intervening country there are no workings or veins exposures as the surface is covered by material more recent than the age of the veins. The Juniata vein outcrops pass under this covering and the New Emeralds outcrops emerge from it. While a commercial occurrence has not been proved at the latter district, this intervening ground has prospective interest. The depth of covering does not appear to be too excessive.

Southern Segment Of Last Chance

In the early day a vein was mined by openout and at a depth of 60 feet by the Philadelphia tunnel, which opens the vein for a length of 350 feet. The vein for practical purposes has been mined out above the tunnel. Some underhand stoping occurs below the tunnel level but the presence of water just below the tunnel level prevents observing the depth of this stoping. However it does not appear to have been extensive.

Our sampling of pillars left on the tunnel level gives an average width of 3.5 feet, grade \$7.17 per ton. It is probable that the portions of the vein left by the early operators were the poorer grade.

Eastward the vein has not been developed to the Humboldt fault zone which will cut the vein in that direction and lies possibly as much as a hundred feet ahead of the

of ore is available for mining, and a development program first is required. A good approach to this vein would be from the Prospectus face of the Drainage Tunnel which is probably not over a hundred feet from this vein. It would explore the vein at a depth of around 250 feet.

Silver Lining

In my letter to you of September 17th the available data on these veins was given. I consider the probability of developing ore on this ground attractive. It appears to be the most promising ground in the district with the exception of the Junista-Martinez and extensions. In noting this exception it should be borne in mind that our data are more complete on the latter.

Eastward the Silver Lining veins continue on their strike into your Humboldt Extension No. 1 and Golden Horn No. 7 claims. A capping of rhyolite mantles the veins on these claims. In places this capping appears to be not over a few tens of feet thick. In the southwestern part of these claims it is attractive exploration to sink some shallow prospecting shafts through the rhyolite capping and do suitable cross-cutting in the underlying andesite.

Still further eastward along the indicated strike of these veins there is a basalt flow capping and a covering of sand mantling any vein continuation. Beyond this mantle and a mile and a half to the east of the Silver Lining your Hilda vein outcrops.

Hilda

No development work has been done on this vein. It is poorly exposed at the outcrop. The few samples obtainable without effecting exposures were good. It is a showing calling for development which may be affected best by a prospecting shaft sunk down on the vein at the locality of the sampling.

GENERAL CONDITIONS

The vein walls commonly are free and with well executed mining there should be no important dilution.

Present observable probabilities and possibilities, with the hazards dictated by experience, suggest a hundred ton capacity as a suitable target until more ground is accessible. While you have been fortunate in finding such

present face. Beyond this fault zone there is reason to anticipate that this vein will be found to be the faulted continuation of one of the Juniata-Martinez veins. The distance separating present faces is some 900 feet.

Westward the face has reached the Prospectus fault which is a post-mineral fault zone some one hundred feet wide and roughly parallel to the Humboldt fault. The vein carried ore up to this fault, the last sample showing a 3 foot width going \$7.88 per ton. Beyond this fault zone to the west the occurrences of the northern segment of the Last Chance, the Bell and the Russel may be the faulted continuation.

The quickest development would be an incline shaft or winze down the 50 degree dip of this vein. Driving forward the present western faces of the Lower Juniata Tunnel is approaching this Last Chance ground. As long as the Juniata-Martinez veins persist westward in ore there would be no dead work involved. The continuation of the Juniata Lower Tunnel would afford a depth of 250 feet at the Last Chance which is a satisfactory depth.

Southern Segment Of Last Chance And The Bell

These occurrences lie to the west of the Prospectus fault zone. The early timers gophered these veins to a depth of a hundred feet and are reported to have had bonanza ore. Our sampling of the pillars and unstoped portions of the veins generally gave very low results. Nine scattered samples of the forty taken were better grade - one returning \$44.10. Some of the better grade samples were of remnants of the vein left as it was cut off by a fault. The veins are rather flat (dip around 45 degrees southerly) and cut on both dip and strike by what appears to be a network of faulting. This faulting stopped the early operators in more than one direction. The displacement on some of the faults does not appear to be great - possibly not over a few tens of feet.

There is no appreciable quantity of ore in sight. The old workings are not very accessible but a competent and thorough study has a reasonable chance of outlining exploration that will pick up an ore-bearing vein.

Bird and Northern Bell

This is a narrow vein traceable for a thousand feet on the surface by the old shallow diggings. It lies to the south of the Prospectus vein and appears to be a spur of that vein. Our sampling in the surface diggings and a shallow shaft shows an average vein width of 2 feet of \$13 per ton. No quantity

Mr. A. P. Scott -10- Sept. 25, 1936

probabilities in a district considered exhausted, some of the development outlined in my letter of September 3d is called for before a capacity decision. At the Juniata-Martinez you are faced with the observed condition that grade becomes too low at a depth of 400 feet. This information is too meagre. The veins continue strong beyond this depth. Additional observation and testing are called for before setting this as a downward limit.

With 46 gallons a minute from the Drainage Tunnel and 15 gallons from the springs there is sufficient water for reasonable mill capacity.

Total costs of \$5.50 a ton on a hundred ton output should be realizable.

Sincerely yours,

AWK/S

A. W. Stickney

BRIEF MEMORANDUM

ON THE

JUNIATA-LAST CHANCE VEIN SYSTEM

IN THE

AURORA DISTRICT, MINERAL COUNTY, NEVADA

By
A. W. Stickney

LOCATION:

The Aurora District is situated in western Mineral County, Nevada, three miles east of the California-Nevada boundary line. It is 28 miles southwest of Hawthorne, Nevada, by graded dirt road. Hawthorne is 7 miles by road from the Southern Pacific railroad station at Thorne. The mining town of Bodie, California lies 10 miles to the west of Aurora. The district is an elevated semi-desert region consisting of rather gently sloping hills and ridges cut by shallow valleys. Lower points in the district are around 7200 feet above sea level and the higher 8400 feet.

HISTORY:

The gold quartz veins of Aurora were discovered in 1860 and a spectacular rush ensued. By 1864 the town of Aurora had a population of 10,000. But by 1869 the bonanza ore near the surface became exhausted and a considerable part of the population moved to Virginia City. The mines, however, continued to produce up to 1882.

The early-day records of production are incomplete, but the following quotation is from a report by the United States Bureau of Mines:

"According to the records of the Wells Fargo Company, the bullion shipped through them up to 1869 had a value of \$27,000,000. In addition, there is a record of \$2,365,969 shipped without insurance; therefore it can be safely stated that the output of the district between the years 1860 and 1869 was about \$30,000,000. This sum appears conservative if statements of production from some of the higher grade stopes are considered."

From 1910 to 1920 the Mineral Resources of the United States record a production of \$1,882,861 in gold and 123,908 ounces in silver.

The latter production came dominantly from operations of the Aurora Consolidated Mines Company on the Humboldt-Prospectus vein system from 1915 to 1917. The two roughly parallel veins of this system, which averaged around 10 feet in width and 0.25 oz. gold per ton, are separated by 30 feet of essentially barren country rock.

This company installed a 500-ton all sliming cyanide mill and mined by gloryhole and shrinkage stope the 50-foot width of veins and separating country to obtain feed for their large mill. They treated a total of 591,202 tons averaging \$3.35 per ton (gold at \$20.67 per ounce); an average daily milling rate of around 500 tons. Operating at this rate resulted in much injudicious mining and the treatment of much country rock, and the enterprise was not successful; a failure to which labor and supply difficulties of the World War period contributed. In 1918 work was stopped and the plant and equipment sold. Since then there has been little mining activity, and until last year the general atmosphere of the camp was one of neglect and decay.

HOLDINGS:

The property, held under lease by Evans, Stickney, Nell & Kingsbury, a co-partnership, from the Goldfield Consolidated Mines Company, consists of eight contiguous patented claims in the heart of the district, namely: The Juniata, Juniata Extension, Martinez, Lost Chance, Gladus, Philadelphia No. 2, and one-half of the Last Chance. These claims cover the Juniata-Last Chance vein system.

The terms of the lease call for a royalty of 10% of the assay value of the mill feed after deducting 10% for mill losses and \$2.50 a ton to cover costs of milling, marketing, etc. On \$9 mill heads, this is a royalty of 56 cents a ton. The purchase price is \$50,000 due in 1948 with no time payments. Royalty payments apply on the purchase price.

ECONOMIC GEOLOGY:

The auriferous quartz veins of this system fill fissures in Tertiary andesite and latite. They are of rather regular width, averaging around 4 feet, striking northeast-southwest, and dipping around 80° to the south in the Juniata and Martinez area, and flatten to about 45° in the Last Chance area. There are three roughly parallel veins making up this system and they are separated in the developed area by about 40 to 200 feet of country rock. The veins are persistent along the strike and are known from the development done to persist over a length of 500 feet with the drift faces still on the veins.

The veins consist predominantly of an earlier white, very fine-grained, porcelain-like quartz which shows a re-cementing after brecciation and a banding with darker streaks. These darker streaks are the richer portion and they consist of quartz, adularia, and a little very fine pyrite, chalcopyrite, galena, sphalerite, tetrahedrite, argentite, and a gold selenide but the ore is notably lacking in sulphides. A very little fine free gold occurs which is rarely visible even under a pocket lens.

A weighed composite of one hundred and fifty samples, cut on the Juniata veins during the writer's examination of the Aurora district for a client in 1936, analyzed as follows:

Au	0.263 oz./ton
Ag	1.08 oz./ton
Cu	Trace
Pb	Trace

Zn	Trace
Pb	1.40 %
S	0.11 %
Insoluble	97.52 %
Specific Gravity	2.65

In the Juniata developed area the veins are known to be displaced by two steeply dipping, nearly parallel post-mineral faults, the Juniata and the East faults, which show horizontal displacements of around 50 feet. A thousand feet to the west beyond the Juniata developed ground, the vein system is cut by the steeply dipping Humboldt fault zone with a horizontal displacement of nearly 400 feet. Five hundred feet farther west the veins are displaced by the Prospectus fault showing a horizontal displacement of 500 feet. These two latter fault zones appear to be later than the earlier rather barren quartz of the veins, but may be contemporaneous with the auriferous mineralization.

To the east beyond the Juniata mine development the country is covered by recent "lake bed" sands for a distance of one-half mile, and beyond this by a thin post-mineral basalt flow. To the west beyond the Juniata mine development and up to the Humboldt fault, there is also a sand covering over the thousand feet along the strike of the veins. Over these covered areas along the veins no prospecting nor development has been done. We consider that the indicated longitudinal extensions of the veins under these considerable covered areas afford promising ground for development. This is especially true on the western extension adjacent to the Humboldt fault zone where the small amount of development work done has shown higher grade ore. Both the Humboldt and Prospectus faults cut the Humboldt-Prospectus vein system which lies one-half mile north of and roughly parallel to the Juniata-Last Chance vein system. The better grade ore of the Humboldt and Prospectus veins occurred within two hundred feet of these faults.

At vertical depths around 350 feet in the Juniata mine the veins widen rather abruptly from 5 feet to 10 and 20 feet, calcite comes in with the quartz, and the gold content falls below 0.10 oz. per ton. Some still deeper development was affected at a depth of 500 feet below the outcrops with no improvement in gold content of the vein. This is the deepest development on veins anywhere in the district.

MINE DEVELOPMENT:

The Juniata mine development is best shown by the accompanying plan and vertical longitudinal projections. We estimate in this section around 30,000 tons of partially developed ore averaging Au 0.25 oz. and Ag 1 oz. per ton, with a width of 4.5 feet and no place less than a stoping width. Every 100 feet of longitudinal extension on the three Juniata veins with a combined width of 13 feet affords 30,000 tons to a depth of 300 feet.

Beyond the East fault in the Juniata mine the early operators did some work but their workings are caved. Late in 1917 the Aurora Consolidated Mines Company, who were operating the Humboldt-Prospectus vein system in the district, attempted to open up this part of the Juniata ground. Their manager, J. W. Hutchinson, reported as follows:

"On the hanging wall (east) side of the East fault in the old Juniata workings a vein has been exposed for 170 feet which has been stoped

by square setting and filled by the early-day operators for a length of 130 feet. How far to the east these workings extend is not known, since they are caved and inaccessible beyond this point. This vein is the strongest vein in this section and has every appearance of persistence in both dip and strike. The condition of the old workings does not permit an accurate sampling to be made, but cuts over 10-foot widths indicate a value ranging from \$8.00 to \$20.00 (gold at \$20.67 per ounce) per ton. The stopes are filled with quartz sorted from broken ore and samples indicate a value of \$5.00 per ton, and it is believed there are 10,000 tons of broken ore in fills."

They had gained access to this ground through a 30-degree incline raise and up portions of an old shaft which made work impossible until these passageways were improved. Work was started on correcting this condition when that company closed down all operations in early 1918 as previously stated.

In the Philadelphia-Last Chance (southern portion) a drift on what is tentatively considered to be No. 3 Vein of the Juniata mine, extends along the vein for 400 feet at the shallow depth of 60 feet. The vein above this drift was stoped out in the early days of the camp except for a few scattered pillars. These pillars sample Au, 0.20 oz., and Ag, 1 oz. per ton. Average width of this stoped vein perpendicular to the walls is 3.5 feet. The east face of the drift shows a width of 3.5 feet, sampling Au, 0.38 oz., and Ag, 1.4 oz. per ton, and the west face 4.2 feet with Au, 0.48 oz. and Ag, 1.2 oz. per ton. We tuned up our mill in November last on the old discarded and subsequently screened dumps of the early operators on this vein and they averaged Au, 0.23 oz. per ton.

Adjacent on the east to this Last Chance ground, the Walker shaft has developed the dragged quartz blocks along the Humboldt fault zone to a vertical depth of 80 feet. These quartz blocks are neither persistent horizontally nor vertically as they are cut off in all directions by the numerous planes making up this fault zone which is some 60 feet in width. Our sampling of these dragged quartz blocks averaged 1.5 oz. in gold per ton. This small amount of development is on a fractional claim not held by us but there is no reason to consider that similar grade ground will not be developed in our surrounding ground adjacent to this fault zone.

Farther west the early-day operators mined these veins beyond the Prospectus fault and found them the highest grade and the most productive in the district. Their work was carried down to a fault underlying that area at a depth of 100 feet. Despite this shallow depth, this ground produced the dominant part of the \$27,000,000 production of that period.

MINE AND MILL:

These are described in a separate memorandum by Mr. H. W. Evans.

ORE DRESSING TESTS:

In 1936 the American Cyanamid Company made ore dressing tests on a weighed composite of the one hundred and fifty channel samples cut from the veins of the Juniata mine workings by the writer's crew during his examination of the District for a client in 1936, with the following summarized results.

1. Fine Grinding and Cyanide Agitation. By grinding the ore (feed = Au 0.252 oz. and Ag 1.01 oz./ton) to 98% minus 150 mesh and cyaniding by agitation in an open bottle, 98.37% of the gold and 84.16% of the silver were extracted in 48 hours. The cyanidation tailings assayed 0.004 oz./ton Au and 0.16 oz./ton Ag. The consumption of cyanide was 2.98 lbs./ton of ore and the consumption of lime was 17.4 lbs./ton of ore.

2. Flotation, De-sliming and Cyanide Leaching. With a 20-minute grind (98% minus 150 mesh) 88.84% of the gold and 72.0% of the silver were recovered in a rougher flotation concentrate assaying 3.05 oz./ton Au and 9.86 oz./ton Ag; the flotation tailing assayed 0.030 oz./ton Au and 0.50 oz./ton Ag. Ratio of concentration = 13.8 to 1. These tailings were de-slimed resulting in 69.2% sands carrying 0.042 oz./ton Au and 0.51 oz./ton Ag and 30.8% slimes carrying 0.015 oz./ton Au and 0.30 oz./ton Ag. The sands were leached without agitation by percolation for 72 hours and the additional percentages of gold and silver recovered were 7.58 and 9.0 respectively. The reagents consumed were 0.29 lb. of sodium cyanide and 1.75 lbs. of lime per ton of original ore. Thus the overall recoveries of gold and silver were respectively 96.2% and 81.0%, and the composite of the slimes and the cyanide residue, representing the overall tailings, contained 0.010 oz./ton Au and 0.20 oz./ton Ag.

The rougher concentrate was cleaned by flotation and the cleaner concentrate assayed 53.91 oz./ton Au and 102.6 oz./ton Ag with an overall concentration ratio of 163 to 1.

(In our mill tune-up just before closing for the winter in November last, we obtained and shipped to the smelter a total of two cleaner concentrates as follows:

653.5 lbs. assaying 217.80 oz./ton Au and 371.75 oz./ton Ag

2795 lbs. assaying 20.15 oz./ton Au and 165.06 oz./ton Ag

The mill was not completed for de-sliming and cyaniding the flotation tails. The smelter paid us \$34.43 and \$33.90 respectively an ounce for the gold. It is probable a saving could be effected by putting such small quantities of high grade concentrates into bullion locally.)

OPERATING CONDITIONS:

The climate is delightful in the spring, summer and fall. After Christmas for three or four months in some years there is sufficient snowfall to close for intervals the four or five miles at the Aurora end of the road to Hawthorne. A caterpillar tractor would be required to keep this open in a bad winter.

There is a sparse growth of small trees of the pine family, but suitable wood for mine timber is lacking. The mine requires a minimum of timber and the drifts stand without timberings. Wide open stopes of the early-day operators still stand without timbers.

The lower workings of the Juniata mine afford 50 gallons a minute of water. Springs located a quarter of a mile and one mile east of the camp site afford 15 gallons a minute of excellent spring water - the nearer could be piped by gravity to the camp site.

The high tension 35,000-volt power line of the Mineral County Power System comes directly to the head of the mill, where it is transformed and

metered without line loss to us. Their charges are as follows:

For the first	1,000 K.W.H.	at	\$ 0.04
For the next	2,000 "	at	0.05
For the next	3,000 "	at	0.02 $\frac{1}{2}$
For the next	4,000 "	at	0.02
For the next	10,000 "	at	0.01 $\frac{1}{2}$
For all additional	"	at	0.01 $\frac{1}{4}$

There is a demand charge of \$2.00 per month per K.W. of 15-minute maximum demand. A 20% discount of total monthly bill is made for prompt payment.

Labor has to be imported.

The veins break rather clean and the walls stand well suggesting that judicious mining should keep dilution down around 10%.

ESTIMATED OPERATING COSTS:

On a 100-ton a day basis, operating costs are estimated as follows:

Development.....	\$ 0.75
Mining.....	2.00
Milling.....	1.50
Tailing loss.....	0.50
Royalty.....	0.56
Marketing, including metal price differential.....	0.50
Taxes and depreciation.....	0.54
Total.....	\$ 8.35

Respectfully submitted,

A. W. Stickle

435 Hillcrest Road
San Mateo, California

April 20, 1940

H. Wilkie Evans
265 Alameda Avenue
Atherton, Menlo Park, Calif.

January 19th, 1942

Mr. Gordon Jaeger
Fallon, Nevada

My dear Jaeger:

We are willing to 10% same as Goldfield on all ores up to \$15.00 per ton. Then 15% above this figure. And \$1.00 per ton on all outside ore. All payments to apply on purchase price of the mill.

\$1,000. down to insure us of your taking care of the plant and you to pay us for material on hand as you use it, on a monthly basis.

You to start work on or before April 1st. You to take care of all taxes starting the date you take over. Taxes have been paid to date. This is the basis for a deal. Purchase price to Goldfield \$50,000. for eight patent claims and \$80,000 to us for mill and our contract. We have in \$62,000. in cash to date Jan. 1st.

If this is satisfactory then we can sign up anytime agreeable to you and your people.

There are several people, one in Los Angeles and Gossett has someone who is interested. But first come gets the deal.

Let me hear from you in regard to when you would want to talk over any contract.

Yours truly

H. Wilkie Evans

We would consider a cash offer of \$20,000. for the mill and all machinery. There is this amount that could be sold any time. This would include 10% commission to you

JUNIATA MINE, MILL AND EQUIPMENT

By

H. W. Evans

MINE:

The Lower Adit level is our haulage level. From the portal to No. 1 Vein this is a crosscut a thousand feet long. This level is equipped with 16-lb. rails up to the face of No. 2 Vein, which is 1800 feet from the portal. A Worthington two-stage pump directly connected to a 10 H.P. motor is placed 140 feet down a winse from this level. This pump has a capacity of 75 gallons of water per minute and is connected by 1800 feet of 3-inch pipe with a storage tank on the surface above the portal. There is plenty of water.

The underground timbering has been all renewed and is in good shape.

On No. 3 Vein two steel ore chutes have been installed which take care of all the ore from the Middle Adit level. The ore is dropped through a grizzly into an open stope which has a capacity of 300 tons. A timbered raise with air and water lines and ladders extends on No. 3 Vein from the Lower Adit level to the Middle Adit level. The Middle Adit level has been opened up, retimbered, and track laid to the face on No. 3 Vein. From this level a raise on No. 3 Vein has been timbered and equipped with air and water lines up to the Upper Adit level.

From the Upper Adit level to the surface there are two old raises in good condition. An old vertical shaft extends from the surface down to within 15 feet of the present face of No. 3 Vein on this level. Water is pumped up to this level by an air pump of 10 gallons per minute capacity located on the Lower Adit level.

The mine is in excellent shape to produce ore.

It is advisable to advance the faces on No. 3 Vein on both the Upper and Middle Adit levels and block out at least 3000 feet of ore which would give six 100-foot stopes. Also a crosscut should be driven a distance of 40 feet on the Middle Adit level from No. 3 Vein to No. 2 Vein. This latter vein has never been opened up above the Lower Adit Level.

The face of No. 1 Vein on the Lower Adit level should be advanced and a raise put up with a level started at the top of this raise as the Middle Adit level does not extend into this ground.

The Lower Adit level is electrically lighted with 220 voltage and a connection has been made to the Middle Adit level. There are good roads to the portals of the three levels.

The Mine is equipped with:

- 4 - Bull bearing ore cars, 3/4 to 1-ton capacity
- 3 - Smaller ore cars on the upper levels.

- 1 - New Coehise drifting machine
- 1 - Nearly new No. 30 Ingersoll Band drifter
- 3 - Ingersoll Band jackhammers
- 6 - Air hoses and 6 water hoses
- 3 - Portable water tanks with connections for drilling
- 750 - Detachable bits
- 4 - Sets of 1-inch steel
- 3 - " " 7/8 " "
- 5 - Tons of 12-lb. rails

I would say that we require two additional ore cars and two stopers, costing approximately \$1800.

Miscellaneous equipment on hand consists of a 1 1/2-ton G.M.C. pick-up truck, model 1939, bought new last year and in good condition; and a model 1935 Ford 1 1/2-ton dump truck, bought second-hand but in good condition. There is also a 15 H.P. electric driven saw for cutting mine timbers.

MILLING:

All foundations are reinforced with steel and rails and over 800 bags of cement were used. The building is constructed with 8" x 8" timbers with 2" x 6" studding and covered with 28-gauge galvanized iron with plenty of windows and doors. All floors are cement with covered drain down the center. The mill building is 100 feet long by 35 feet wide. Under the same roof is a 250-ton ore bin 20' x 20' and 14' deep.

Two 16-lb. rail tracks lead from the Lower Adit tunnel over a 3000-lb. scale to a 6' grizzly set 1" at the head of the mill. The oversize is crushed in a No. 30 Straub fine-grinding crusher, with capacity 6 tons per hour to 1/4 inch mesh. A 25 H.P. Westinghouse motor drives this crusher through a Tex-belt drive. This crusher sets on top of a 250-ton ore bin. The ore from the bin feeds through two ore chutes at the bottom onto a 20' x 14" conveyor belt driven by individual 2 H.P. motor at a speed of one foot per second. This belt feeds into a 5' x 4' Binco ball mill with special new Super-Molychrome liners, which is driven by a 75 H.P. General Electric motor through seven Tex-rope drives at a speed of 27 R.P.M.

The oversize from revolving screen at end of ball mill goes to a Sub A Denver cell, and reject to classifier. Undersize from screen goes direct to classifier which is 14' x 4' Duplex classifier driven by 3 H.P. General Electric motor. Oversize from classifier back to ball mill and less than 80-mesh to a 6' x 6' conditioning tank with a 3 H.P. motor agitator.

The roughers consist of 6 Pan American flotation cells driven by three H.P. motors. The overflow from the roughers goes to two Pan American cleaning cells. Tailings from the roughers to a Wilfley table. The overflow from the cleaning cells is pumped by a 2-inch Kimball-Krogh pump to thickeners. Tailings from the cleaning cells are pumped by 2-inch Kimball-Krogh pump back to conditioning tank. The pumps are directly connected to 3 H.P. motors. The thickener is a Dorr, 11' x 11', with mechanism and steel super structure drive by 3 H.P. motor. An American three-disc filter driven by a 3 H.P. reduction motor. The vacuum pump and compressor are driven by a 25 H.P. motor.

The Wilfley table is driven by a 5 H.P. motor. Concentrates from this table were pumped back to the conditioning tank by a 2-inch Wilfley pump with a 3 H.P. motor.

The mill is completely electric lighted and the machinery is in first class condition. Each unit is individually driven by electric motors. Its capacity is approximately 60 tons per 24 hours and can be raised to 90 or 100 tons by addition of another ball mill on the opposite side of the classifier where ample room has been reserved.

The following improvements should be made to the mill:

A vibrating screen with 3/4-inch openings instead of the grizzly. The conveyor belt should be slowed down to a speed of one-half foot per second. There should be a screw feed installed from the classifier to the ball mill, and also a new 36-inch drum feeder on the ball mill. Instead of the Denver Sub A cell, a jig should be installed. Then, if advisable, the two cleaning cells can be placed ahead of the rougher cells and the Sub A cell used as a cleaning cell. The Wilfley table is to be used only as a check on the tailings.

These improvements would not cost more than \$1500, as the vibrating screen would not be necessary until the capacity of the mill was increased.

The Machine Shop is a 20' x 16' building with power-driven lathe, saw and drill press. There is a welding outfit and three sets of pipe dies from 1/8-inch to 3-inch -- bolt threads from 1/8-inch to 1 1/2-inch inclusive. On hand there is a good supply of sheet iron, bolts, nuts, etc.

Adjoining the machine shop is a Blacksmith Shop 16' x 15' with a large Ingersoll Rand bit grinder and all necessary equipment.

In the Compressor Room there is the Sullivan V-type 480 cu. ft. compressor driven by a 75 H.P. General Electric motor through Dayton cog belt drive. From the 12' x 6' air compressor a 4-inch pipe line extends into the mine 1000 feet; then 500 feet of 3-inch pipe line, followed by a 2-inch line.

The Assay Office has three rooms, which is equipped with power crusher, pulverizer, oil furnace, and complete assaying outfit.

The Office is a single-room 12' x 15' building.

There are fire hydrants and hoses in the mill and in front of each building.

I would say we have around \$5,000 worth of supplies on hand, including five tons of 2 1/2 to 5 inch balls for the ball mill, chemicals and oils for the mill, assaying supplies, etc.

Atherton, California
April 20, 1940

H. Wilkie Evans

NOTE: San Francisco 5/18/42. Evans informed Chesser in Palace Hotel as follows: That Hy Werner shipped \$12.50 ore from dump on Russell claim. That Juniata ore shoot was over 450' long extending 450' east of east fault according to what the old timer told him. Evans says that there is another fault cutting across near portal of Juniata Lower Tunnel. That McKeough located the frection near Philadelphia (north side) from him and that he paid McKeough for making location and that location is now forfeited because work was not done.

JUNIATA MINE ORE ESTIMATE

NOTE: These data were taken from calculations recorded and evidently made by KINGSBURY. Found by HEC in the metal letter file in the office at Juniata mine. The map (tracing) evidently made by or from Spurr's survey prior to 1914 was with these notes. HEC 5/14/42.

PHILADELPHIA (UPPER) TUNNEL (LAST CHANGE HILL)

From 12 assays, the weighted average is calculated at \$7.17 and the average width is 3.5 feet.

JUNIATA LOWER TO UPPER LEVELS, VEIN NO. 3. (WESTERN PART)

From 37 samples taken by Stickney in the west part of Vein No. 3 in this lower tunnel, the average width is 3.64 feet and the weighted average value is \$10.95. Length represented by these samples is 100 feet.

JUNIATA LOWER LEVEL, VEIN NO. 3 (EASTERN PART)

From 13 samples taken by Stickney in the eastern part of Vein No. 3 in this tunnel, the average width is 4 feet and the weighted average value is \$5.58 per ton. This represents a length of 100 feet.

JUNIATA MIDDLE LEVEL, VEIN NO. 3

From 27 samples shown on the alleged Spurr tracing (first above mentioned) the average width of the ore for 150 feet in length (western end) of Vein No. 3 on this level, is 3.5 feet and the weighted average of the old price is \$3.26. By assuming that the old price represented only gold at \$20.67, the present price at \$35.00 would equal \$5.60.

JUNIATA MIDDLE LEVEL, VEIN NO. 3 (EASTERN PORTION)

From 9 samples evidently taken by Stickney, the average width is 3.72 feet and the weighted average value is \$5.80. This represents a length of 120 feet.

JUNIATA LOWER LEVEL, VEIN NO. 2

From 21 samples taken by Stickney, for a length of 200 feet, the average width is 4.77 feet and the weighted average value is \$8.89.

JUNIATA RAISE FROM LOWER TO MIDDLE LEVEL, VEIN NO. 2

From 5 samples taken by Stickney the average width is 5.1 feet and the average distance of raise covered by these samples is 100 feet and the weighted value is \$7.44.

JUNIATA LOWER LEVEL, VEIN NO. 1 (WEST OF X-CUT)

From 24 samples evidently taken by or for Spurr (see note first above) the average width is 3.7 feet and the weighted value is \$5.04 at old price. By assuming it represented only gold at \$20.67, the gold content would be 0.25 oz. Au, equal to \$8.75 at current price. (There is no assurance that the Spurr tracing assay map represents only gold at \$20.67. It might include silver which was around 55 cents per ounce at that time, 1914.)

JUNIATA LOWER LEVEL, VEIN NO. 1 (EAST OF X-CUT)

From 65 samples evidently taken by or for Spurr (see note first above) the average width is 3.91 feet and the weighted average value is \$5.58 at old price. By assuming that the \$5.58 old price was all gold at \$20.67 per oz., the current price at \$35.00 for gold would be \$9.41. (There is no assurance that Spurr's tracing assay map represents only gold at \$20.67. It might have included silver which was around 55 cents per ounce at that time, 1914.)

JUNIATA MIDDLE LEVEL, VEIN NO. 1

From 20 samples taken by or for Spurr (see note first above) the average width is 3.5 feet and the weighted average value is \$3.63 at old price. By assuming that Spurr only used the gold values at \$20.67 per ounce, then the current value at \$35.00 gold would be \$6.14 for a length of 125 feet along Vein No. 1 in Middle Tunnel.

JUNIATA RAISE FROM INTERMEDIATE TO LOWER TUNNEL LEVELS; Vein No. 1.

From 10 samples taken by Stickney in this raise, representing a distance of 100 feet vertically on the ore shoot, the average width is 5 feet and the weighted average value is \$10.33.

JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1

From 10 samples taken by Stickney for a distance or length of 150 feet along this ore shoot, the average width is 4.45 feet and the weighted average value is \$2.95. (This apparently is 25 feet below the commercial ore zone judging by the results of the sampling done in the raise next above described.)

JUNIATA DRAINAGE LEVEL (HUMBOLDT DRAINAGE) VEIN NO. 1

From 37 samples taken in the drainage tunnel (below the Intermediate level) the average (weighted) of values at old gold price is \$1.02 and it is assumed that these were only gold and evidently were taken by the engineers for Goldfield Consolidated. The results indicate that they were calculated at the \$20.00 gold, hence present value would be \$1.75. No distance or width stated. Don't know where these results came from but would like to obtain the map from which the information was collected.

JUNIATA PROBABLE TONNAGE
(Additional Data by HBC)

NO. 1 VEIN

			<u>Value</u>
<u>100' below Juniata Lower Tunnel</u>			
Length 400' x Diameter 100' x Width 4'...	160,000 cu.ft...	12,300 tons	\$ 9.50
<u>Above Juniata Middle Tunnel at West End</u>			
Length 100' x Diameter 150' x Width 4'...	90,000 cu.ft...	7,000 tons	\$ 6.14

NO. 2 VEIN

<u>50' below Juniata Lower Tunnel</u>			
Length 200' x Diameter 50' x Width 4.76'...	47,500 cu.ft...	3,600 tons	\$ 8.90
<u>Above Juniata Middle Tunnel</u>			
Length 200' x Diameter 200' x Width 5'...	15,400 cu.ft...	15,400 tons	\$ 8.20

NO. 3 VEIN

<u>Between Juniata Middle and Lower Levels at East End</u>			
Length 160' x Diameter 100' x Width 3.8'...	60,800 cu.ft...	4,700 tons	\$ 4.50
<u>From Lower Juniata Tunnel to Upper Tunnel at West</u>			
Length 100' x Diameter 200' x Width 3.5'...	70,000 cu.ft...	5,400 tons	\$10.90
Total.....			48,400 tons \$ 8.25

WEIGHTED AVERAGE
(By HBC)

12,300 x \$9.50	\$116,850.00
7,000 x 6.14	42,980.00
3,600 x 8.90	32,040.00
15,400 x 8.20	126,280.00
4,700 x 4.50	21,150.00
5,400 x 10.90	58,860.00
<u>48,400</u>	<u>\$398,200.00</u>

$$\frac{\$398,200}{48,400} = \$ 8.25 \text{ per ton.}$$

AURORA (ESMERALDA) DISTRICT, MINERAL COUNTY, NEVADA.

LOCATION AND ACCESSIBILITY.

The old Esmeralda mining district at Aurora, Nev. (No. 14, Pl. I, p. 18), is 28 miles in an air line southwest of Thome, a town on the Hagen-Tenopah branch of the Southern Pacific and its nearest railroad point. The town of Aurora is 3 miles east of the California-Nevada boundary, 18 miles north of Mono lake and $1\frac{1}{2}$ miles east of Bodie Canyon. The region is shown near the center of the west side of the Hawthorne topographic sheet of the United States Geological Survey.

The district is most easily reached by the automobile stage which runs daily between Hawthorne, Nev., and Bodie, Cal. It is possible to enter this part of Nevada by way of Minden, the southern terminus of the Virginia & Truckee Railway. Stages operate between that town and Wellington and thence south to Bodie, Cal., but the trip requires three days in contrast to the half-day run from Hawthorne.

HISTORY AND PRODUCTION.

The Old Esmeralda, near the southern limit of the productive area (see Pl. XVI, A, p. 148), was the first vein discovered in the Aurora district. According to Wasson, (Wasson, Joseph, Bodie and Esmeralda: a pamphlet published in 1878 by the Mining and Scientific Press, San Francisco, Cal.) James M. Brawley, J. M. Cory, and E. R. Hicks made the discovery on August 22, 1860, and immediately located four claims. The town of Esmeralda was built in the gulch just east of the discovery, but later in the year the present town site of Aurora, $1\frac{1}{2}$ miles north, was laid out. The first mill, owned by Edmund Green, was put in operation in 1861, and was followed shortly by several arrastres and mills. In 1864 there were 17 amalgamation mills in the district, the largest, which had 30 stamps, being the Real Del Monte in Bodie Canyon. Up to the year 1864 the camp was very prosperous. Aurora had a population of about 10,000 and was the county seat of Mono County, Cal. During the year 1864, however, misfortunes befell the camp. The California-Nevada boundary was run and showed that the Esmeralda district lay in Nevada; the rich bonanzas in the Wide West vein on Last Chance Hill became exhausted and bitter litigation over the ownership of the veins on Last Chance Hill developed. The camp, however, continued to prosper until 1882, though the supply of \$75.00 ore, which in earlier times could not be mined, was then becoming depleted. In 1880 an English company acquired possession of the main group of claims on Last Chance Hill. It began operations in 1887, starting the Real Del Monte shaft and connections with the Durant vein on Middle Hill, but suspended work in 1892 after a vain effort to keep the lower workings of the 800-foot shaft free from water.

Most of the claims in the Esmeralda district were owned in July, 1913, by two companies, the Cain Consolidated Co. and the Aurora Mines Co. The Aurora Mines Co.'s chief group, containing 11 claims, lies on Silver Hill, though they own 5 claims on Aurora Hill. The Cain Consolidated Co. controls about 40 claims, among which are some of the famous producers of the district. In the summer of 1912 these holdings were under option to certain financiers of Tenopah, Nev., who have, according to reports of the mining journals, taken up the ground and started operations.

Most of the productive ground of the district has now been acquired by the Goldfield Consolidated Mining Co. A 500-ton cyanide mill has been built, and there is every prospect that Aurora will again be a producing camp.

The records of production are incomplete. According to a statement of Wells, Fargo & Co., the bullion shipped through them up to 1869 had a value of \$27,000,000. Mr. Wasson (Wasson, Joseph, op. cit.) gives the following table of gold bullion shipped without insurance:

Bullion shipped from Aurora without insurance from 1861 to 1869, inc.

1861.....	\$ 43,417.28	1866.....	\$ 159,162.77
1862.....	173,148.82	1867.....	130,656.89
1863.....	546,019.16	1868.....	98,129.89
1864.....	952,025.29	1869.....	28,166.50
1865.....	257,195.25		<u>\$2,565,968.82</u>

He further says that between seven and eight million dollars' worth of bullion was shipped by express in 1864 and about \$12,000,000 prior to the year 1869. If the reports of production of some of the stopes are taken into consideration, even so large a sum as \$27,000,000 seems a small showing for the camp.

TOPOGRAPHY.

There are four rather low hills south and east of the town of Aurora (see Pl. XIV), known as Silver, Middle, Last Chance, and Humboldt. The town has an elevation of 7,415 feet above sea level. Silver and Middle hills are separated by Emerald Gulch. They are long, northward-sloping spurs from the Brawley Peaks, which rise to a height of 9,557 feet about 2½ miles south of the town. Last Chance Hill, east of Aurora, is a low divide, less than 150 feet above the valley, which separates Willow Creek from the Gregory Flat drainage basin. Humboldt Hill, a low rounded knob about three-fourths of a mile northeast of Aurora, rises to a height of little over 7,800 feet. The mines of the Aurora district are located on these four hills, though at the east end of the flat north of town and about 150 feet higher there are a few veins near Humboldt and Last Chance Hills.

GEOLOGY.

Character and Distribution of the Rocks.

The rocks exposed in the Emerald district are, with a single exception, of volcanic origin. In the bottom of Willow Gulch, about 2 miles southwest of Aurora (see Pl. XIV), there is a small indistinct exposure of a rock that appears to be the basement on which the flows were extruded. It is a coarsely porphyritic, granular rock, and is probably to be correlated with the granodiorite and associated rocks of the Sierra Nevada. At least three series of flows overlie this granular rock. The oldest of these flows consists of grayish-green altered rocks that are largely biotite-quartz latites, together with some andesites. This series is exposed on Silver, Middle, Last Chance, and Humboldt hills, and extends southeast up Willow Gulch for an unknown distance. These rocks, which are at least 200 feet thick, inclosed all the veins of the district, none being found in the younger rocks.

Above these flows of intermediate chemical composition lies a series of light-gray to brownish-gray rhyolites that are particularly well exposed on the flats north and northwest of Aurora along Bodie Creek, where they are 1,000 feet thick, and also on Granite Mountain, about 1 mile southeast of town, where there is a remnant of the series about 300 feet thick. Above both the andesites and rhyolites lies a black vesicular basalt that forms Aurora Crater (see Pl. XIV) and covers a large expanse of country to the west of Granite Mountain. It ranges from about 10 to over 600 feet in thickness. Its weathered surfaces are brown.

All these flows appear to have a gentle dip to the north-northwest. It seems probable that there was a time of erosion between the andesite and rhyolite eruptions, as the rhyolite flows rest on an uneven surface that looks like an erosion surface.

There was unquestionably an interval of considerable length between the rhyolite and basalt eruptions, for the base of the later flows rests in the bottoms of gulches in some places and on the tops of ridges at other places.

The latites and associated andesites seem to have been exposed by the erosion of the capping rhyolite along the Willow Creek drainage basin, and Granite Mountain seems to be a remnant of this capping which escaped erosion. It does not seem probable that the basalt ever extended much beyond its present limits, as shown on Plate XIV, for the edges of the flows are fresh and in some places along the gulch northeast of Gregory Flats shows the piled-up, overturned marginal portions of quickly cooled lava sheets.

Topographic Expression of the Different Rocks.

The oldest flow rocks are all much altered and are rather easily eroded, except where they have been silicified near the veins. As a consequence the mineralized hills have, as a rule, even and rather gentle slopes, as is shown in the view of Last Chance Hill (Pl. XV). At the southern edge of Silver Hill, where the rock is much silicified near the Bald Eagle, Spotted Tiger, and Radical veins, the generally smooth andesite surfaces are interrupted by steep cliffs, as shown in Plate XVI, A.

The rhyolite series weathers in rough cliffs and the surfaces of the flows are marked by small steep-sided gullies. On the long ridge northwest of Aurora, near Bodie Creek, the topography suggests the badland forms at many points, especially on the northeast side of the ridge.

The surface of the basalt flows is very rough, making the crossing of these areas difficult, even on foot. Aurora Crater is a basaltic vent, the northwest rim of which has been cut through by erosion. It is a beautiful example of a small volcano, with the successive flows clearly traceable on its rough scarred sides.

PETROGRAPHY.

Porphyritic granite.—The single exposure of porphyritic granite in the district lies in the bottom of Willow Gulch, about $1\frac{1}{2}$ miles southwest of Aurora. Its boundaries are not well shown on account of the wash, but the andesitic flows clearly rest on this basement. The outcrop is small and deeply weathered, practically no fresh rock being visible. Numerous large pink orthoclase crystals, the maximum length being 2 inches, are present in the residual sand covering part of the area. The weathered surfaces have a light greenish-gray color, owing to the alteration of the constituents. The

rock is rather coarsely granular throughout and contains very large, zonally built, pink orthoclase phenocrysts.

In thin sections the groundmass of this coarse porphyry is seen to be inequigranular. None of the minerals, except the phenocrysts and accessory minerals, show any form of crystal. The minerals present in this rock, named in the order of their abundance, are orthoclase, quartz, microperthite, green hornblende, brown biotite, microcline, muscovite, and oligoclase. The accessory minerals are titanite, magnetite, and apatite. The ferromagnesian minerals are somewhat chloritized, and the feldspars are more or less kaolinized. Some of the muscovite appears to be primary, but part, at least, is bleached biotite. The titanite and magnetite are closely associated and intergrowths of these two minerals are common.

Biotite-quartz latite.—The general country rock on the hills in the vicinity of Aurora, in which the veins are found, is greenish-gray to gray altered porphyry which ranges from rather fine to medium grain. Few of the phenocrysts are more than an eighth of an inch in diameter, and most of them are less. The most widely distributed type of rock has a fine-grained greenish-gray groundmass, thickly studded with small white lath-shaped phenocrysts. All the rock of this type carries some disseminated pyrite, which is particularly abundant near the veins.

The thin sections show that this rock originally consisted of phenocrysts of andesine, biotite, and possibly pyroxene, set in a fine-grained matrix of andesine, with some ferromagnesian minerals. Small interstices of the groundmass contain intergrowths of quartz and orthoclase. The rock is biotite-quartz latite. All the rocks are very much altered, presumably by the hot calcareous solutions which deposited the veins. The andesine phenocrysts are altered to calcite, sericite, some quartz, and some of them show a little green epidote. The ferromagnesian minerals are completely altered to chlorite and some magnetite. The groundmass is altered to an aggregate of sericite, chlorite, and quartz. Near the veins the alteration has been much more intense than at a distance of 150 to 200 feet from them. In these highly altered zones quartz has been added to the body of the rock, which is also cut by stringers of quartz and calcite. Sericite and epidote are also much more abundant in the rock near the veins, whereas chlorite is more commonly developed in the rock at a distance from the veins.

Andesite.—Near the bottom of Emerald Gulch, 1 mile south of Aurora, there is a fine-grained light-green porphyry apparently intrusive into the biotite-quartz latite, though it may be an underlying flow. This fine-grained dark rock is exposed in several other localities in the district, and it is probably rather widespread in distribution.

This rock is much altered and contains disseminated pyrite in small quantities and is cut by quartz and calcite stringers.

Thin sections of this rock show that its groundmass is composed of microscopic lath-shaped crystals of andesine and augite, the latter mineral altered to chlorite. In this groundmass are set small well-developed phenocrysts of zonally built andesine and of augite, both of which are altered, the augite to green chlorite and feldspars to grayish aggregates of sericite and chlorite.

Rhyolites.—The rhyolite series is made up of a number of relatively thin flows, all of which are glassy. They range in color from gray through green to purple. Some of them appear to be tuffaceous, but the majority

are typical flow rhyolites. On the flat north of Aurora some pearl-gray perlitic rhyolites are seen near the top of the series. Flakes of biotite are seen in all of these rocks, and quartz can usually be detected with the unaided eye. Thin sections show that the rock consists of a glassy base having, as a rule, distinct flow structure, which contains a few phenocrysts of quartz, orthoclase, and biotite. Some of the slides show that the groundmass suffered some devitrification, accompanied by the development of chlorite and sericite.

About one-fourth of a mile southeast of the Old Esmeralda Tunnel a small, indistinct body of rhyolite has been altered to a soft white mass by hydrothermal action, but the flows at other places show no alteration by hot waters.

Basalt.—The basalt of Aurora Crater is a very fresh vesicular black rock showing a few small green olivine crystals to the unaided eye. Under the microscope the groundmass is seen to be composed of microscopic labradorite laths and grains of nearly colorless augite set in a black glass paste. The flow structure is well shown by the rough parallel orientation of the long dimensions of the plagioclase laths, many of which bend around the vesicular openings.

QUATERNARY GRAVELS.

The quaternary deposits on lower Bodie Creek, shown at the top of Plate XIV, consist of unconsolidated sands, gravels, and silts, which a little north of the area shown on the map are quite thick and extensive. The surface is covered by fine sandy loam, which under irrigation has produced excellent crops.

On Last Chance Hill there is a small area underlain by roughly stratified volcanic material, shown in the caved Chinle step. (See Pl. XVI, B, p. 148.) This material ranges from a few feet to a maximum of 20 feet in thickness and appears to have been reworked by streams.

In the canyon northwest of Gregory Flats and about $1\frac{1}{2}$ miles due north of Aurora a warm spring issues from beneath the basalt of Aurora Crater. This spring deposits limonite and aragonite. The aragonite forms crusts from one-fourth inch to 4 inches in thickness, though most of the crusts are less than 2 inches thick. The entire deposit covers an area about 150 square feet to a maximum depth of 15 feet.

ORE DEPOSITS.

Distribution of the veins.—The ore deposits of the Esmeralda district occur as veins that cut the biotite-quartz latite and associated andesite over an area extending in a northeast-southwest direction, about 2 miles in length by $1\frac{1}{2}$ miles in width. Aurora is near the center of the northwest side of the productive area. On Silver and Middle hills the veins are rather closely spaced and have, with one exception, a persistent strike of about N. 45° E., though strikes between N. 40° E. and N. 50° E. are seen in many places, even along veins whose average course is N. 45° E. These veins all dip to the southeast but at different angles. The largest and apparently the strongest veins—that is, the Burma, the Antelope and Lady Jane, the Cortez and Utah, and the Spotted Tiger and Bald Eagle veins—all dip between 45° and 60° SE. into the hill, but some of the smaller veins slope southeast at much flatter angles. An exceptional vein system on Silver Hill is represented by the Old Esmeralda and Radical veins, which strike about

N. 10° E. and stand nearly vertical. The outcrops of these veins are wider than any of the northeast-southwest system, the Old Esmeralda being 60 feet wide and the Radical between 20 and 30 feet in maximum width.

On Last Chance and Humboldt hills the veins strike more nearly east and west, ranging between N. 60° E. and N. 80° E., and with the exception of the Humboldt and Prospectus veins, which dip 80° E., they dip to the west-southwest at angles ranging between 65° and 75° . Some of the smaller veins have flatter dips, but the strong, well-defined ones stand more nearly vertical. The veins on these two hills have been displaced by a nearly vertical fault, whose strike ranges from N. 20° E. at the Humboldt vein to N. 30° W. at the Real Del Monte vein. The horizontal displacement along this fault has amounted to over 600 feet, the veins west of the fault being at least that far north of their continuation on the eastern side. Thus the Humboldt vein on the east side of the fault along the crest of Humboldt Hill is the Prospectus west of the fault. (See Pl. XIV, p. 142.)

It is said that about 6 miles northeast of Aurora lies a small area of andesite in which there are some veins, but the locality was not visited.

Character of the veins.—The veins of the Esmeralda district range from a fraction of an inch to 70 or even 80 feet in width. They are as a rule between 18 inches and 4 feet wide, and can generally be traced for several hundred feet along the strike. They are not simple, clean-cut veins, but send off numerous small interlacing branches into the walls, particularly on the footwall side. This tendency of the veins is well seen on the edge of the old Chihuahua stope on Last Chance Hill. (See Pl. XVI, B.)

Along some of the veins there has been postmineral movement. This movement has usually taken place along the hanging wall and has been slight, producing in most places a thin clay parting between the country rock and quartz.

The veins consist in great part of finely granular, white, barren-looking quartz. In some places the quartz is so fine grained that it has a milky-white porcelain-like appearance. The veins are banded by crustification, the different bands being due to the difference in size of the quartz grains. In all the veins there are small druses lined with minute clear quartz crystals. The rich ore is always marked by irregular wavy streaks of what appears to be dark quartz, cutting the white-lowgrade and barren vein filling. (See Pl. XVII, A.) In reality these rich streaks are made up of quartz, adularia, argentiferous tetrahedrite, and small amounts of pyrite and chalcopyrite, together with a soft bluish-gray mineral supposed to be a combination of gold and possibly silver with selenium. Some free gold is found here and there in the richest ore now mined, and the old stopes are said to have contained large quantities of free gold.

The adularia is notably absent from most of the white barren quartz, but was found in soft, narrow kaolinized bands in white quartz ore from the Humboldt shaft. In practically every thin section of the ores studied there is a small amount of sericite in thin flakes cutting the quartz crystals. In all the thin sections of very rich ore adularia is abundant, being associated with the quartz and commonly inclosed in the interlocking quartz grains. As a rule the rhombic forms of adularia are not seen, the mineral occurring in irregular masses.

Qualitative tests of a small piece of rich ore from the 350-foot level of the Durant vein at Aurora show the presence of selenium but no tellurium. It also contains a rather large quantity of iron and copper, smaller quantities of silver and gold, and some antimony. A polished section and thin section of this ore show the undoubted presence of pyrite, chalcopyrite, tetrahedrite, and free gold. There is also a small quantity of a soft bluish-gray mineral, that is distinct from the tetrahedrite, which is thought to be a selenium-gold and possibly silver compound. This mineral occurs in minute specks and could not be separated from the other constituents.

The presence of selenium without tellurium sets these veins apart, for there are only a very few mining districts in the United States where this combination of ores is found.

Spurr (Spurr, J. B., *Geology of the Tonopah mining district, Nev.*; U.S. Geol. Survey Prof. Paper 42, pp-73-104, 1905) says that at Tonopah the veins are chiefly due to replacement of the andesite by quartz and the ore minerals along zones of fracture. Crustified veins clearly due to filling of open spaces are exceptional at Tonopah. The mineralizing agent he considers to be "volcanic waters that were hot and ascending". The primary ores at Tonopah, according to Spurr, contained quartz, adularia, carbonates of lime, iron, magnesia and manganese, silver sulphite, probably polybasite or stephanite, and argentite, silver chloride, chalcopyrite, pyrite, galena, sphalerite, and gold in an undetermined form, and silver selenide.

At Republic the veins which seem to bear more resemblance to those at Aurora, according to Umpleby, (Umpleby, J. B., *Geology and ore deposits of the Republic mining district*; Washington Geol. Survey Bull. 1, p. 37, 1910) occur along fissure fillings that have an average width of 3½ feet. The unaltered vein material is a firm white quartz with wavy ribbons of a bluish-gray cast. The veins are made up of quartz, chalcedony, opal, calcite, and adularia, carrying inconspicuous amounts of pyrite and chalcoprite, with silver and possibly gold, in association with antimony, sulphur, and selenium. The most striking feature of the Republic ores is the extremely barren appearance of the quartz. Fluorite was noted in the slides. The silver is thought to be partly in the form of silver selenide and partly as a component of gray copper. Some gold is free, but most of it probably combined with selenium and tellurium.

Lindgren (Bancroft, Howland, *The ore deposits of northeastern Washington*; U.S. Geol. Survey Bull. 550, 1914) says of the Republic veins that the banding is due to the difference in size of the quartz grains; that the ore minerals occur in extremely fine distribution in thin black streaks, generally near the walls. In the rich portion of the veins tetrahedrite and chalcopyrite have been identified, but the principal ore mineral, presumably a selenide of gold and silver, occurs in such fine distribution that it has not yet been isolated.

As it was impossible, on account of the condition of most of the mine workings, to study the veins at Aurora at depth, a satisfactory understanding of the distribution of the good and poor ore was not reached during this reconnaissance. From what could be learned, however, it would seem that the rich ore occurred in relatively small shoots in the large barren veins. There were five such shoots, which were exceptionally large on the Wide West vein on Last Chance hill.

In the majority of the veins it is understood that the rich ore streaks, ranging from a fraction of an inch to 6 inches in width, were as a rule found

near the walls, particularly the hanging wall, and that they were not continuous along the veins for any considerable distance. It is almost certain, however, that the barren-looking white quartz, where it shows even a slight suggestion of the bluish color, carries gold.

The veins are said to have been in general considerably wider in the richer portions. This was particularly the case on the Wide West vein, where some of the stopes were as much as 50 feet wide, though the leaner portion of the vein between the stopes ranged from 6 to 10 feet in width.

As only the surface workings and outcrops of these deposits could be studied it is not possible to give detailed descriptions of the veins.

Tenor of the ore.—The average ore from any vein is probably of low grade. Ore which is taken from rich shoots may run up to \$1,000 a ton. The average gross value of the ore is reported to be about \$6 to \$8 a ton, the ratio of gold to silver being 1 to 2 or 1 to 5. It is said that in the ore mined in the early days from the rich stopes on Last Chance Hill the ratio of gold to silver was as 4 to 2.

Origin of the veins.—The veins of the Esmeralda district were formed in open fissures by hot ascending, very siliceous solutions. These solutions were capable of altering the enclosing biotite-quartz latite for considerable distances from the veins. In one or two small veins cut by the Monarch tunnel on Silver Hill the quartz shows the typical form of replacement after calcite, common to the quartz-actinolite type of veins (Pl. XVII, B.) Pure white calcite was found on the dump of the Humboldt shaft that was said to come from the 450-foot level, though none was found above the 100-foot level in the mine. This ore seems to show that calcite was deposited before the quartz, which appears to replace the carbonate. It is questionable, however, if any considerable time intervened between the deposition of the calcite and the entrance of the silica-bearing solutions. Certainly in most of the ore there is little suggestion that the quartz is secondary after calcite, except that none of the quartz shows the crystal forms of this mineral usually seen where it is deposited alone in open fissures.

The age of the formation of these veins is not certainly known, though they were formed after the eruption of the biotite-quartz latite and associated andesite and before the succeeding flows of rhyolite. It is probable that they are representatives of the late Tertiary mineralization common to the Great Basin region.

(Copied from pages 141 to 150 inc., of USGS Bulletin No. 594 by James M. Hill, 1915.)

REPORT OF THE AURORA DISTRICT

Mineral County, Nevada

by

J. H. FARRELL

August, 1934

-000-

SUMMARY ON THE AURORA DISTRICT

The Aurora, or Emerald, District is in Mineral County, Nevada, close to the California line. The nearest railroad station, Thorne, on the Southern Pacific branch line to Tonopah, is 37 miles to the northeast.

Discovery was made in 1860 and the district made most of its production in 1863 and the two following years, when it started to decline and after 1869 was nearly deserted for many years. The "bonanza" period production has been variously estimated at from \$12,000,000 to \$27,000,000, the latter figure, given in a bulletin of the U. S. Geological Survey, seems incredible in view of the nature of the mine workings. However, it is certain most of the output was from a small tonnage of high grade ore averaging over \$100 per ton in gold and silver, chiefly the former.

From 1915 to 1918 the Aurora Consolidated Mines Co., produced \$1,842,452 from ore averaging about \$3.50 per ton. This was a marginal operation and high prices in 1918 closed it.

The productive area is about two miles by one and one half miles in extent. Fourteen major veins and a large number of smaller ones, are found in latite and andesite porphyry, a volcanic flow or series known to be at least 900 feet in depth. This formation is covered and surrounded by later rhyolite and basalt flows away from the Aurora area.

The veins range in width from a few inches to 60 feet, and many of them may be followed on outcrop for several thousand feet. Quartz is the chief vein mineral, and gold occurs in ratio varying from 1:2 to 1:40 by weight to silver, the only other metal of importance. Most of the veins strike northeasterly and incline to the south with dips ranging from 25 degrees to vertical, in some localities dips are steep to the north.

One strong fault, with many minor slips, is known to cut the important veins of the north half of the district, and in the old workings stopes are often seen to be cut by faults.

Early mining was unsystematic and consisted in following ore shoots from outcrop until they pinched or were faulted. Very little "dead work" was done in crosscutting or looking for faulted extensions, and it is believed that detailed study of the veins and fault system will result in finding new orebodies, provided reasonable expenditures are made for short crosscuts and extensions of drifts in the vicinity of the old high grade stopes.

It seems possible that large tonnages of low grade ore workable at present metal prices, will be found in the larger veins, also in certain areas of general mineralization which may be readily explored by surface work and crosscuts from old tunnels. Such ore may be mined very cheaply by open pit methods without any costly preparatory work.

The Humboldt vein was the source of most of the ore mined by the Aurora Consolidated. It was stoped for widths of 20 to 50 feet, over a length of about 800 feet, and from surface to between the 300 and 400 foot levels. Based on old estimates, there would appear to be something over 60,000 tons of ore left above the haulage tunnel level, averaging from 0.15 to 0.17 ounces gold per ton. The tonnage may be considerably increased marginal to the old stopes and in stope extensions, in view of present metal prices, but nothing is known at present as to the details of location and availability of this ore.

There is no mining or milling equipment available in the district, but there is an electric power line to the camp, water may be obtained from several nearby sources, and much preparatory work may be obviated by use of the old workings, so that any expenditure in the future may go directly into productive work.

GENERAL RECOMMENDATIONS.

It is impossible to make detailed recommendations with information now at hand, but the following procedure is suggested:

1. Detailed mapping of the veins and faults should be carried out in the more important areas, as seen on Last Chance and Middle Hill. This should be followed by an adequate amount of exploration work in the way of systematic crosscutting where the veins are seen to have more than one productive band or streak between walls, and by work to pick up faulted extensions of ore shoots. Such explorations may be carried out from the old stopes, or from the tunnels below them, in Last Chance Hill.
2. Preliminary sampling should be done on outcrop and in accessible stopes of the Last Chance area, to determine the possibilities of open cut operation on low grade material.
3. The Esmeralda vein should be sampled on outcrop and in accessible workings to see if systematic exploration is advisable.
4. The workings on the Prospectus and Humboldt veins should be surveyed, and with some sampling to supplement the existing assay plates, and some new work to further outline the ore shoot extensions, a new estimate of tonnage should be made.
5. The advisability of diamond drilling should be carefully considered, as a means of exploring the downward extension of the Humboldt ore shoot, also for use on the Esmeralda and other large veins.

(Original signed) J. E. Farrell.

August 1, 1934.

REPORT ON THE AURORA DISTRICT

Mineral County, Nevada

by

J. H. Farrell

August, 1934

Location. The Aurora District is in Mineral County, in west central Nevada, close to the California line. The nearest railroad point is Thorne, a station on the Southern Pacific railroad, 37 miles to the northeast. The district was known as Esmeralda in early days.

History. The discovery was made in August, 1859, by James M. Brady, J. M. Cory, and E. R. Hicks, who located the Esmeralda and other claims, and carried news of their find to the Mono placer diggings, from which other miners came and helped to organize in the district. The first shipment of ore was made by mule train in November, 1860.

By the fall of 1861 most of the productive area had been staked, three small mills were in operation, and the town of Aurora had a population of 1500. In the spring of 1862 highgrade ore was found on the Antelope claim, and on Last Chance Hill where it was reported that 44 tons of ore yielded \$11,000, or about \$250 per ton. Many references are found in early descriptions of the camp to ore carrying from two hundred to five thousand dollars per ton, chiefly in gold, and it appears that the early production was exceptionally rich ore. No complete and authentic figures are available as to the total output.

Mining was very unsystematic and milling methods were crude, during the period of greatest production from 1863 to 1866. There was divided ownership of the bonanza area and armed conflict and litigation over the richer claims took such money that should have gone into development. By 1866 the known ore shoots opened at surface were exhausted, and such attempts as had been made to mine below a depth of 100 feet found little ore that could be profitably worked by the methods which had been successful with the Bonanza material on which operations had started.

An account by a contemporary observer says: "My idea of the cause of the decline of the district, and I believe the generally received opinion, is that just at the time (1864-5) the rich surface deposits became exhausted there was a great and general decline in all mining shares, and this, together with the great amount of litigation in regard to conflicting titles, caused stockholders in the various companies to refuse to pay (assessments) or furnish the money necessary to prospect the mines to any great depth below where the surface deposits had given out." (J. S. Jansson, judge of the District Court of Esmeralda County, in a letter written in May, 1873 to Joseph Wesson.)

The district declined until 1869, when it was practically deserted, and remained so for several years, except for two short-lived attempts to develop the Juniper vein. In 1877 a group of San Francisco men formed a company and took over the best of the claims on Last Chance Hill. The New Real Del Monte shaft was started and by 1881 was down between 800 and 900 feet, after much difficulty with water below the 500 foot level. A large (17") Cornish pump failed to handle the water, possibly when drifting was started on the 800 foot level, and the attempt was abandoned.

No production was made at that time. (A 17" Cornish pump with 10 foot stroke, 5 per minute, might handle 600 gallons per minute, but it is doubtful if more than half that amount could have been pumped from 800 foot depth with the Del Monte pump. The shaft has two hoisting compartments and the pump compartment, and may still be reached through the water discharge tunnel from the gulch about 100 feet below the shaft collar which is partly caved.)

There is no description of laberal work from the Del Monte shaft now available. It is reported that a station was established at 300 feet "where the shaft passes through a six foot body of quartz that assays well". (Quotation from pamphlet entitled "Bodie and Emeralds", by Joseph Wason, P. 52, published in 1878.) The flow of water was not excessive to a depth of 400 feet as it was handled by hoisting, and some work is reported to have been done at that level several years later. A level at 500 feet is also mentioned in an account of the shaft work as having been abandoned when the shaft was flooded.

Sometime between 1885 and 1887 an English company, name unknown to the writer, reopened the Real Del Monte shaft, but unwatered it to the 800 foot level with steam pumps, but they could not hold the water there and did not get into the level workings. They are said to have driven a crosscut southeast through the Philadelphia claim on the 400 foot level, crossing a wide vein which was not developed, probably because it was low grade, though it had some bunches of good grade ore. A drift was run to the southwest to the Durant shaft where some high grade ore had been mined above but the downward extension was not found.

This company sunk the Humboldt shaft 400 feet and did considerable work on several levels, but little mining as the ore was mostly too low in value to work profitably, the low limit was about \$12. per ton. (Information regarding the English company's operation was given the writer in the course of a conversation, by J. F. Parr in 1934. He was employed by this company for several years as time keeper, assayer, and assistant to the superintendent.) Their work was hampered by shortage of funds, which were supplied intermittently, though a considerable expenditure was made over a period of years, little was accomplished. This was the last attempt at systematic development for a long time, and the camp was again turned over to "coasters", or leasers, who made very complete cleanup of all accessible workings, but opened little new ground.

By 1912 a large number of claims had been gathered in two groups which were consolidated and taken over by Aurora Consolidated Mines Company, afterward controlled and operated under Goldfield Consolidated Mining Company management. From 1915 to 1918 this company mined and milled 633,332 tons of ore yielding \$1,342,482, a little less than \$3 per ton with tailings averaging 50¢. This ore came chiefly from the Humboldt and Prospectus veins at the north end of the district. It was treated in a cyanide plant of 500 tons daily capacity. The operation proved to be a marginal one until the latter part of 1918, when war costs forced a shutdown and the mill was dismantled along with all camp buildings.

The Aurora Consolidated had little money to spare for general exploration of its holdings, which included most of the productive ground of the district. Records show that only 1 foot of development was done for 40 to 50 tons mined. The result was that little was done in the way of investigating the Last Chance Hill area which had most of the bonanza production in early days. No ore was found there, as was to be expected since the old workings are above water level and had been open to leasers for fifty years in 1918. Since then only sporadic work has been done by leasers working over the dumps, or by operators with limited means.

Production. Bulletin 594, U. S. Geological Survey, gives a brief description of the Aurora District, pages 141-150, with the following regarding production: "The records are incomplete. According to a statement of Wells, Fargo & Company the bullion shipped through them up to 1869 had a value of \$27,000,000". This is followed by a statement showing bullion shipped without insurance from 1861 to 1869 amounting to \$2,865,968.82. Others more or less familiar with the camp have estimated the early production at from twelve to sixteen million dollars.

Judge J. S. Jameson, writing to Joseph Nasson in 1878, in reply to an inquiry regarding the camp's production said:

"I was in the (express) office over five years, and made all the reports, but I have forgotten the exact figures. I have no recollection of the amount sent by each company respectively. My recollection is, however, that in the year 1864, between \$7,000,000 and \$8,000,000 were forwarded from the office here, and that about \$12,000,000 altogether was sent away prior to the year 1869".

An owner of one of the assay offices of the camp stated that about half a million dollars worth of bullion was handled monthly through that office for about eighteen months in succession, presumably in 1863-'4.

These figures are almost incredible in spite of the large number of veins in the district. Neither the dumps nor surficial evidence of the workings indicate the removal of any large tonnage of ore, and it is very certain that most of the mining was done above a depth of 200 feet. Either the production has been greatly exaggerated, or else the ore was exceptionally high grade. Getting at this question from another angle, it is known that there were seventeen amalgamation mills in the district by 1864, most of them small, 5 to 10 stamps, the largest 30 stamps. The total number of stamps is given as over 200, but accounts show that the mills operated intermittently, stamps were light, and stamp duty did not exceed 1 to 1.5 tons per stamp per 24 hours. If we consider the period of maximum production to be 18 months of 1863-4, during which perhaps \$10,000,000 worth of bullion was produced, with 150 stamps on an average, in operation for 500 working days, crushing 225 tons daily total, the total would be 112,500 tons, with an average recovered value of nearly \$90 per ton. As extractions ranged from 60 to 80%, the ore must have been of exceptional grade. Information from contemporary accounts is that much of the production was from a small tonnage of even higher average grade than estimated above.

General Conditions. The town of Aurora is about 7500 feet above sea level, situated near the top of one of the main ridges east of the Sierra Nevada. The climate is good, though there is occasional severe winter weather.

Water. Is available in shallow wells, most of which are dry in the late summer following seasons of light snowfall. Springs at distances of 2 to 5 miles furnish ample water for camp use and for small milling operations. There is a fairly large flow of water from the Prospectus Tunnel at the north end of the district, and the Del Norte shaft would doubtless supply water for a large mill.

Power from the lines of the Mineral County Power Company is now being sold in the district at reasonable rates for small operations, and a large operator would probably be able to obtain a very low rate. The hydroelectric generating plants of the Southern Sierras Power Company are 30 to 40 miles distant.

Roads to Thorne, Bridgeport, and Bodie are all improved dirt roads, kept in good shape by the counties except in winter when they must be kept open by teams or tractors during severe storms.

Geological Conditions. No detailed study of the geology of this area has ever been made. The description in the Geological Survey Bulletin referred to above, was based on a field visit of only three days, and is necessarily incomplete.

The productive formation is a volcanic flow, or series of flows, classed as latite or andesite porphyry, having a known thickness of about 800 feet. It is intruded and capped by rhyolite, which is supposed to be of nearly the same period as the quartz veins. The latest flow is basalt from Aurora crater north of the camp, which covers the productive formation.

The vein system is exceptional, in the number seen on outcrop, their continuity, and the large amount of quartz which they carry. The known productive area is two miles long by a mile and a half wide, within which are 14 major veins, or vein systems. Widths range from a few inches to 80 feet, or more, in the Humboldt and the Esmeralda, at the north and south ends of the district respectively.

The prevailing strikes are N. 45 to 65 degrees E., with dips to the southeast. Exceptions are the Prospectus and Humboldt, dipping 80 degrees north, and the Esmeralda-Radical striking N. 10 degrees E., standing nearly vertical.

The number of smaller veins is very large, and in some localities they form extensive stringer zones which are probably too low grade, over great widths, to have attracted attention in the early period of prospecting, but which merit investigation with the present price of gold.

The origin of the veins appears referable to a period of general penetration of the andesite porphyry by siliceous solutions, possibly accompanying the extrusion of the rhyolite. There may also have been a later downward concentration of quartz with enrichment of the metallic content of the ore shoots near the surface.

On the other hand, J. E. Spurr considers these veins to

be typical "vein dikes", forming as the last phase of magmatic differentiation, and very much like other intrusive masses. This theory favors the probability of persistence to considerable depth, as it is difficult to imagine a dike several thousand feet long as exposed on outcrop, disappearing entirely within three or four hundred feet or less.

There is no obvious theoretical reason why the veins of this area should not extend much deeper and continue to be productive well below the present limits of exploration in most parts of the district.

The metal content of the veins varies rapidly within short distances. All of the quartz carries some gold and silver, according to Spurr, but the high grade ores were localized along narrow sections on either wall, or occasionally toward the middle of the vein. Even within these limits it appears to have been an erratic or "pockety" occurrence for the most part, though one or two of the very rich stopes were "wide enough to swing a wagon", according to one of the mine superintendents of the Bonanza days.

It is probable that much of the ore handled in the early period carried over \$100 a ton in gold and silver. The Humboldt and Prospectus, faulted sections of the same vein, were low grade averaging less than 0.2 oz. gold per ton, and rarely showing samples exceeding one ounce.

The ratio of gold to silver by weight varies from 1:2 at the north end of the district to 1:35 to 45 (Spurr) at the south end. It is not known if this variation is due to differences in the original content of the veins or to secondary concentration of the metals. There is nearly a thousand feet difference in elevation between outcrops in the two localities.

Faulting. One major fault has been recognized, known as the Humboldt Fault, having a strike No. 20 to 30 degrees W., dipping steeply, and with a horizontal displacement of over 800 feet. It has offset the Prospectus and Last Chance veins to the north from the Humboldt and Real Del Monte, which are presumably their respective continuations east of the fault. The Humboldt Fault appears to be the most prominent of a series of more or less parallel faults, and only detailed study and mapping will show the effect of the entire system. Many minor faults and slips are to be seen in the old workings on the Last Chance Hill, and the reports of exploration work by the Aurora Consolidated refer to faulting which interfered with the search for ore in the Humboldt and Juniata veins.

The solution of the various faults, especially in the "highgrade" stope area of Last Chance and Middle Hill, would seem to offer exceptional possibilities of finding new ore bodies.

Mine Development. The earliest work consisted of shafts started in the vein outcrops, from which stoping proceeded as soon as ore was found. In fact, the Wide West and other of the Last

Chance vein system, show stopes which were evidently started as open cuts without any regular shaft sinking. There was very little crosscutting in the course of this mining,--once a "pay shoot" was found, it was followed to its limits and almost no dead work was done either in the walls or along barren parts of the vein.

The next step was to drive tunnels, either for extraction of ore from existing stopes or known ore shoots, or as work by "tunnel companies" for the primary purpose of selling shares, and incidentally to look for "blind" veins. This accounts for the fact that some of the most productive ground was not adequately cross-cut, either by the tunnels themselves or by branches.

A still later stage was the sinking of deeper shafts, such as the Humboldt, Juniata, and Durant. These were well away from the most productive area and opened lower grade material, which could not be profitably worked, except for a small body of ore in the Durant.

The deepest shaft in the district, the 900 foot Real Del Monte, made no production, and there is no record of any conclusive lateral exploration from it, though it is close to the area of bonanza production. Difficulties with water and dispersion of funds by the English company seem to have been the causes of failure there.

The last systematic development was done by the Aurora Consolidated, and consisted of several thousand feet of haulage tunnel, opening two low grade veins in the northern section, the Humboldt and Prospectus, and reaching the Juniata a long way from the central productive area. The writer has not been able to learn the extent of the work on the Juniata, but it seems not to have been extensive as it was carried out chiefly during the last year of the Company's operation. One branch of the haulage tunnel was headed toward Last Chance Hill and the Real Del Monte shaft, but it is not known how far it was driven in this direction. If it is true that the ore deposits are essentially shallow some type, this tunnel and its various branches, at depth of 400 feet or more, are well below the productive horizon, and of little use for exploration purposes.

In summing up, it may be said that the central and northern parts of the district have had development work well started but never carried to a conclusive point, while the southern end of the area has never been adequately explored except as to the search for rich pockets at or near surface.

Available Ore. There is a limited tonnage on the old dumps which may now be profitably handled, but it is doubtful if this would total 50,000 tons carrying 0.15 ounces or over for the entire district.

In the Humboldt and Prospectus workings it appears from figures in the annual reports of the Aurora Consolidated, that there were left between 50,000 and 100,000 tons of grade worked in 1918, or about 0.17 ounces gold per ton, worth now approximately \$6.00. Little is known as to the details of location, or

availability, except that it is above the haulage level, and doubtless includes the extensions of stopes worked in 1918, along with the ground between the level and the first sublevel above. Inspection of such assay plats as are available, suggests that it might be possible to add materially to the tonnage figures given above, in view of the present price of gold. It would not be difficult to make a revised estimate by surveying the sublevels and stopes as far as they are accessible now, using the old assay plats. This would require first cleaning out parts of the crosscut tunnel, which is probably closed where faults were encountered.

The average grade is probably somewhat below that maintained in the 1918-'18 operations, as the assay plat of the tunnel level shows three crosscuts which average 0.134 ounces gold per ton, worth \$2.88 at \$20/oz., \$4.69 at \$35/oz. The average width is 30 feet and the known length of the ore shoot is 500 feet. Additional crosscutting would be advisable to determine possible extensions of the ore shoot, and also to check up on possible parallel ore shoots in the walls. It would be easy to prospect below the level to a depth of 200 feet by drilling from existing crosscuts. The only exploration below this level is said to have been a winze well out toward the east limit of the ore shoot, or beyond it.

The importance of ore in sight in the Humboldt vein is not enough to warrant the erection of a new mill, but in connection with the operations elsewhere in the district, it is worth consideration.

Open Pit Ore. There is no information at hand on which to base an estimate of possible tonnage from an open cut operation, but there are two sections of the Last Chance Hill area which ought to be investigated. One of these is the line of the Wide West-last Chance vein system, together with the Real Del Monte vein east of the Humboldt Fault. These veins are 35 to 50 feet in width, including horses of mineralized country rock, and as they dip flatly, 25 to 35 degrees, they could be worked by power shovel, or by mill holes to the old haulage tunnels (not the Prospectus Tunnel). It would need a comparatively small outlay to start such an operation, if examination warrants it. As the early work did not include systematic crosscutting of these veins in which there are several "pay streaks" between walls, and possible parallel veins beyond the recognized walls, it is reasonable to expect that the grade of open pit ore might be materially increased by occasional pockets of high grade, and such richer shoots could then be followed below the limits of open cut work, or reached from below.

Another section worthy of detailed study and sampling, is southwest of the Del Monte shaft. Here for a width of 200 to 300 feet or more there is a "stringer zone" mineralization of the porphyry, including some larger veins that were mined in early days. This ground has apparently not been crosscut from any of the tunnels in the vicinity, but it would only require a few hundred feet of crosscutting from the nearest one to prospect a block 800

feet in length by 300 feet across, which may yield a large tonnage of low grade material. This area could be worked very cheaply by side hill open cut.

Future of the District. In the writer's opinion the Aurora District offers excellent opportunities for mining exploration. Even if it is admitted that the deposits are likely to be limited in depth, there is a very large area that has had little work done on it since early days. The faulting in the bonanza stope locality on Last Chance Hill makes it almost certain that the "old timers" did not find all the rich ore shoots.

There is no good reason for the limitation of ore bodies at slight depth. The productive formation is known to be 900 feet deep at least. The mineralization is strong, and the veins are exceptionally persistent along the strike. In other areas of Tertiary volcanics depths of 600 to 1000 feet are common, and in several districts the limit has been close to 2000 feet. It does not seem logical to assume that at Aurora 200 feet must be accepted as the limit with depth. It is more likely that some condition of the faulting or flat rake of ore shoots, not understood in the early period of haphazard development, obscured the downward extension of the rich ores in the Wide West-Last Chance-Del Monte vein system, which was the most productive in the district.

Another development chance is to be found in some of the big quartz veins, such as the Esmeralda-Radical. This vein may be traced several thousand feet with widths of 30 to 50 feet on outcrop. There was an active search for high grade silver ore in the period following discovery, evidenced by many pits and open cuts. Two or three tunnels were driven to cut the vein at depth, but evidently the high values were scattered, or lacking, the vein material was hard, and the size of the vein alone required much work to open it completely. This work was never carried out.

Conclusions. Most of the search for new mines in the Western Field has consisted of routine sampling of old workings. If new ore bodies are to be found it will only be as a result of opening new ground.

The Aurora district offers a good chance for this type of work. It has an excellent record of high grade production, old workings are numerous above the water level, and are either open or may be entered with small outlay, giving many points from which properly planned new work may be started without delay. Water and power are available without incurring large expenditures.

It will be possible to determine quickly and at slight cost what the best chances are, and to verify them readily, starting operations on a small scale and ultimately building up an important district enterprise.

(Original signed) J. H. Farrell

August 1, 1934

RECONNAISSANCE REPORT
ON MINING CLAIMS
UNDER OPTION TO A. P. SCOTT, ESQ.,
AT AURORA, MINERAL COUNTY, NEVADA

Rogers, Mayer and Bell,
Mining Engineers,
26 Beaver Street,
New York, N.Y.

RECONNAISSANCE REPORT
ON MINING CLAIMS
UNDER OPTION TO A. P. SCOTT, ESQ.,
AT AURORA, MINERAL COUNTY, NEVADA.

INTRODUCTION:

As agreed with Walter Seligman, Esq., our Mr. Sydney H. Ball made between October 8th and 14th, 1936 a reconnaissance of the ore deposits of the mining camp at Aurora, Nevada. Due to certain conditions of the option existing during the examination, it had to be completed prior to October 18th.

Few of the workings of the famous old camp are open but Mr. Ball had access to the maps and sampling results of Mr. A. W. Stickney's party, who had been examining the district from July to October, 1936. He was also fortunate in having during his examination the expert guidance of Mr. John J. Moisan, one of Mr. Stickney's assistants, who was familiar with the district.

CONCLUSIONS:

The ground under option in the Aurora camp if vigorously developed would probably warrant at no very distant future date the erection of a 100-ton mill to operate on medium grade gold ore (\$8 - \$9 per ton). This ore should show a profit of from \$1.00 to \$2.00 per ton. There are in certain old workings some 47,000 tons of indicated ore averaging about \$8.85, which could be opened up for mining at no prohibitive cost. The capital expenditure required for the enterprise on a 100-ton basis would be about \$240,000. To repay such a sum would require about 4 years' operation of a 100-ton mill. Such

a life to the property does not seem impossible but it is not believed probable that enough further ore will be developed to furnish profits commensurate with the risk involved. This especially as the ore bodies appear to become non-commercial at relatively shallow depths. The camp at one time is reported to have produced bonanza ore but such ore bodies were probably small and it is believed that the old timers found the majority of them. From time to time, however, the inclusion of rich streaks of ore would doubtless for a day or two raise the mill heads above that mentioned above.

In short we do not feel that the profits likely to be made warrant risking capital in participating in the enterprise.

LOCATION AND HOLDINGS:

Mr. A. P. Scott owns through the Aurora United Mines Corporation a large area in the north and northeast part of the camp and has under option the properties of the Aurora Consolidated Mines Company in the central part of the district. The first group has produced little ore but included in the latter group are most of the better known mines of the district. Mr. Scott's original option required a cash payment of \$50,000 on or before October 10th, 1936; if the option was exercised at a later date the total payments were to increase. This option was, however, extended during the examination with no increase in payment; a reasonable option was also obtained on the Silver Lining group.

HISTORY:

The gold camp of Aurora was discovered in 1860 and by 1864 it was said to have had a population of 10,000 (1936, 8 or 9). Its prosperity continued till about 1882. An English company attempted

unsuccessfully to work some of the more important Middle Hill claims from 1887 to 1892. A subsidiary of the Goldfield Consolidated Mining Company, the Aurora Consolidated Mines Company, operated a large area in the central part of the camp from July 1, 1914 to October, 1918. An attempt to keep a 500-ton mill in ore resulted in much injudicious mining and the treatment of such country rock and the enterprise failed; a failure, also in part at least, doubtless due to labor difficulties during the World War period. During the four years there were milled 591,202 tons averaging \$3.35 per ton, the average daily milling rate when the plant operated being 480 tons. This group of claims forms the center around which the present enterprise is built. The increase of the price of gold from \$20.67 to \$35 an ounce naturally transforms some waste of 20 years ago into ore.

Records of the camp's production are incomplete but it was large. Wells Fargo & Co. report that they shipped out from the camp up to 1869 bullion to the value of \$27,000,000. Some of the workings are extensive though shallow and the central part of the camp is pot-holed with innumerable small holes, shaft, open-cuts and tunnels.

OPERATING CONDITIONS:

Aurora district is situated in an elevated desert region consisting of rather gently sloping hills and ridges cut by shallow valleys. Lower points in the district are about 7,400 feet above sea level and the higher, 8,700 feet. The climate is delightful in the spring, summer and fall, although during some four winter months snow is reported to be heavy.

The hills are covered by sage brush and a sparse growth of small trees of the pine family. Wood suitable for mine timber is lacking.

The Main Drain tunnel is reported to make about 45 gallons a minute and Fallon springs another 15 gallons. There is enough water for a small cyanide mill and for the population dependent thereon.

Power lines, the property of Mineral County, cross the claims. Rates are high, but through negotiations, fairly satisfactory rates could be obtained.

Labor would have to be imported.

Transport conditions are not at present overly favorable but if, as is reported, the Navy is to hard-surface the road from its ammunition dumps at Hawthorne west to the Los Angeles, Reno highway, they will be greatly improved.

The rock, judging from old workings, stands well and not much timber will be required underground. Dilution in mining should not be over 10 to 15%.

On the whole, conditions suggest that mining costs will not be either low or excessively high.

GEOLOGY:

ROCKS PRESENT:

The oldest rocks in the district are greenstones intricately intruded by a porphyritic granite outcropping over a small area 1-1/4 miles southeast of Aurora. On the rugged topography of this old rock series, volcanic flows were laid down.

The oldest and lowest flow rocks are flat-lying and grayish green andesites and related slightly more acid rocks (latites). These rocks are highly altered particularly near the veins. They are known to be at least 900 feet thick.

On top of the evenly eroded surface of the andesites, white to pinkish-gray rhyolites occur to the north and west of the camp and cap one striking hill, Granite Mountain, in the center of camp. The rhyolites are over 1,000 feet thick in places. Erosion must have been extensive between the intrusion of the rhyolites and the next youngest flow the basalts as the latter frequently lies immediately upon the andesites.

The youngest flow rock is black vesicular basalt which covers large areas to the east and north of the mining district. It probably flowed from several craters, not of the same age.

STRUCTURE:

The region, or more correctly the andesites, has suffered a succession of important faultings. The earliest of these in a broad way strike slightly north of east and south of west and are occupied by the veins of the camp. Shortly after the veins were deposited two major faults (Humboldt and Prospectus) about 600 feet apart cleaved the center of the district from north to south. These apparently successively throw the vein segments, going in an easterly direction, to the south. Some silicified gouge in the faults appears to have been mined in the past. Some of this does not appear to be drag quartz and in consequence the Prospectus and Humboldt faults may have originated before the mineralizing processes ceased. Still later faults exist and the Last Chance-Johnson Steep Country, presumably the locus of much of the old timers' bonanza ore, is a mass of faults both parallel to and at right angles to the main faults. Faulting will complicate the following of certain of the ore shoots.

ORE BODIES:

The mineralized area of the camp extends from the Hilda vein on the northeast to the Esmeralda vein on the southwest, a distance of 19,200 feet (3.6 miles) and has a width of about 3,000 feet (0.6 miles).

The veins are confined to the andesite flows and presumably antedate that of the rhyolite. The Hilda and Big Dike occur in a flow rock containing quartz phenocrysts but presumably this is one of the more acid rocks of the andesite series rather than a rhyolite.

The veins are of rather regular width. They vary from a few inches to 20 feet or more in thickness. Along their strike they are inclined to be rather continuous. They stand up above the andesite as rugged quartz walls except where the overburden is heavy, in which case their position may be indicated by residual boulders. The Humboldt, Junista and many other veins are practically vertical but the Philadelphia and Last Chance vein-complexes dip some 50° south.

The veins consist predominantly of a white, very fine-grained, porcelain-like quartz; in which there may be vugs lined by quartz crystals. This appears to be the older quartz. The silicification of the crushed andesitic walls, common in the district, may be contemporaneous. Cutting such quartz is a younger type often well banded vertically. In this are streaks of dark-gray or bluish gray color, evidently finely divided sulphides. Quartz-lined vugs also occur in this type of quartz. The banded ore is reported to be of better grade than the massive. A little calcite occurs and some of the quartz appears to replace much more calcite than once existed.

The ore is notably lacking in sulphides but a little pyrite and chalcopyrite is reported. Native gold can be panned from the better ore.

Judging from the position of many old pits along the edges of the veins, the old timers found better values near the walls.

Little can be said as to grade of the vein filling: most of it is low grade: shoots containing \$7 to \$10 of gold per ton may be rather extensive: while short, narrow lenses must exist which after close clobbering furnished the old timers their high grade.

Most of the camp is a gold camp: perhaps 5% of the values being in silver. At Silver Hill in the southwest corner of the camp, however, at present precious metal price (gold \$35, silver 77 cents an ounce) silver is as important as gold.

ORE BODIES IN RELATION TO DEPTH:

The Aurora ore bodies belong to the Tertiary gold-silver deposits, which are common in Nevada and other southwestern states. In such ore bodies the values decrease in depth and become unpayable at from 800 to 3,000 feet below the surface. With veins the size of those of Aurora, we would expect such original impoverishment at perhaps 1,000 feet.

While there has been little exploration in Aurora at depth (Del Monte shaft reported to be 900 feet deep with deepest crosscut at 500 feet; Drainage tunnel in places, 500 feet below the surface) such evidence as exists indicates that the ore becomes impoverished at much shallower depth than that mentioned above and that in most other camps with ore bodies of similar origin. The deepest ore known in the camp is on the Juniata No. 1, perhaps 400 to 450 feet below the surface and this ore does not occur in quantity. Ore is reported on the crosscut between the Del Monte and Durand shafts between 320 and 400 feet below the surface.

Instances of loss of values in veins at shallow depth follow: Hancock tunnel 75 feet below good surface ore on spur of Ann vein, non-commercial; Humboldt vein, northeast of Humboldt shaft, first level 4.2 feet of \$11.44 ore; second level 4.9 feet of \$7.04 rock; third and fourth levels respectively 5.91 of \$1.94 and 8 feet of \$2.02; Gladiator vein loses values between surface and 80-foot level and such diminution of values is characteristic of other veins in Silver Hill section; on the Saul Smith Russell claim values in old stopes 25 feet below the surface 2.42 feet of \$6.05, on Upper Yellow Jacket tunnel 25 feet deeper 2.17 feet of \$0.18 and 85 feet deeper 1.5 feet of \$0.12; Stuart vein, surface 4 feet of \$2.05 and 50 feet below in Stuart tunnel 3.4 feet of \$1.18; No. 1 Juniata vein on Lower tunnel 220-280 feet below the surface outcrop 65 Goldfield samples for a length of 400 feet averaged over 4 feet width \$9.42, 11 Stickney samples on Intermediate tunnel 130 feet deeper for 130 feet averaged over 4.5 feet \$2.35; 37 Goldfield samples on Haulage level 100 feet deeper for 220 feet, average width not given, averaged \$1.75. Other data in the camp suggests similar condition although it is less complete. To my knowledge, instances of the reverse, i.e., improvement of values in depth, are lacking.

These data indicate strongly that commercial ore is confined to a shallow zone immediately below the surface and suggest that depth development is unwarranted.

The cause suggested is a moderately deep erosion of the veins followed by secondary enrichment, although more work would be essential to prove or disprove this suggestion. Before the drainage tunnels were put in, springs are reported to have existed in most of the valley heads; and probably water was not over 100 - 150 feet deep on the ridges. Some manganese dioxide is present to act as a solvent of gold. Another possible

explanation might be that before the rhyolite flowed out, the andesite had been so deeply eroded that only the "roots" of the veins remain today.

INDICATED ORE:

During the course of Mr. Stickney's examination, he found five blocks of ground (two on the Juniata No. 1 vein, two on the Juniata No. 2 vein and one on the Juniata No. 3) left by the Goldfield Consolidated, which appear to contain (together with 4,000 tons of \$5 fill) 47,300 tons of an average grade of \$8.85. No great sum would be required to change this indicated ore into developed ore. Of the above total, 3,075 tons of \$9.40 is in Last Chance ground - not until recently under option to Mr. Scott. The dumps and tailings piles are unimportant.

OTHER CHANCES OF ORE:

It is probable that further development of the Juniata vein system would develop more ore, as it is from 500 to 600 feet to the west before the Humboldt fault is encountered. Some trenching of the vein should be done here. Beyond the fault bounding the above blocks to the east, the Juniata vein system is known. This area has possibilities.

The Silver Lining tunnel, recently optioned on rather favorable terms, will probably prove up some rather low grade ore.

The Philadelphia vein on the Philadelphia and Last Chance claims would probably furnish some medium grade ore, if reopened further. Some work should be done on the narrow vein on Northern Belle.

The spur of the Ann vein at the Garfield and Hancock stopes is ore, although it is probably shallow. This whole spur should be sampled, as should be the Hilda and the Big Dike.

The above are at present the most promising chances, in our opinion. We are sceptical of the successful outcome of any attempt to

find the extension of the Juniata vein across the valley east-northeast of the east end line of that claim, as we fear, due to the lower elevations there and the rhyolite cap, that the andesite, when found, will be below the horizon where ore may be expected in it.

In the normal course of development, it would be expected that from time to time small lenses of high-grade ore would be encountered, and presumably these would not be frequent enough to raise the grade markedly.

CONCLUSION AS TO POSSIBLE SCALE OF OPERATIONS:

At best it would be our judgment that enough ore of medium grade (\$8 - \$9 per ton) might be developed to warrant at no very distant date a 100-ton mill. The shallow depth to which the ore appears to extend and the considerable amount of ore stoped in previous operations apparently preclude hopes of a larger operation. Certainly no mill should be considered until the indicated ore becomes positive ore and until about 100,000 tons of ore is developed with good prospects of more ore. At that time it is probable that ore extraction will have to be carried out at two or more places with part of the ore trucked to the mill.

CAPITAL REQUIREMENTS:

At present, capital requirements, if the project was followed through, might be from \$230,000 to \$250,000 including property payments, mining equipment, mine development, 100-ton mill, and town and road improvements.

PROBABLE MINING COSTS:

Costs per ton in this district on a basis of 100 tons a day

should approach the following:

Development mining and milling.....	\$ 5.25
Overhead.....	.30
Taxes and depreciation.....	.65
	COST.....\$ 6.20
Add tailings loss.....	.50
	TOTAL COST.....\$ 6.70

With a 10 - 15% dilution in mining, ore would have to assay somewhat over \$7.00 to be profitable.

While no recent mill tests have been made on the ore, Goldfield Consolidated from 1915 to 1918 got extractions ranging from 82.2% to 87%. As they milled not only quartz but much clayey kaolinized country rock, it is probable that a smaller operation, milling only quartz, and considering the improvements in milling gold ore during the past twenty years, would get an extraction of 90% or more. A little selenium and some antimony are, however, reported to be present in the ore and provided anyone decides to go ahead with the project, shipments of typical ore should be sent out for mill tests.

CONCLUSIONS:

See pages 1 and 2.

Respectfully submitted

Rogers Hayer & Call (Signed)

ROGERS, HAYER AND BALL

New York, N.Y.,
October 22, 1936.

April 30, 1942

JUNIATA MILL DISCUSSION

Aurora, Nevada.

Consider grinding to 30 or 48 mesh (see capacities of 5x4 mill at these finenesses) and leach for 48 hours, classify out the fines (minus 100 mesh), and regrind to minus 100 mesh and then float all minus 100 mesh including first 100 mesh fines classified out.

- 1st. The cyanidation leach may dissolve certain gold particles, partly oxidized or coated, which are not amenable to recovery by flotation.
- 2nd. The capacity of the 5x4 mill should be around 100 tons per day on a $1/2''$ feed and a 30 mesh grind, and possibly will be around 80 tons per day on a $1/2''$ feed and a 48 mesh grind.
- 3rd. If a minus 20 mesh grind will equal $57\frac{1}{2}\%$ minus 100 mesh, as was the case in A.C.Co. Table 3, then a minus 30 mesh grind might equal 50% minus 100 mesh, and a minus 48 mesh grind possibly would represent $60\frac{1}{2}\%$ minus 100 mesh.
- 4th. If a 48 hour leach will recover 59.95% of the gold in a minus 20 mesh product, as shown by A.C.Co. Table 2, then the same time of leaching on a minus 30 mesh product might recover 65%, or more, of the gold, and the same 48 hour leaching time on a minus 48 mesh product might recover 70%, or more, of the gold. Evidently, longer periods of leaching might recover a little more gold, however, it is possible that consumption of cyanide is

increased by the longer time of leach. Minus 48 mesh product might not permit sufficient and rapid percolation until the slimes have been removed, however, no reports of tests are available to judge except HBCJr. Cyanide Test No. 2 on a product which was 97% minus 65 mesh and 100% plus 100 mesh. On a 5 day leach (120 hours) the gold recovery was only 47% on aforesaid test.

PROSPECTIVE FLOW SHEET

- A. The 6x4 Ball Mill grinds a $1\frac{1}{2}$ " feed and delivers 100 tons minus 30 mesh to leaching tanks each 24 hours.
- B. If 48 hours of leaching the minus 30 mesh product results in a recovery of 65% Au and the fines (minus 100 are then classified out and delivered to Flotation cells, or to tails pond, and the coars (plus 100) sent to another ball or tube mill and all ground to minus 100 mesh and then delivered to the cells for concentration by flotation, the recovery might be surprisingly high.
- C. If aforesaid leaching method recovered 65% of gold content, and if flotation cells recover 80% of balance (80% of 35% = 28%), the overall gold recovery will be 93%.
- D. It might be preferable to grind the minus 30 and plus 100 mesh product in a second ball mill in circuit with classifier and to send all minus 150 mesh material to flotation cells and to return all minus 100 plus 150 mesh to the leaching tank if we can establish that there

is good percolation of this sized product. This, however, appears doubtful as minus 100 plus 150 mesh seems too fine for leaching.

- E. If first ball mill will grind 100 tons of $1\frac{1}{2}$ " feed to a minus 30 mesh product representing 50% minus 100 mesh (seems possible if minus 20 mesh equals $37\frac{1}{2}\%$ minus 100 mesh), then the second ball mill will have to grind only 50 tons per day of minus 30 mesh to a fineness of 100% minus 100 mesh to maintain a daily capacity of 100 tons. If necessary, this second mill could grind to minus 150 mesh if recovery by flotation could be increased sufficiently to offset extra grinding costs.
- F. The second mill might be a pebble mill, such as we have at Tonopah, and we should determine if the hard white quartz ore from Juniata could be economically used as the grinding media for grinding a minus 30 mesh product to 100% minus 100 mesh. It would require a 75 HP motor, therefore, a smaller ball mill with a 50 HP motor might be more economical.
- G. Present Juniata Mill would need an extra ball mill, 2 large leaching tanks, gold precipitating plant and possibly additional flotation cells.

FURTHER DISCUSSION

By referring to ACCo. Tables 2 and 3, it is observed that a 96-hour leaching test on a minus 20 mesh product showed a recovery of 72% of gold and 47.8% of the silver contents. The tails, after leaching, were sized and revealed that the minus 100 mesh product represented

37.5% of the total pulp and it averaged less than 0.015 oz. Au and 0.50 oz. Ag. If a recovery of 72%, or more, of the gold content could be obtained from leaching a minus 30 mesh product, and if the sizing test on the tails showed that a 50% thereof was minus 100 mesh, and if further assaying revealed that a 96 hour leach permitted less than 0.015 oz. Au to remain in the 50% minus 100 mesh tails, then it might be advisable to reconsider the 48-hour time of leaching, as hereinabove proposed, and to make the leaching periods 96 hours. This, if 72% of gold could be recovered, would leave 21% of the gold in the minus 30 and plus 100 mesh product to be sent to the second ball mill for further grinding to either minus 100 or 150 mesh and thence to the cells for recovery of the concentrate by flotation. The 50% minus 100 mesh would contain 7% of the gold, and this product also might be sent direct to the flotation cells as all remaining metallics would have been cleaned by the cyanide attack and would be susceptible to recovery in the cells. If 50% of the 7% and 70% of the 21% could be recovered in the flotation cells, the total over all recoveries would be as follows, to-wit:

Leaching of Minus 30 mesh.....	72.0%
Floating 50% of 7%.....	3.5%
Floating 70% of 21%.....	14.7%
TOTAL RECOVERY.....	90.2%

The advantage of this plan would be that only one half of the ore crushed would be put through the cyanide leaching plant, and all of the remaining metallics in the ore subsequently put through the flotation cells would first have been cleaned by the cyanide attack and each thereof would be susceptible to flotation in a high degree. The question presented; is whether, or not, the cyanide solution in the ore being run to the flotation cells would interfere with the efficiency of the flotation chemicals?

H.B.C.

ORE DRESSING TESTS:

In 1938 the American Cyanamid Company made ore dressing tests on a weighted composite of the one hundred and fifty channel samples cut from the veins of the Juniata mine workings by the writer's crew during his examination of the District for a client in 1936, with the following summarized results.

1. Fine Grinding and Cyanide Agitation. By grinding the ore (feed = Au 0.252 oz. and Ag 1.01 oz./ton) to 98% minus 150 mesh and cyaniding by agitation in an open bottle, 98.37% of the gold and 84.16% of the silver were extracted in 48 hours. The cyanidation tailings assayed 0.004 oz./ton Au and 0.16 oz./ton Ag. The consumption of cyanide was 2.92 lbs./ton of ore and the consumption of lime was 17.4 lbs./ton of ore.

2. Flotation, De-sliming and Cyanide Leaching. With a 20-minute grind (98% minus 150 mesh) 88.84% of the gold and 72.0% of the silver were recovered in a rougher flotation concentrate assaying 3.05 oz./ton Au and 9.86 oz./ton Ag. The flotation tailing assayed 0.030 oz./ton Au and 0.30 oz./ton Ag. Ratio of concentration = 13.8 to 1. These tailings were de-slimed resulting in 69.2% sands carrying 0.042 oz./ton Au and 0.31 oz./ton Ag and 30.8% slimes carrying 0.015 oz./ton Au and 0.30 oz./ton Ag. The sands were leached without agitation by percolation for 72 hours and the additional percentages of gold and silver recovered were 7.36 and 9.0 respectively. The reagents consumed were 0.29 lb. of sodium cyanide and 1.75 lbs. of lime per ton of original ore. Thus the overall recoveries of gold and silver were respectively 96.2% and 81.0%, and the composite of the slimes and the cyanide residue, representing the overall tailings, contained 0.010 oz./ton Au and 0.20 oz./ton Ag.

The rougher concentrate was cleaned by flotation and the cleaner concentrate assayed 55.91 oz./ton Au and 102.6 oz./ton Ag with an overall concentration ratio of 163 to 1.

(In our mill tune-up just before closing for the winter in November last, we obtained and shipped to the smelter a total of two cleaner concentrates as follows:

658.5 lbs. assaying 217.80 oz./ton Au and 871.75 oz./ton Ag
2795 lbs. assaying 20.15 oz./ton Au and 165.08 oz./ton Ag

The mill was not completed for de-sliming and cyaniding the flotation tails. The smelter paid us \$34.45 and \$53.90 respectively an ounce for the gold. It is probable a saving could be effected by putting such small quantities of high grade concentrates into bullion locally.)

(Copied from Pages 4 and 5 of A.W. Stickney Report)

AMERICAN CYANAMID COMPANY
ORE DRESSING LABORATORY

Cyanidation and Flotation Tests
on Sample of Gold-Silver Ore
Submitted by Mr. A. W. Stickney

This report is based on metallurgical results obtained in the ore dressing laboratory of American Cyanamid Company on a sample of material submitted by the subject company, and all recommendations and opinions expressed herein apply only to the treatment of material conforming to the sample submitted.

Introduction:

A 112-pound sample of gold-silver ore was forwarded to the Ore Dressing Laboratory for testing by Mr. A. W. Stickney, Mills Building, San Francisco, California.

This sample was said to be representative of ore from a property near Aurora, Nevada. (NOTE: from Juniata Mine)

Mr. Stickney, in his letter of May 20, 1939, described the sample as a weighted composite of several hundred channel samples on veins 5 feet in average width and averaging around \$10.00 in gold and 1 to 2 ounces of silver per ton. The non-metallic gangue is dominantly quartz with some calcite. The amount of metallic minerals present is estimated at about one-half per cent. Pyrite, chalcopyrite, and tetrahedrite were identified. Some oxidation of the sulfides has occurred. Panning showed a little fine, free gold.

Mr. Stickney requested us to determine the most economical method of treating this ore on the basis of a 75-ton mill. The methods of treatment suggested were coarse grinding followed by cyanide leaching, fine grinding followed by cyanide agitation, and flotation.

The property is 30 miles from the nearest railroad and the elevation is 7400 feet. Sixty gallons of water per minute are available.

Purpose of Investigation:

The purpose of this investigation was to determine the most economical method of treating the sample of ore submitted by Mr. A. W. Stickney.

Preliminary Test Work:

Preparation of Sample

The sample as received consisted of pieces ranging in size from 1/2" to fines.

The entire sample was mixed thoroughly by riffing. One quarter of the sample was riffled out and crushed to minus 20 mesh. This material was then weighed into 500-gram charges for testing.

Analysis of Head Sample

A 500-gram charge of the ore was ground to minus 65 mesh in a laboratory rod mill, dried, sampled, and submitted for assay and analysis. The results are shown in Table I.

TABLE I

Analysis of Head Sample

Au	0.263 oz./ton
Ag	1.08 oz./ton
Cu	Trace
Pb	Trace
Zn	Trace
Fe	1.40 %
S	0.11 %
Insoluble	97.52 %
Specific Gravity	2.65

Microscopical Examination

A portion of the head sample was concentrated on a Dultain super-panner and examined by means of a microscope.

The following minerals were identified: pyrite, some of which was altering to limonite; small amounts of chalcopyrite, galena, and sphalerite; fine, free gold and argentite.

Some of the free gold was tarnished.

The largest piece of gold observed was about 325 mesh (43 microns).

Some gold was observed attached to the gangue.

Experimental Work:

Test 1 - Coarse Grinding Followed By Cyanide Leaching

Three 600-gram charges of minus 20 mesh ore were transferred to a glass cylinder open at the top and having a narrow neck at the bottom. The neck was fitted with rubber tubing and a screw clamp whereby the rate of flow of cyanide solution could be regulated. The 1800 grams of sample used in this test made a bed of ore 5-1/2" in diameter and 4" deep.

Two grams of lime were sprinkled on top of the ore bed, after which 2000 cc. of Aero Brand Cyanide solution containing the equivalent of 0.048% NaCN were poured into the cylinder. The rate of flow of cyanide solution through the ore bed was regulated by means of the screw clamp so that the solution finished draining in 5 hours. The pulp was then allowed to stand for 2 hours to permit access of air to the ore. At the end of that time the same cyanide solution was poured over the ore and permitted to percolate through in 13 hours after which 4 hours were allowed for aeration. This completed a 24-hour cycle.

The leaching test was continued for 4 days in all using the same solution throughout. At the end of the test the ore was washed with 2300 cc. of water.

The pregnant solution was assayed each day for gold and silver content and the extractions were determined. The solution was analyzed for cyanide and lime content each day to determine the reagent consumption.

The ratio of solution to solids varied during the test from 1.04 to 1.14:1.

The results of this test are shown in Table 2. These results showed that 52.29% of the gold and 53.65% of the silver in this ore were extracted in the first 24 hours of contact. The rate of extraction of the precious metals during the next 72 hours was slow; in 96 hours the extractions of gold and silver were respectively 72.0% and 47.8%. The consumption of cyanide was 0.78 lb. NaCN per ton and the consumption of lime was 1.97 lb. CaO per ton. The cyanide tailing assayed 0.074 oz./ton gold and 0.54 oz./ton silver. This tailing was screen sized and the products were assayed for gold and silver. The results of this screen analyses are shown in Table 3. From these results it may be noted that there was a concentration of gold in the coarser sizes while the minus 100 mesh products were relatively free of gold.

Table 2

Coarse Grinding Followed by Cyanide Leaching

Time Hrs.	Products	Assay of Products oz./ton		Reagent Consumption lbs./ton		Extraction %	
		Au	Ag	NaCN	CaO	Au	Ag
	Feed	0.265	1.03				
24	Pregnant	0.152	0.34	0.26	1.90	52.29	33.95
48	Pregnant	0.144	0.41	0.50	-	59.95	43.49
72	Pregnant	0.153	0.43	0.61	-	64.15	45.96
96	Pregnant	0.167	0.43	0.78	1.97	72.00	47.80
	Tailing	0.074	0.54				

Table 3

Distribution of Gold and Silver in
Cyanide Leach Residue

Screen Size (mesh)	Weight %	Assay of Products oz./ton		Distribution %	
		Au	Ag	Au	Ag
-20 + 35	19.50	0.17	0.80	44.86	28.80
+ 35 - 65	33.77	0.093	0.57	42.43	35.54
+100	9.13	0.045	0.40	5.55	6.78
+200	14.71	0.013	0.54	2.57	9.23
+325	5.36	0.015	0.42	1.08	4.15
+325	17.48	0.015	0.48	3.51	15.50
	100.00 Comp.	0.074	0.54	100.00	100.00

Test 3 - Fine Grinding followed
by Cyanide Agitation

A 600-gram charge of ore was ground for 20 minutes at a pulp density of 60 % solids in a laboratory steel rod mill. A screen analysis of the ground ore is shown in Table 4 where it may be noted that 98.73 % of the ore was minus 150 mesh.

The pulp was transferred to a 5-gallon wide-mouthed bottle and known amounts of Aero Brand cyanide and lime were added. The pulp was then diluted to 23.5 % solids. The cyanide content of the solution was

0.111 % NaCN equivalent. The bottle was agitated on rolls for 48 hours. At intervals during this period the solution was titrated for cyanide and lime content. Lime was added as required to maintain protective alkalinity.

At the end of 48 hours the pulp was filtered and washed. The pregnant solution and the cyanide residue were assayed for gold and silver content.

The results of this test are shown in Table 5. From these results it will be noted that 98.37 % of the gold and 84.16 % of the silver were extracted in 48 hours by cyanidation. The cyanide tailing assayed 0.004 oz./ton gold and 0.16 oz./ton silver. The consumption of cyanide was 2.98 lbs./NaCN per ton of ore while the consumption of lime was 17.4 lbs. CaO per ton ore.

Table 4

Screen Analysis of Feed to
Cyanidation - 20 Minute Grind

<u>Screen Size</u>	<u>Weight %</u>
+ 100 mesh	0.07
+ 150 "	1.20
+ 200 "	15.67
+ 325 "	25.73
- 325 "	59.33
	<u>100.00</u>

Table No. 5Test No. 3

CONDITIONS AND RESULTS

GRINDING

Time, minutes	20
Percent Solids	60
Barren Solution Added	
NaCN, %	
CaO, %	
Dry CaO Added, Lbs./ton	

AGITATION

Time, hours	48
Percent Solids	23.5
Barren Solution Added	
NaCN, %	0.111
CaO, %	0.05
Pregnant Solution, Off	
NaCN, %	0.064
CaO, %	0.005
Au, oz./ton	0.076
Ag, oz./ton	0.26

REAGENT CONSUMPTION

NaCN, Lbs./ton	2.88
CaO, Lbs./ton	17.4

ASSAYS, OZ./TON

Feed	
Au	0.252
Ag	1.01
Tailings	
Au	0.004
Ag	0.16

EXTRACTION, %

Au	98.37
Ag	94.16

Tests 2 and 4 - Flotation of Stickney Ore

Two flotation tests were run to determine whether or not the sample of ore submitted by Mr. Stickney was amenable to flotation.

In Test 2 a 600-gram charge of ore was ground for 5 minutes at a pulp density of 60 % solids in a laboratory rod mill while Test 4 the time of grinding under the same conditions was 20 minutes. Screen analyses of these grinds are shown in Table 6.

The subsequent flotation procedure was the same for both tests. This was as follows:

The ground pulp was transferred to a laboratory Fagergren flotation machine and diluted to 22 % solids. 0.10 lb./ton of Reagent 301, 0.10 lb./ton of Reagent 208, and 0.135 lb./ton of Aerofloat were added. A concentrate was then skimmed off for a period of 8 minutes. The froth contained only a small amount of sulfides, the concentrate consisting largely of silices.

The concentrate and tailing were assayed for gold and silver content. The results of Tests 2 and 4 are shown in Tables 7 and 8 respectively. A comparison of these results will show that finer grinding increased the recovery of gold and silver. With a 5-minute grind 76.65 % of the gold and 66.44% of the silver were recovered by flotation whereas with a 20-minute grind the recoveries of gold and silver were 88.84 % and 72.01 % respectively. In the former test the flotation tailing assayed 0.058 oz. gold per ton while in the latter the flotation tailing assayed 0.030 oz. gold per ton.

Table 8

Screen Analyses of Feeds to Flotation

<u>Screen Size</u> <u>Mesh</u>	<u>5-Min Grind</u> <u>% Weight</u>	<u>10-Min Grind</u> <u>% Weight</u>	<u>20-Min. Grind</u> <u>% Weight</u>
+ 85	8.82	-	-
#100	20.13	2.43	0.07
+150	17.23	19.79	1.20
+200	12.55	21.25	15.67
+325	10.42	15.08	23.73
-325	31.10	41.45	59.33
	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

Table No. 7

Test No. 2

CONDITIONS AND REAGENTS

Point of Addition	Conditions			Reagents Lbs. Per Ton.		
	Time Mins.	% Solids	PH	301	208	A.F. 31
Grind	5	60				
Flotation	8	22	7.4	0.10	0.10	0.135

Remarks: + 301 designates Reagent 301
 208 " " 208
 A.F.31 " Aerofloat 31

METALLURGICAL RESULTS

Product	% Weight	ASSAYS		% DISTRIBUTION	
		Au Oz./ton	Ag Oz./ton	Au Oz./ton	Ag Oz./ton
Feed	100.00	0.239	0.95	100.00	100.00
Flot. Cons.	3.73	4.90	16.80	76.65	68.44
Flot. Tailing	96.27	0.056	0.35	23.35	31.56

Ratio of Concentration: 26.3 to 1.

Remarks.

Table No. 3

Test No. 4

CONDITIONS AND REAGENTS

Point of Addition	Conditions			Reagents Lbs. Per Ton		
	Time Mins.	% Solids	PH	SOI	EOB	A.F. SI
Grind	20	60				
Flotation	8	22	7.3	0.10	0.10	0.155

Remarks:

METALLURGICAL RESULTS

Product	% Weight	Assays		% Distribution	
		Au oz./ton	Ag oz./ton	Au	Ag
Feed	100.00	0.249	0.99	100.00	100.00
Flot. Cons.	7.26	3.05	9.06	88.84	72.01
Flot. Tailing	92.74	0.030	0.30	11.16	27.99

Ratio of concentration: 13.8 to 1.

Remarks

Test 5 - Flotation, Desliming and Cyanide Leaching

In a letter dated August 2, 1938 our Mr. Brown suggested that we run a test on Mr. Stickney's ore to determine the merits of a scheme of treatment involving flotation, desliming the flotation tailing, discarding the slimes and leaching the sands with cyanide.

The various operations carried out in this test are described below:

Flotation of Feed

In order to obtain sufficient material for the subsequent operations carried out in this test it was necessary to run three flotation tests. The procedure for each test was as follows:

A 600 ga. charge of ore was ground at a pulp density of 60 % solids in a laboratory rod mill for 10 minutes in the presence of 0.10 lb./ton Reagent 208 and 0.155 lb./ton Aerofloat 51. The pulp was transferred to a laboratory Fagergren flotation machine, diluted to 22 % solids, and 0.10 lb./ton Reagent 301 was added. A rougher concentrate was then skimmed off for a period of 8 minutes.

The three rougher concentrates thus obtained were combined, returned to the flotation machine and cleaned using 0.05 lb./ton Reagent 301 and 0.05 lb./ton Reagent 208. The time required for cleaning was 4 minutes.

The flotation results are shown in Table 9. A screen analysis of the flotation feed is shown in Table 8.

From these results it may be noted that 82.40 % of the gold and 61.34 % of the silver in this ore were recovered in a cleaner concentrate assaying 33.91 oz./ton gold and 102.6 oz./ton silver.

The composite of the cleaner concentrate and the cleaner tailing, representing the rougher concentrate, contained 87.26 % of the gold and 71.41 % of the silver. By calculation, the rougher concentrate assayed 3.71 oz./ton gold and 12.33 oz./ton silver.

The rougher flotation tailing assayed 0.034 oz./ton gold and 0.31 oz./ton silver.

Table No. 2

Test No. 5

CONDITIONS AND REAGENTS

Point of Addition	Conditions			Reagents Lbs. Per Ton		
	Time Mins.	% Solids	PH	501	208	A.F. 31
Grinding	10	80			0.10	0.135
Rough. Float	8	22		0.10		
Cleaning	4	4		0.05	0.05	

Remarks: * Reagent 208
Reagent 501
Aerofloat 31

METALLURGICAL RESULTS

Product	% Weight	Assays Oz./ton		% Distribution	
		Au	Ag	Au	Ag
Feed	100.00	0.251	1.02	100.00	100.00
Cl. Conc.	0.61	33.91	102.6	82.40	61.34
Cl. Tail	5.30	0.23	1.94	4.86	10.07
R. Tail	94.09	0.054	0.31	12.74	28.59

Ratio of Concentration: Cl. Conc. 163 to 1; R. Conc. 17 to 1

Remarks: R Conc. (Cl. Conc. + Cl. Tail) 3.71 oz./ton gold, 12.33 oz./ton silver.

Desliming Flotation Tailings

The rougher tailings from the three flotation tests were combined in a cylindrical vessel. The pulp column was 9-1/2" deep and 8-1/2" in diameter, and contained 18 % solids. Desliming was carried out as follows:

The pulp was agitated and allowed to settle for 1 minute. The slimes were then siphoned off. The residual sands were diluted with fresh water to the original volume and the desliming operation was repeated.

The results of the desliming operation are shown in Table 10.

From these results it may be noted that there was a concentration of gold in the sands. The product assayed 0.042 oz./ton gold and contained 86.35 % of the gold in the flotation tailings. The slimes, representing 30.78 % by weight of the flotation tailings assayed 0.015 oz./ton gold and contained 13.65 % of the gold. On the basis of the original feed to flotation 1.74 % of the total gold was rejected in the slimes.

The sands and slimes assayed practically the same as regards silver content.

Table 10

Desliming Flotation Tailings

Product	Wt. %	Assays Oz./ton		Distribution %	
		Au	Ag	Au	Ag
Feed (R.Tail)	100.00	0.034	0.31	100.00	100.00
Sands	69.22	0.042	0.31	86.35	70.00
Slimes	30.78	0.015	0.30	13.65	30.00

Screen Analyses of Sands and Slimes

The sands and slimes were screen-sized. The results are shown in Table II.

TABLE II
Screen Analyses

Screen Size	Sands Wt. %	Slimes Wt. %	* Flot. Tailing Wt. %
+ 100 Mesh	8.40	-	2.38
+ 150 "	26.57	-	18.59
+ 200 "	32.76	-	22.58
+ 325 "	22.67	0.80	15.37
- 325 "	14.60	99.40	40.81
	100.00	100.00	100.00

* Calculated from Sands and Slimes.

The above results show that the slimes were practically all minus 325 mesh. The desliming operation removed 75 % of the minus 325 mesh slimes in the flotation tailing.

Cyanide Leaching of Sands

The sands were leached with a cyanide solution containing 0.057 % NaCN equivalent according to the procedure described for Test 1. The dilution ratio varied from 1.9 to 1 at the start to 1.4 to 1 at the finish of the test.

The results of cyanide leaching are shown in Table 12.

These results show that 80.84% of the gold and 43.01 % of the silver, in the flotation tailing sands were extracted by cyanide leaching in 72 hours; there was no increase in extraction after an additional 24 hours of contact. On the basis of the original feed, the extractions of gold and silver by cyanidation were respectively 8.89 % to 9.61 %.

Table 12.

Leaching Sands from Flotation Tailing

Time Hrs.	Products	Assay of Products Oz./ton		Reag. Cons. lb./ton		Extraction %	
		Au	Ag	NaCN	CaO	Au	Ag
	Feed (Sands)	0.042	0.51	-	-	-	-
24	Pregnant	0.010	0.06	0.28	2.54	45.51	33.64
48	Pregnant	0.015	0.08	0.40	-	61.68	44.27
72	Pregnant	0.021	0.09	0.45	-	80.84	48.01
96	Pregnant	0.021	0.09	0.46	2.70	80.84	48.01
	Cyan. Tailing	0.008	0.16	-	-	-	-

Summary of Test 5

The results of Test 5 are summarized in Table 13.

These results show that by flotation alone 87.26 % of the gold and 71.41 % of the silver in Stickney ore were recovered. By leaching the deslimed flotation tailings with cyanide the additional percentages of gold and silver recovered were 8.89 and 9.61 respectively. Thus the overall recoveries of gold and silver were respectively 96.15 % and 81.02 %.

The composite of the slimes and cyanide residue, representing the waste product, assayed 0.010 oz./ton gold and 0.20 oz./ton silver.

The reagents consumed during cyanidation were 0.29 lb. of NaCN equivalent of 1.75 lbs. of lime, per ton of original ore.

Table No. 15

Test No. 5

Recapitulation of Test 5
Details of flotation treatment shown in Table 9

METALLURGICAL RESULTS					
Product	% Weight	Assays Oz./ton		% Distribution	
		Au	Ag	Au	Ag
Feed	100.00	0.251	1.02	100.00	100.00
Cl. Conc.	0.61	33.91	102.60	92.40	61.34
Cl. Tail.	5.30	0.25	1.94	4.36	10.07
Slimes	28.96	0.015	0.30	1.74	8.52
Preg. Sol.		0.021	0.09	8.89	9.61
Cyanide Residue	66.15	0.08	0.16	2.11	10.46

Ratio of Concentration: 165 to 1.

Remarks: Composite of slimes plus cyanide residue assayed
0.010 oz./ton Au and 0.20 oz./ton Ag

Summary:

1. The sample of ore submitted by Mr. A. W. Stickney was examined microscopically. It was found to contain only a very small amount of sulfide minerals. The gold present in this ore was found to be very fine and an appreciable proportion of it was tarnished. Some of the gold was found attached to gangue thus indicating that fine grinding might be required to liberate the values.
2. A cyanide leach of the minus 20 mesh ore extracted 72.0 % of the gold and 47.8 % of the silver in 4 days. A screen analysis of the cyanide leach tailing and the assays of the products thus obtained showed a concentration of gold in the coarser sizes while the minus 100 mesh products were relatively free of gold.
3. By grinding the ore to 98 % minus 150 mesh and cyaniding by agitation in an open bottle, 98.37 % of the gold and 84.16 % of the silver were extracted in 48 hours. The cyanidation tailing assayed 0.004 oz./ton gold and 0.16 oz./ton silver. The consumption of cyanide was 2.98 lbs./ton of ore and the consumption of lime was 17.4 lbs./ton of ore.
4. The recovery of gold and silver by flotation was influenced by the fineness of grinding.

With a 5-minute grind (84 % minus 150 mesh) 76.65 % of the gold and 66.44 % of the silver were recovered in a rougher flotation concentrate assaying 4.93 oz./ton gold and 16.86 oz./ton silver; the flotation tailing assayed 0.068 oz./ton gold and 0.35 oz./ton silver.

With a 10-minute grind (78 % minus 150 mesh) 87.26 % of the gold and 71.41 % of the silver were recovered in a rougher flotation concentrate assaying 5.71 oz./ton gold and 12.33 oz./ton silver; the rougher flotation tailing assayed 0.034 oz./ton gold and 0.31 oz./ton silver.

With a 20-minute grind (98 % minus 150 mesh) 88.84 % of the gold and 72.01 % of the silver were recovered in a rougher flotation concentrate assaying 5.05 oz./ton gold and 9.86 oz./ton silver; the flotation tailing assayed 0.030 oz./ton gold and 0.30 oz./ton silver.

In all tests 0.10 lb./ton of Reagent 301, and 0.10 lb./ton of Reagent 208 and 0.135 lb./ton of Aerofloat 51 were used, and in all tests the time of float was 8 minutes.

5. The relative merits of cyanidation and flotation may be determined by a comparison of Tests 3 and 4. Thus, with the same grind (98 % minus 150 mesh) 98.57 % of the gold was extracted by cyanidation, while only 88.84 % of the gold was recovered by flotation.
6. By a scheme of treatment involving flotation, desliming the flotation tailings and cyanide leaching of the residual sands, overall recoveries of 96.15 % of the gold and 81.02 % of the silver were obtained.

The additional recoveries of the precious metals obtained by leaching the sands from the flotation tailings were 8.39 % gold and 9.61 % silver. These extractions were obtained after 72 hours of leaching. The reagents consumed were 0.29 lb. of sodium cyanide and 1.75 lbs. of lime per ton of original ore.

The desliming operation on the flotation tailing removed 75 % of the minus 325 mesh material in that product. The slimes were relatively low in gold, assaying only 0.015 oz./ton.

The composite of the slimes and the cyanide residue, representing the overall tailing, contained 0.010 oz./ton gold and 0.20 oz./ton silver.

Conclusions:

Our test work on the ore sample submitted by Mr. Stickney showed that the highest recoveries of gold and silver were obtained by cyanidation of the finely ground ore.

However, if the construction of an all slime cyanidation plant is not justified, then the scheme of treatment involving flotation, desliming and sand leaching, suggested by Mr. Brown, should warrant consideration. The recovery of gold obtained by this procedure was 96.15 % as compared with a recovery of 98.57 % by all slime cyanidation.

AMERICAN CYANAMID COMPANY

(Signed) N. Hedley

N. Hedley
Ore Dressing Laboratory

September 12, 1938

ELS

April 30, 1942

METALLURGICAL TEST ON A GOLD ORE

The ore tested was taken from a sample of a 4 foot quartz vein at the Juniata Mine, Aurora, Nevada. The sample weighed 8 pounds and is almost all white quartz with a small amount of blue sulphide present hardly visible with the naked eye. As the silver content is very small it is neglected in testing.

CYANIDE TEST NO. 1

ORE - 200 gr., minus 115 mesh, ground in pulverizer.

SOLUTION - 400 cc., 3.6 lb. NaCN and 2.9 lb. CaO.

AGITATION TIME - 48 hours.

NaCN CONSUMED - 0.8 lb./ton

NaCN REMAINING - 5.2 lb./ton

CaO CONSUMED - 2.0 lb./ton

CaO REMAINING - 1.9 lb./ton

ASSAYS -

	Gold oz./ton
Heads	0.23
Tails	0.02
Solution	0.11

RECOVERY - 91.5 %

Closure-

	Gold oz./ton
Tails	0.02
Solution	0.22
Total	0.24
Heads	0.23
Difference	+0.01

RECOMMENDATIONS -

Finer grinding would undoubtedly give better recovery but flotation would be the better method to use on the ore. Try flotation tests.

FLOTATION TEST NO. 1

ORE - 750 gm., minus 20 mesh.

GRIND - Screen out minus 100 mesh material and grind oversize in laboratory ball mill 30 minutes. Add 1.5 lb./ton Na_2CO_3 to mill to give ph of 8. Pulp density - 50% in all tests.

MACHINE - Deeth Thompson Laboratory flotation machine was used in all tests. Pulp density - 40% in all tests.

TIME - Rougher Concentrate -

Conditioning - 5 minutes
 Frothing----- 3 minutes

Cleaner Concentrate -

Conditioning - 3 minutes
 Frothing----- 3 minutes

REAGENTS CONSUMED-

Pine Oil	Rougher Treatment	Cleaner Treatment
Potassium Pentasol Xanthate	0.16 lb./ton	0.16 lb./ton
	0.05 lb./ton	

RESULTS - ASSAYS -

	Gold oz./ton
Heads	0.28
Concentrate	23.58
Middling	1.65
Tails	0.08

RATIO OF CONCENTRATION -

Concentrate -- 223 to 1
 Middling ----- 59.8 to 1

RECOVERY - 65.2%

SCREEN ANALYSIS OF TAILS - 100 gms.

Mesh	Weight	%	Accumulative %
+100	4.1 gm.	4.1	4.1
+150	37.1 "	37.1	41.2
+200	4.2 "	4.2	45.4
-200	54.6 "	54.6	100.00

RECOMMENDATIONS -

Try grinding to 100% minus 150 mesh, using Potassium Amyl Xanthate, and lowering the ratio of concentration.

FLOTATION TEST NO. 2

ORE - 750 gm., minus 20 mesh

GRIND - Screen out minus 150 mesh material and grind oversize 75 minutes

In laboratory ball mill. Add 1.5 lb./ton Na_2CO_3 , Ph = 8.

TIME -

Conditioning
Frothing

Rougher Treatment
5 minutes
3 minutes

Cleaner Treatment
3 minutes
3 minutes

REAGENTS CONSUMED -

Pine Oil
Potassium Amyl Xanthate

Rougher Treatment
0.24 lb./ton
0.08 lb./ton

Cleaner Treatment
0.16 lb./ton
0.04 lb./ton

RESULTS - ASSAYS -

Heads
Concentrate
Middling
Tails

Gold oz./ton
0.23
(Lost)
0.05
0.015

Silver oz./ton
0.51
(Lost)
0.29
0.04

RATIO OF CONCENTRATION -

Concentrate - 58.2 to 1
Middling ---- 19.5 to 1

RECOVERY -

Gold ----- 93.5%
Silver ----- 92.2%

SCREEN ANALYSIS OF TAILS - 500 gm.

Mesh	Weight	%	Accumulative %
+100	0.1 gm	---	---
+150	10.3 "	3.4	3.4
+200	55.2 "	16.4	21.8
-200	234.4 "	78.1	99.9

RECOMMENDATIONS -

Try coarser grind and leaching of sand tails.

FLOTATION TEST NO. 3

ORE - 750 gm., minus 20 mesh.

GRIND - Screen out minus 65 mesh material and grind oversize 20 minutes in laboratory ball mill. Add 1/5 lb./ton Na_2CO_3 to mill. Ph = 8.

TIME -

	Rougher Treatment	Cleaner Treatment
Conditioning	5 minutes	3 minutes
Frothing	5 minutes	5 minutes

REAGENTS CONSUMED -

	Rougher Treatment	Cleaner Treatment
Pine Oil	0.24 lb./ton	0.16 lb./ton
Potassium Amyl Xanthate	0.06 lb./ton	0.04 lb./ton

RESULTS - ASSAYS -

	Gold oz./ton
Heads	0.25
Concentrate	26.6
Middling	1.05
Tails	0.08

RATIO OF CONCENTRATION -

Concentrate - 242 to 1
Middling ---- 100 to 1

RECOVERY - 85.2 %.

SCREEN ANALYSIS OF TAILS - 200 gms.

Mesh	Gold oz./ton	Weight	%	Accumulative %
+65	0.24	6.5 gm.	3.2	3.2
-65	0.20	7.7 "	8.9	7.1
-80	0.13	29.3 "	14.6	21.7
-100	0.11	61.9 "	31.0	52.7
-150	0.04	94.6 "	37.2	100.0

RECOMMENDATIONS -

Try Cyanide leaching of the +100 mesh product of tails. A lower ratio of concentration should improve the recovery.

CYANIDE TEST NO. 2

ORE - 112 gm. of plus 100 mesh portion of 421 gm. tails from Flotation
Test No. 3

SOLUTION - 250 cc., 2 lb. NaCN and 2 lb. CaO.

TIME - 5 day intermittent leach

NaCN CONSUMED - 3.4 lb./ton

NaCN REMAINING - 0.3 lb./ton

CaO CONSUMED - 3.4 lb./ton

CaO REMAINING - 0.3 lb./ton

Approximately 1/2 of solution evaporated.

ASSAYS -

(calculated) Heads	Gold oz./ton
Tails	0.17
Solution	0.09
	0.08

RECOVERY - 47%

RECOMMENDATIONS -

A longer leaching period could be tried but it is very doubtful that the recovery would be materially increased. The material is too coarse to successfully leach.

Try another flotation test using a grind of 100% minus 100 mesh and a low ratio of concentration.

6

FLOTATION TEST NO. 4.

ORE - 750 gm., minus 20 mesh.

GRIND - Grind all of pulp to a 99.3% minus 100 mesh in ball mill for 80 minutes. Add 1/5 lb./ton Na_2CO_3 to give pH of 8.

TIME -

Conditioning	Rougher Treatment	Cleaner Treatment
Frothing	7 minutes	5 minutes
	5 minutes	4 minutes

REAGENTS CONSUMED -

Pine Oil	Rougher Treatment	Cleaner Treatment
Potassium Amyl Xanthate	0.24	0.16
	0.08	0.04

RESULTS - ASSAYS -

	Gold oz./ton
Hulls	0.23
Concentrate	3.82
Middling	0.10
Tails	0.02

RATIO OF CONCENTRATION -

Concentrate - 18.7 to 1
Middling ---- 16.5 to 1

RECOVERY - 91.3 %

SCREEN ANALYSIS OF TAILS - 300 gms.

Mesh	Gold oz./ton	Weight	%	Accumulative %
+100	No assay	2.0 gm.	0.7	0.7
-100	0.04	81.0 "	26.6	27.3
-150	0.02	65.0 "	21.3	48.6
-200	0.02	157.0 "	51.4	100.0

RECOMMENDATION -

Further testing on the rougher concentrate should be done in an attempt to improve the ratio of concentration.

GENERAL CONCLUSIONS

With a grind of 100% minus 100 mesh one could expect a plus 90% recovery. With careful control in refloating the rougher concentrate a concentrating ratio of about 50 to 1 probably would be the result. As the gold values are very minutely and intimately distributed through the ore, a finer grind would give a higher ratio of concentration. The grinding costs and decreased daily tonnage in mill capacity created by grinding to finer than minus 100 mesh are factors to be considered and weighed against the value of the additional percentage of gold and silver recovery in the concentrate. Increased amounts of the collector also might raise the total recovery. Soda ash, to maintain alkalinity, Pine Oil, as a frother, and Potassium Amyl Xanthate, as a collector, are the necessary reagents.

Respectfully submitted

Hubert B. Chessher, Jr.
333 Gazette Bldg.
Reno, Nevada

JUNIATA ORE FLOTATION TEST #2
Aurora, Nevada
by HEC Jr. (March, 1942)

RESULTS -

ASSAYS -

	Oz. Au/ton
Heads	0.23
Concentrate - Lost	
Middlings	0.05
Tails	0.015

RATIO OF CONCENTRATION -

Concentrate	58.2 to 1
Middlings	19.5 to 1

RECOVERY -

93.5 %

GRIND -

96.8% - Minus 150 Mesh
78.2% - Minus 200 Mesh

JUNIATA MINE ESTIMATED MINE AND MILL COSTS AND PROFITS
AURORA MINING DISTRICT, MINERAL COUNTY, NEVADA

DAILY MILL RECOVERY

60 tons daily @ \$9.00 x 85% Recovery \$ 459.00

DAILY MINE AND MILL EXPENSES

60 tons Marketing Concentrates @ \$0.50	\$ 30.00	
15 Laborers @ \$6.00, plus 10% tax	99.00	
1 Mine Supt. @ \$8.00 per day plus 10% tax	8.80	
1 Foreman @ \$7.00 per day plus 10% tax	7.70	
1 Mill Supt. at \$8.00 per day plus 10% tax	8.80	
Power Consumption	35.00	
Gasoline, Oil and Lubricants, etc.	15.00	
Chemicals, Supplies, etc.	15.00	
Royalty - 60 tons @ \$0.50	33.00	
Repairs, replacements, etc.	25.00	
Powder, fuse, steel and bits	51.10	
Daily Gross Profit	130.00	
	<u>Gross</u>	
	\$ 459.00	\$ 459.00

ANNUAL GROSS PROFIT

300 Days per annum @ \$130.00 per day \$39,000.00

DEVELOPMENT COSTS

Running 3 faces (drifts) on ore, one shift daily, (with 2 men in each face) advancing 3 ft. per face per shift @ \$8.00 per foot; 3 faces x 3 ft. x \$8.00 per ft. x 300 days \$ 21,600.00

Raising at 6 points with an average height of 250 ft. each; 1500' at \$6.00 per ft.

Total Development Costs

9,000.00
\$ 30,600.00

COST OF ORE EXTRACTED FROM DEVELOPMENT

Drifts: one shift per day in 3 faces x 3 ft. x 5' wide x 7' high x 300 days = 94,500, less 1/5 assorted out -- 75,600 cu. ft. divided by 13 cu. ft. = 5815 tons, costing \$21,600 --

\$ 3.71 per ton

Raises: one shift daily - 6 raises x 250' high x 5' x 7' -- 52,500 cu.ft., less 1/5 assorted out = 42,000 cu.ft. divided by 13 cu.ft. -- 3200 tons costing \$9,000.00

\$ 3.07 per ton

AVERAGE COST PER TON

5815 tons x \$3.71 = \$21,573.65

3200 tons x \$3.07 = \$ 9,824.00

9015 tons cost = \$31,397.65

AVERAGE COST

\$ 3.48 per ton

NOTE: By operating 2 shifts per day in each of the three drifts and in the raises, the development work (if all is in ore) would furnish 60 tons daily, which is sufficient mill feed for the 60 ton daily mill operation; however, this would increase above estimated mine and mill costs to where a daily gross profit might be but very small, if mine costs are \$3.48, mill costs \$2.00, royalty \$0.50, overhead \$0.50, and marketing costs \$0.50 = \$7.04 per ton.

REPORT OF THE GENERAL MANAGER
OF
AURORA CONSOLIDATED MINES COMPANY
For the Year 1916

Goldfield, Nevada, December 31st, 1916.

Mr. George Wingfield, President, and
The Board of Directors,
The Aurora Consolidated Mines Company

Gentlemen:

The following report, covering operations for the year ending December 31st, 1916, is submitted for your consideration.

Your property has been increased by the purchase of the Juniata Extension and Rambler Claims, comprising approximately 55 acres.

Within the year the total production of your Company was \$501,041.14, resulting from the treatment of 175,270 tons of ore. The gross profit for the year was \$71,005.89. Interest on indebtedness to the amount of \$31,224.40 was paid. The net operating profit for the year was \$39,781.29.

An advance of 5428 feet of development work was made within the year at a cost of \$7.92 per foot.

The details of production, cost and realization, are shown in the tables immediately following. (Omitted)

GENERAL CONDITIONS

The indebtedness of your company, which at the beginning of the year was \$400,000.00, has been reduced within the year to \$358,700.00. In February the condition of the batteries in your Milling Plant became so bad it was necessary to suspend operation for a period of forty days while new foundations were being set. Since this change the property has been operated at maximum capacity and with very excellent costs.

MINING.

\$27,162.47 was expended upon development work which resulted in an advance of 5428 feet, divided as follows:

Drifts and Cross-cuts.....	1687 feet
Raises.....	1741 feet

This is equivalent to one foot of development work for each 50.5 tons mined.

The segregation of tons produced shows:

143,688 tons from stoping operations.
6,108 tons from development operations.
23,494 tons from dumps.
173,290 tons total production.

The following efficiencies were obtained:

Tons per shift..... 9.4
Tons per total machine shift..... 25.27
Tons per total stoping shift..... 26.70

MILLING

Your milling plant has been in operation eighty-seven per cent of the time and has averaged 13.48 tons per stamp. The reduction in the cost of milling has not been so great as was anticipated at the beginning of the year on account of the extraordinary repairs to battery foundations and on account of the continued high cost of supplies. The operation of the mill, however, has been satisfactory.

CONDITIONS AT CLOSE OF YEAR

HUMBOLDT VEIN--WEST OF SHAFT TO HUMBOLDT FAULT

Above the second level in this section of the mine, broken ore in stopes, ore remaining in pillars and ore next to the Humboldt Fault amounts to approximately 10,000 tons.

Conditions below the second level to the main haulage tunnel level remain practically the same as at the beginning of the year. 25,000 tons of ore are available in this section. This grade of this ore is lower than that produced above the second level.

HUMBOLDT VEIN --SEGMENT BETWEEN HUMBOLDT AND PROSPECTUS FAULTS

Development in this segment through the Stuart tunnel amounted to 73 feet at a cost of \$7.55 per foot. This work gave no encouraging results. The vein at the elevation of this tunnel was badly broken and leached. Development work on the third level of the Humboldt shaft now being done will cut this segment soon. This part of the Humboldt vein should be productive since it is bounded on both sides by productive stopes.

HUMBOLDT VEIN--WEST OF THE PROSPECTUS FAULT

No additional lateral work was done in this section. There are approximately 10,000 tons broken ore and 20,000 tons blocked out in this part of the mine.

HUMBOLDT VEIN--SHAFT PILLAR

Stoping operations have started in this pillar above the second level. The tonnage available remains the same as at the beginning of the year - approximately 50,000 tons.

HUMBOLDT VEIN--EAST OF SHAFT

There has been performed 524 feet of development work at a cost of \$7.20 per foot in this section. There have been produced from stoping operations 87,942 tons - worth \$3.20 per ton - and there remains 185,972 tons positive ore and 14,875 tons probable ore, and 63,975 tons ore broken in stopes.

For the purpose of disclosing probable ore below the haulage tunnel, a winze near the east end line of your property has been sunk 100 feet. The result was disappointing since neither the winze nor the lateral work therefrom disclosed any ore.

WAMPUS CAT VEIN

The Wampus Cat vein lies parallel with and between the Humboldt and Prospectus faults.

231 feet of cross-cutting from the third level of the Humboldt Shaft was necessary to cut the vein - and to date 200 feet of drifting and 30 feet of raising has been done on the vein at this elevation. The ore is contained in a streak four feet in width which averages \$4.50 per ton.

JUNIATA VEINS

An advance of approximately 1800 feet of development work was made in the Juniata Mine. The result of this work has been extremely disappointing since it has not disclosed any ore of the grade expected nor is there anything to indicate that there will be any increase in the value of this ore with further development work. The development work from the main haulage tunnel indicates that this tunnel is 200 feet below the ore horizon. None of the raises from this tunnel on the vein disclosed any ore within 200 feet of this elevation. Drifting east from the main haulage tunnel shows the vein increasing in strength and width but carrying no ore. Developments and stoping operations above the lower Juniata Tunnel have produced no ore even approximating the grade anticipated.

WIDE WEST VEINS

The Murphy Tunnel was advanced within the year and has disclosed the Murphy vein, the Sand Lot vein and two smaller veins, none of which has contained any ore. Developments from this tunnel have been discontinued.

LEASING

It has been decided to throw open to lessees all that portion of your Company's estate on last Chance, Middle and Silver Hills. Under the lease agreements the Company will furnish all material and supplies except explosives to lessees free and after deducting the cost of hauling, and milling, and metallurgical losses, will divide the remaining profit with the lessee.

ORE RESERVES

	Broken Ore in Stopes Tons	Positive Ore Tons	Probable Ore Tons	Total Tons
Humboldt Vein.....	67,575	178,948	30,460	276,983
Junata.....	3,310	58,992	14,925	47,224
Wampus Cat.....	800	1,508	2,308
Dumps.....	10,460	10,460
Totals.....	70,885	219,200	46,893	536,978

The grade of ore for the past few months has been such as to meet operating expenses and to pay the interest on indebtedness and the above estimate of ore reserves is based on material of slightly lower grade than the average for this year.

To Mr. R. A. Hardy, General Superintendent, is due the greater portion of the credit for the year's performance. In the face of extremely discouraging conditions he has been able to maintain a high degree of efficiency through his organization and to obtain lower costs than were ever deemed possible.

Respectfully submitted,

J. W. HUTCHINSON,

General Manager.

(From Pages 12, 13 and 14)

The Aurora Consolidated Mines Company

Following this report will be found the annual report of the Aurora Consolidated Mines Company, containing details of operation.

Within the year 175,477 tons of ore of \$2.319 grade were produced from which resulted an operating loss of \$15,788.26.

Interest on indebtedness was paid to the amount of \$18,279.12, making a total loss for the year of \$37,067.58.

General Conditions

In August it became apparent that the ore exposed in your property would not yield a profit. It was deemed advisable to push development work as rapidly as possible toward the old Juniata workings for the purpose of proving or disproving the stories regarding the vein and ore values in this section which has been caved and under water since 1872.

On the 4th of November an intermediate 35 feet above the main haulage tunnel encountered the shaft, which fortunately had not caved for 70 feet above this intermediate and gave access to what is believed to be the second level of the old Juniata mine. At this elevation the vein is exposed for 260 feet, of which 130 feet had been stoped in the early days. The vein is eight feet wide at the most westerly exposure and gradually widens to 18 feet in the most easterly exposure, where it has been square set and filled by the early day operators. At this elevation in the west end there is a 90-foot unstoped section eight feet wide, out samples from which average \$4.50. Samples from the fill range from \$4.00 to \$6.00, and one out across the back for 10 feet averages \$20.00. The most encouraging features of the exposure are: the vein apparently widens to the east and also widens with depth.

A cross-cut is being driven from the intermediate and the haulage tunnel is also being extended to cut the vein, but it is not believed possible to begin production on any scale until after the first of the year. During 1916 the Juniata Extension Claim was purchased for \$1,000.00, which gives your Company 5,000 feet along the strike of the vein. However, it is impossible to locate the vein on surface on its eastern extension, since it is obscured by the recent flow of rhyolite. The haulage tunnel should cut this vein in the latter part of March, and if the conditions obtaining on the second level persist to this depth, this vein will prove very profitable to your Company.

Silver Lining Claims

For some months negotiations have been pending between the owners of this ground and your management looking to the leasing of this ground to your Company. These claims adjoin your property on the east and the main Humboldt vein crops in them for 1500 feet. On December 21st an agreement was signed which provides that the profit remaining after deducting a stipulated amount for costs and losses shall be divided equally between your Company and the owners of the ground. The haulage tunnel was immediately extended into these claims and by January 1st an advance of 100 feet was made. There is very little development work done in these claims, but the vein is exposed 200 feet above your haulage tunnel by a tunnel which indicates an ore chute 250 feet long averaging \$10.00 over drift width. In addition a raise from your haulage tunnel to surface at the end-line of this ground indicates much better ore than has ever been extracted from your property. From present exposures which do not limit the possibility of the ground it seems safe to state that 75,000 tons of ore of average value of \$8.00 will be extracted.

The encouraging development in the Juniata ground, together with the lease on the Silver Lining Claims, gives your Company the most promising outlook for profitable operations that it has ever had.

(From Pages 29, 30, and 31)

Juniata Vein

Statements made in last year's report have been borne out by operations since these veins have yielded no ore of the grade expected and are too small (four to six feet wide) in the west end of the property to yield a profit.

In August a drift was started 85 feet above the haulage tunnel for the purpose of connecting the old Juniata shaft and workings which have been caved and under water since 1872. This work is east of any work heretofore done by your Company. In November the connection with the shaft was made. Fortunately the shaft had not caved for 70 feet above the drift and gave access to what is believed to be the second or 200 foot level of the old Juniata mine.

The faulting in this section of your property is very complicated. All work previously done by your Company in the west end of this section has been on the hanging wall of the Juniata fault, which dips west. In making the connection with the Juniata shaft a strong fault, dipping east, was crossed, which is also exposed in the old Juniata workings. This fault has dislocated the veins to an undetermined extent and from the work done so far it is not possible to state which one of the three veins of this group is exposed on the hanging wall side of the east fault in the old workings. This is the vein which was stoped profitably in the early seventies.

The number one vein between the two faults is exposed in the drift.

85 feet above the haulage tunnel and also this same segment is exposed for a distance of 90 feet in the old workings. Both exposures indicate a width of eight feet and a grade of \$4.50 per ton. On the hanging wall side of the east fault in the old workings a vein is exposed for 170 feet which has been stoped (by square setting) and filled by the early day operators for a length of 130 feet. How far to the east these workings extend is not known, since they are gaved and inaccessible beyond this point. This vein is from 12 to 18 feet wide and has been stoped over these widths. It is the strongest vein in this section and has every appearance of persistence in both dip and strike. The condition of the old workings does not permit an accurate sampling to be made, but cuts over 10 foot widths indicate a value ranging from \$8.00 to \$20.00 per ton. The stopes are filled with quartz sorted from broken ores and samples indicate a value of \$5.00 per ton and it is believed there are 10,000 tons of broken ore in fills.

The haulage tunnel has been advanced 100 feet on the number one vein towards the east fault and should intersect it within 50 feet. The number one vein in this distance has increased from 8 to fifteen feet in width and corroborates the information gained from the old workings that the veins are stronger on their eastern extensions. At this elevation, however, the quartz is not ore, but since progress to the east will approach surface the grade should improve as the tunnel advances. It is impossible to state what the future of this development will be, but it is certainly the most promising ever exposed in your property.

Lease on Silver Lining Claims

This group of three claims adjoins your property on the east and in one of them the outcrop of the main Humboldt vein is exposed for 1500 feet. On December 21st an agreement was signed with the owners which provides that the profit remaining after deducting a fixed amount for costs and losses, shall be divided equally between the owners and your Company. The amount to be deducted varies from \$3.00 to \$3.50 per ton, depending on actual results obtained. The haulage tunnel was immediately advanced into this ground and at the close of the year an advance of 100 feet had been made. The ore resulting from this advance averaged \$4.50 and raises indicate that within 70 feet of the haulage tunnel the grade has improved to \$8.00 per ton.

With the exception of an incline shaft 100 feet deep near the end-line of your property, on each side of which the vein has been stoped over a narrow width for 50 feet, and one tunnel on the vein connecting with this stope no development work has been done in these claims. Mr. J. B. Kendall, Mine Superintendent for the Goldfield Consolidated Mines Company, extracted this ore from this stope and states he produced 1000 tons of ore which milled \$30.00 per ton. Samples from the bottom of this stope and from the tunnel indicate a shoot of ore 250 feet long at this elevation which will average \$10.00 over drift width. In addition a raise from your haulage tunnel to surface at the east end-line of your property also shows good ore, and there is blocked out on two sides 75,000 tons of ore which should average \$8.00 per ton. This tonnage does not limit the possibilities of the ground, and it is entirely probable that further development work will increase this tonnage materially.

Conclusion

Were it not for the lease on the Silver Lining Claims and the encouraging development in the Juniata mine there would be little chance for immediate profitable operation of your property. These two conditions are so much better than any which has obtained in the past, it is felt the ensuing year will be the most profitable in the history of your Company.

REPORT OF THE PRESIDENT

Reno, Nevada, December 31, 1918.

TO THE STOCKHOLDERS OF THE GOLDFIELD CONSOLIDATED MINES CO.:

From the accompanying reports of the General Manager and the Secretary and Treasurer, it will be noted that during the past year the operation of your company's property at Goldfield resulted in the earnings and expenses being about even. During the year offers were received of 5% premium for the gold output, both of your company and that of the Aurora Consolidated Mines Co. However, the Treasury Department requested that, as a patriotic duty, the gold output be marketed through the U.S. Mints, and, of course, the company was glad to comply and forego the additional revenue which would otherwise have been received.

It now must be frankly admitted that the time has arrived when your company can no longer operate its Goldfield property at a profit by the methods used in the past and it will now be the attempt of the management to evolve some scheme whereby the remaining scattered and small bodies of ore can be stoped and shipped sporadically to the smelters without the company taking the risk of large loss by attempting to keep up its staff and heavy overhead expenses.

No great amount is now being expended for exploration and development work but the company is still in the field looking for other properties of merit and it is the present intention to continue to do this throughout the period of liquidation, as long as it must keep a staff, anyway, to look after this work. It will, in all probability, take several years' time to turn all of the assets of your company into cash for final distribution and it is now the idea of the Board of Directors that during that time, it may as well attempt to find some other property of merit that would prolong the life of the company indefinitely and furnish the means to pay further dividends to the stockholders, other than merely a distribution of assets.

Your examination of the report of the Secretary and Treasurer will disclose the fact that your company has advanced a large amount to the Goldfield Consolidated Mines Exploration Co., all of the capital stock of which company belongs to your company. This amount is almost entirely invested in two mining properties, (one in Arizona and one in California), both of which have been extensively developed, and also the cost of compiling the data concerning the numerous mines and prospects that have been presented for consideration.

The future policy with regard to the operation of the Goldfield property, and the properties mentioned in the last paragraph, will depend entirely upon the general economic conditions in the country during the next few months.

The equipment of the Aurora Consolidated Mines Co. will be disposed of as rapidly as possible, the assets of the company turned into cash and the proceeds applied on its debt to your company. Despite the opinions of the best engineers that could be obtained, when the property was first acquired, and the encouragements that have been given since, the results of this investment have been most disappointing and a serious loss has resulted where it seemed that there was every prospect for a brilliant future and large profits for yourselves.

The office of the Secretary and Treasurer has been moved to Reno, Nevada, and consolidated with other offices there in order to reduce all administration expenses to a minimum.

Respectfully,

GEO. WINGFIELD,

President.

REPORT OF THE GENERAL MANAGER

Goldfield, Nev., December 31, 1918.

Mr. George Wingfield, President, and
The Board of Directors,
The Goldfield Consolidated Mines Co., Reno, Nev.

Dear Sirs:

The following report giving summary of operations for the year 1918, is submitted for your consideration and in order to facilitate comparison with the data given in previous years, the tables and information are arranged in the same order.

Except for labor shortage in July, operation was continuous throughout the year but on a constantly decreasing scale of activity until at the close of the year less than 150 tons per day were being treated.

There were treated during the year 94,654 tons of ore, having a gross value of \$1,065,581. Of this amount \$921,514 were recovered. In addition 154,121 tons of tailing were treated from which \$116,804 were recovered. An amount of \$24,811 was received from interest, royalties, etc. Operating costs, including sums paid to lessees, totaled \$1,059,696, showing a net realization of but \$3,433.

A total of 4,848 feet of development work was performed at a cost of \$6.72 per foot.

The result of the year's operation is shown in greater detail in the following tabulation:

(Tabulation omitted)

ANALYSIS OF OPERATIONS.

COMPARATIVE DATA:

The following table indicates the trend of operations for the past three years, exclusive of cost and recovery from tailing treatment:

	1916	1917	1918
Tons Crude Ore Treated.....	358,680	250,550	94,654
Heading value.....	\$ 7.52	\$ 8.14	\$11.25
Tailing Loss and Smelter Discount.....	.99	1.10	1.52
Values recovered.....	6.83	7.04	9.75
	86%	86%	86%
Operating Cost, Including Expense Account Lessees, But Excluding Direct Expense of Tailing Treatment.....			
	5.41	6.67	10.14
Operating Profit.....	1.12	.37	.41 Loss
Miscellaneous Earning.....	.22	.17	.29
Net Profit.....	1.54	.54	.12 Loss
Development Work Performed.....	28,533 Ft.	16,477 Ft.	4,848 Ft.
Ratio Development Work to Tons Ore Treated.	11.1	15.1	19.1

This comparison shows the tonnage treated has precipitately decreased and when operating on this smaller tonnage, altogether with less efficient labor and higher costs for supplies, has caused constantly increasing costs per ton. The grade of the ore has increased somewhat on account of mining in more restricted areas, but the increase has not been in proportion to the increase in costs, so the profit has been reduced to nothing.

MINE DEVELOPMENT:

It will be noted the amount of development work (4,848 feet for the year) has decreased in even greater proportion than the tonnage. This is due to both the lack of efficient labor and the negative results obtained from recent exploration work. It is not confined almost wholly to the upper levels and consists of short cross-outs into vein walls or advance through old stoped areas in search of pay values in the filling.

ORE RESERVES:

There is no measureable ore reserve. Present exposures may reasonably be expected to produce 3,000 tons per month for six months and thereafter at a slower rate until a total of 30,000 tons is produced, having an average grade of \$10.00 to \$12.00 per ton. Under present conditions any further operating profit is problematic.

Should development work continue either on Company account or by lessees, other bodies of ore will be found, but owing to extensive past development work, such new bodies are apt to be small and profitable only over short periods.

LEASING:

The leasing policy under a split-check system was gradually extended during the year until now, with exception of a few stopes, the entire mine is open to lessees. About forty sets are operating and their production for the year was 25,035 tons at a cost to the company of \$6.80 per ton in payment of labor and powder used, also for whatever development work the lessees have performed. The present lease production (1,500 tons monthly) is becoming so small it is no longer profitable to maintain all the necessary mining and milling facilities for their convenience. If the few remaining blocks were given over to lessees on the same system, the leases would make some profit for a few months, but the tonnage treated would be increased so little, the company would be apt to continue to lose money in keeping the property operating.

MINE DUMPS:

Effort to treat the mine dumps has not been profitable. This year 2,422 tons, averaging \$2.93, were treated by flotation. The operation resulted in a slight loss. There is no indication the remainder of the dumps, estimated at 50,000 tons, would show any higher values. Careful sorting by lessees has produced a few cars of milling ore but at no profit to the lessee.

TAILING TREATMENT:

The tailing treatment account for two years to date shows the following:

	Total	Per Ton
Total Tons Treated.....	240,715	
Gross Value.....	\$306,270.00	\$1.27
Recovered Value, 57%.....	176,495.00	.73
Costs.....	140,509.00	.59
Operating Profit.....	35,986.00	.14

The above cost has borne no portion of Superintendence, Refining, or marketing charges. During the year the costs have increased to \$0.70, or equal to the recovered value, and the treatment of tailing was discontinued in December. It seems inadvisable to attempt further treatment of the tailing until such time as economic conditions with regard to gold production shall have become more favorable.

FUTURE OUTLOOK:

When taken by months only March, May and June of the past year show an operating profit and this was derived chiefly from the Mohawk shaft pillar.

Further decrease in monthly tonnage must be expected and with each reduction in tonnage handled it becomes increasingly difficult to reduce costs proportionately.

While present operation is using up ore reserves without returning a profit, it is also true that a suspension of operations would either require a material monthly expense to keep the mine workings open or result in caving, which would render the ore unavailable for any improved economic conditions that may become effective in the future.

It now appears that near future will indicate the advisability of discontinuing operations on Company account.

AURORA CONSOLIDATED MINES COMPANY:

Operations were discontinued in October, after further development work had failed to expose payable ore in either the Juniata or Silver Lining Claims.

During the year 104,086 tons of ore were treated, yielding \$295,029.00. The total loss for the year was \$83,657.00 exclusive of interest on indebtedness, which amounted to \$19,566.00.

For five years to date the property produced 633,332 tons, yielding \$1,842,482.00, at a cost of \$1,356,624.00.

Operating costs (averaging \$2.94 per ton for the same period) were lower than could be expected in the near future and the general tendency toward impoverishment of the veins with depth made any further operations or development work inadvisable.

It would seem that the project now may be abandoned in the belief that all reasonable chances for finding higher grade values have been exhausted.

MONTANA MINES COMPANY:

Additional development work was carried on which proved the vein at a depth of 450 feet on its dip, too narrow to permit profitable operation so the option on the mine was not exercised and the equipment was removed from the property.

During the term of the option approximately 1,250,000 pounds of lead, 1,300,000 pounds of zinc and 47,635 ounces of silver were produced as concentrate. This material was produced at a time when labor was scarce and inefficient (Mexican labor being unprocureable) and sold during a period of depression in the lead and zinc markets. The operating profit was approximately \$25,000.00, thus incurring a loss of about \$350,000.00, divided about equally between mine development and surface equipment.

EXPLORATION DEPARTMENT:

No new exploration work was undertaken during the year. Data on two hundred and sixty-seven properties were studied and seven examinations were made.

On account of labor scarcity and excessive cost of supplies, all development work on the properties held under option was discontinued until such time as conditions return to normal.

Respectfully submitted,

E. A. JULIAN,

General Manager

D E E D

THIS INDENTURE made this 21st day of December 1920 by and between Aurora Consolidated Mines Company, a corporation duly organized and existing under and by virtue of the laws of the State of Utah, and doing business in the State of Nevada, the party of the first part and The Goldfield Consolidated Mines Company, a corporation organized under and by virtue of the laws of the State of Wyoming, and doing business in the State of Nevada, the party of the second part, Witnesseth:

That the said party of the first part for and in consideration of the sum of ten (\$10.00) dollars lawful money of the United States of America to it in hand paid by the said party of the second part and of other good and valuable considerations received by it from the party of the second part, the receipt whereof is hereby acknowledged does by these presents grant, bargain, sell, convey, remise, release and forever quitclaim unto the said party of the second part, and to its successors and assigns forever all of the following described property situated at or near the town of Aurora, in the Esmeralda Mining District, County of Mineral, State of Nevada:

All of the following described lode mining claims:

Last Chance	M S No 42
Juniata	M A No 43
East Garibaldi	M S No 47
Esmeralda	M S No 53
Live Yankee	M S No 54
Durand	M S No 55
Prospectus	M S No 56
Northern Bell	M S No 57
Humboldt	M S No 59
Humboldt West	M S No 60
East St. Clair	M S No 61
Chimpanzee or Green	M S No 62
St. Clair or Sitting Bull	M S No 65
Langtry	M S No 64
Thanksgiving	M S No 71
Hartinez No 2	M S No 72
Electric Mining Claim (Known as Real Del Monte)	M S No 1967
(No listing works)	
Capital	M S No 1968
Motor	M S No 1969
Belle	M S No 2026
Saul Smith Russell	M S No 2027

A group of mining claims known as the New Esmeralda Group consisting of twelve (12) patented mining claims 20x1500 feet, each covered by four (4) patents and known by the following names:

Dean	M S No 65
Evelean	M S No 66
Bertie	M S No 67
Clara	M S No 68

Also the following described lode mining claims:

Sand Lot	M S No 4056
Banner Fleece	M S No 4067
Empire	M S No 52
Sovereign	M S No 4056
Golden Age	M S No 51

Philadelphia No. 1

Philadelphia No. 2

Southern, Eastern, Western, Bell Weather, Provo, Mangum and Liberty Bell lode mining claims all M S No 4219 A and B.

The Mary and Eleanore lode mining claims M S No 4269

Victor Stuart, Bird, Aurora B. and Humboldt Fraction lode mining claims, M S No 4271.

Astor, Enterprise, Alice C. Dennis Fraction, Southern Republic, Revenue, Gladus and Lost Chance lode mining claims, M S No 4310 A and B

Eureka lode mining claim M S No 4307 A and B.

Ruth and South End lode mining claims M S No 4292.

Rambler and Juniata Extension lode mining claims M S No 4286.

The Montana Line Location (600 x 1500 ft.)

The Real Del Monte tunnel.

The Southern Mill Site M S No 4319 A and B.

The Eureka Mill Site M S No. 4310 A and B.

Also the following described lands:

The E $\frac{1}{2}$ of the NE $\frac{1}{4}$ of Section 14, T. 5 N., R. 27 E., containing eighty (80) acres;

SE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 2, T. 5 N., R. 27 E., containing forty (40) acres;

NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Section 11, T. 5 N., R. 27 E., containing forty (40) acres;

All of Section 36, T. 5 N., R. 28 E., containing 640 acres;

E $\frac{1}{2}$ of SE $\frac{1}{4}$ of Section 7, T. 5 N., R. 28 E., containing eighty (80) acres;

SW $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 8, T. 5 N., R. 28 E., containing forty (40) acres; and

The SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 15.

Together with all and singular the tenements, hereditaments and appurtenances therunto belonging or in anywise appertaining and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

It is understood that this instrument is intended to convey to the party of the second part all of the real estate of the party of the first part of every kind and wherever situate, and all of such real estate of said party of the first part of every kind and wherever situate whether herein specifically described or not, is hereby made subject to and is conveyed by these presents.

To have and to hold all and singular the said premises, together with the appurtenances unto the said party of the second part and to its successors and assigns forever.

IN WITNESS WHEREOF the said party of the first part has executed this deed by its proper officers thereunto duly authorized and attached its corporate seal the day and year first above written.

AURORA CONSOLIDATED MINES COMPANY

By Benj. J. Henley, Vice President

Corp. Seal of Aurora Cons. M. Co.

Attest W. E. Zoebel, Secretary.

STATE OF NEVADA)
 : ss
County of Washoe)

On this 22nd day of December A.D. 1920 personally appeared before me Stanislaus C. Mitchell, a Notary Public in and for the County of Washoe, W. E. Zeebel, known to me to be the Secretary of the corporation that executed the foregoing instrument, and upon oath did depose that he is the officer of said corporation as above designated; that he is acquainted with the seal of said corporation, and that the seal affixed to the said instrument is the corporate seal of said corporation; that the signatures to said instrument were made by the officers of said corporation as indicated after said signatures, and that the said corporation executed the said instrument freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

STANISLAUS C. MITCHELL, Notary Public
in and for the County of Washoe, State of Nevada.

Seal

19201 Filed for record at request of W. E. Zeebel Dec 27 1920 at 9 A.M.
Rita D. Miller, Recorder.

THIS AGREEMENT, made and entered into this 13th day of April, 1942 by and between the GOLDFIELD CONSOLIDATED MINES COMPANY, a corporation duly organized and existing under and by virtue of the laws of the State of Wyoming and doing business in the State of Nevada, party of the first part, hereinafter called the lessor, and H. B. CHESSER and J. E. CHESSER, of Reno, Nevada, parties of the second part, hereinafter called the lessees;

WITNESSETH:

That the said lessor for and in consideration of the sum of Ten Dollars (\$10.00), lawful money of the United States, paid by the lessees to lessor, receipt of which is hereby acknowledged and the rents, royalties, covenants and agreements hereinafter reserved, and by the lessees to be paid, kept and performed, has leased, let and demised unto the said lessees subject to certain provisions as contained in the next paragraph, all and singular, those certain patented lode mining claims and millsites situate, lying and being in the Aurora Mining District, in the County of Mineral, State of Nevada, to-wit:

Sovereign	Mangan
Liberty Bell	Western
Eastern	Prospectus
Northern Bell	Bird
Humboldt Fr.	Interprise
Astor	Junata
Junata Extension	Philadelphia No. 1
Philadelphia No. 2	Belle
Saul Smith Russell	Electric
Motor	Durand
Martinez No. 2	Gladus
Alice C. Dennis Fraction	South Republic
Revenue	Southern Mill Site
Eureka Mill Site	Esmeralda
Last Chance	Eureka
Birdie	Dean
Clara	Evalean
Humboldt West	Victor
Stuart	Aurora B.
Lost Chance	

Also:

All of Sec 36, T. 5, range 28; E $\frac{1}{2}$ S.E. $\frac{1}{4}$, Sec. 7, T. 5, range 28; S.W. $\frac{1}{4}$ S.W. $\frac{1}{4}$, Sec. 8, T. 5, range 28; E $\frac{1}{2}$ N.E. $\frac{1}{4}$, Sec. 14, T. 5, range 27.

Also, all other mining claims or mining rights held or owned by the lessor in the said district and county aforesaid.

Also, all water rights, and water, if any, and all improvements, fixtures, appurtenances, plant and equipment situated on said claims which are owned by the lessor and are, or have been, used in connection with operation of said mining property and claims.

TO HAVE AND TO HOLD unto the said lessees, said demised premises for the purpose of mining and reduction of ores, treatment and storage of tailings, housing and boarding of employees, and for no other purpose whatsoever, for the term beginning on the 1st day of April, A.D. 1942 and ending on the 1st day of April, A. D. 1952 at noon, unless sooner forfeited or determined as hereinafter provided. It is understood and agreed that this agreement may, at option of lessees, continue in effect for an additional period of five years

from April 1st, 1942 under the same terms and conditions as herein contained, provided operations of lessees under this lease are in progress in accordance with the terms thereof on that date, unless sooner terminated or forfeited through failure on the part of lessees to fully comply with all the terms and requirements of this agreement.

IN CONSIDERATION WHEREOF, the said lessees do hereby covenant and agree as follows, to-wit:

1. To enter upon and work and mine the said premises steadily to the extent of fifty (50) shifts of work during each and every month beginning April first, 1942, and continuing for and during the present state of war between the United States of America and the Nations of Japan and Germany, and for the first three (3) months following the date of signing a declaration of peace between the United States of America and said Nations of Japan and Germany, and thereafter one hundred and twenty (120) shifts of work shall be done during each and every month, unless prevented by labor strikes or extraordinary mining casualty. It is understood and agreed, however, that said lessees may, in lieu of such work, pay to the said lessor a minimum amount of fifty dollars (\$50.00) per month during the time 50 shifts of labor are required each month, and a minimum of \$250.00 per month during the time 120 shifts of labor are required each month during the continuance of this agreement, which said payment, or payments, shall apply upon the purchase price of the property herein demised, but shall be in addition to the minimum royalties required to be paid under paragraph six hereof.

2. That said lessees will promptly pay for all labor, materials and supplies used and employed in connection with such operations for which they are responsible hereunder. The lessees will furnish to the lessor, quarterly statements showing the amount spent by the lessees during the three months preceding such period for labor, supplies and improvements made upon said demised premises.

3. To permit authorized representatives of the lessor at any time to have access to any and all workings upon said premises for the purposes of sampling ores exposed in any of the workings of said premises and for the purpose of inspecting and surveying said premises and will permit such representatives to inspect all maps, books and records of said lessees; said sampling, inspection and survey, however, shall be made at such times as shall not unreasonably interfere with the mining operations of lessees.

4. The lessor will lend and make available to the lessees all available engineering data and reports which they receive from Stickney and Evans. The lessees will, prior to the surrender and upon forfeiture of this lease, return to the lessor said Stickney and Evans engineering data and reports, and also copies of all engineering data including reports, surface and underground maps, geological maps, sample plans and assay records obtained or prepared by lessees in the course of their operations under this lease.

5. All ores mined which are too low grade for present shipment or treatment, which may be extracted or recovered from the said premises by said lessees and thrown on the dumps, along with all mill tailings, shall remain the property of and be delivered to the lessor at the termination of this lease. Said lessees shall be chargeable with and pay any loss and expense resulting from any shipment of ore or other valuable material recovered from said premises which may prove to be of a value insufficient to defray such expense.

6. It is expressly understood and agreed that all ore, bullion, concentrates and other valuable material extracted, recovered and shipped or sold from the demised premises, by virtue of this agreement, shall be shipped in the name of lessor; and it is further understood and agreed that royalties are reserved by the

lessor upon all ore, bullion, concentrates and other valuable materials extracted, recovered and shipped or sold from said premises under this agreement, to be deducted, retained and paid as herein provided, the rate and amount of royalty to be determined in all cases by the gross value of the product; that is to say:

Ten per centum (10%) on all ores having a gross value of Fifteen Dollars (\$15.00) per ton or less. Fifteen per centum (15%) on all ores having a gross value in excess of Fifteen Dollars (\$15.00) per ton.

A royalty equal to one-half of the above schedule of royalties shall be paid to lessor on the gross value of all ores milled on said premises which shall have been produced from any mining property other than the premises hereinabove described.

The term "gross value" shall be interpreted to mean the assay value per ton arrived at by careful sampling, following generally accepted good practice from which value per ton shall be deducted ten per centum (10%) as an allowance for metallurgical loss and Two Dollars and Fifty Cents (\$2.50) as an allowance for treatment and any other costs; and such gross value shall be determined for each monthly period.

It is understood and agreed that all payments of royalties made by lessees to lessor as hereinabove provided, shall be applied to the price of purchase of said premises hereinafter provided.

7. The lessees and lessor agree to pay their pro rata portion of all bullion taxes assessed upon said premises in accordance with the laws of the United States and the State of Nevada, during the life time of this lease, and for the purpose of rendering the above covenant in reference to bullion tax effectual, it is further covenanted and agreed that the lessor will retain sufficient sums out of the proceeds of any and all shipments of ore, bullion or other valuable material, said sums to be held by said lessor to provide a fund for the payment of said taxes; provided that any portion of funds so retained by said lessor remaining after the payment of said taxes, shall be paid over pro rata to said lessees by lessor.

8. The said lessees hereby agree to pay all State, County and local taxes that may be levied or assessed against the demised premises and which may become payable after May first, 1942, during the life of this agreement, and it is understood and agreed that the said lessor will pay any and all delinquent taxes and taxes due prior to May first, 1942, except bullion taxes as herein provided.

9. It is understood and agreed that all buildings placed upon the said leased premises by said lessees, shall upon the expiration or forfeiture of this lease, become the property of the lessor, in the event that said lessees do not complete the purchase of said premises under their option to purchase provided herein. It is understood, however, that all machinery, tools and other appliances that may be erected or placed upon said premises by said lessees may be removed, if such removal is accomplished within ninety days after the termination of this lease from any cause, but if not removed, shall be and remain the property of the lessor. All machinery, tools and other appliances now on said premises, which have been sold to lessees by H. W. Evans, A. W. Stickney, et al, may be removed by lessees from said premises within ninety days after the termination of this agreement from any cause, but if not removed shall be and remain the property of lessor.

10. The lessees will, through the life of this agreement, save the lessor harmless from any damages that might be sustained by lessor in any way as a result of the operations of the said lessees under this lease, and that the operations of lessees under this agreement shall be so conducted as to fully comply in all respects with the laws of the United States and the State of Nevada.

11. Further, the said lessees shall elect to accept the benefits of the Nevada Industrial Insurance Law and shall pay monthly premiums to the Nevada Industrial Insurance Commission, both for themselves, if acceptable to said Commission, and their employees, and will thereby provide for themselves, if acceptable to said Commission, and their employees, compensation in case of injury, and also hospital and medical attention as provided by the said Commission.

12. The said lessees agree that they will post and keep posted in the proper place and in accordance with the laws of the State of Nevada, notice of non-liability of the lessor and of the property demised to answer for the debts, obligations or liabilities of the lessees or their assigns, so that neither the lessor nor any of the property covered by this agreement shall be liable for any of said obligations of the lessees or their assigns.

13. This agreement constitutes a lease and option, and the making of any payment other than those of royalty due on ore mined on said property, shall be optional with the lessees; provided, however, that in case the lessees fail to perform the shifts of work, or, in lieu of said work, to make payments as herein provided, or to carry accident insurance, all rights of lessees hereunder shall terminate, and all payments shall be forfeited to and become the property of the lessor as consideration for the execution of this agreement, and as rental or liquidated damages.

Provided lessees are not in any way obligated on account of debts or damages incurred during their operations on the demised premises under this lease, the lessees, upon payment of a consideration of \$10.00, may surrender and terminate this lease and agreement at any time by notifying the lessor in writing of their intention to do so, and thereafter all obligations of the lessees hereunder shall cease, save as to the payment of royalties already due, or subsequently payable from ore in process of treatment, or products for which settlements have not been received.

In the event that the lessees shall fail to keep or perform any of the other remaining covenants or conditions herein specified and the lessees fail to remedy the said failure within thirty (30) days after receiving written notice thereof from the lessor via U. S. registered mail, postage prepaid, calling attention to such default or failure, or to provide a good and sufficient bond for the protection of the lessor, all rights of the lessees hereunder shall cease and terminate and all payments made shall be forfeited to and become the property of the lessor as consideration of the execution of this agreement and as rental or liquidated damages.

AND IN CONSIDERATION of the expenditures and payments made under the terms of the foregoing lease the said lessees are hereby granted an exclusive right and option to purchase the said premises as hereinabove described upon the payment to lessor of the sum of Fifty Thousand Dollars (\$50,000.00) lawful money of the United States, payable at any time during the life of this agreement, or during an extension thereof, as hereinabove provided, by means of royalties or by any other payment. It is understood that payment of the same may be made by deposit in a bank to be named by the parties hereto, for credit of lessor and may be made by certified check or a bank draft properly honored.

It is agreed that when the lessees shall have paid Ten Thousand Dollars (\$10,000.00) toward the purchase price of Fifty Thousand Dollars (\$50,000.00), or shall indicate to lessor in writing their readiness to do so, the lessor upon request of lessees will deposit in said bank good and sufficient deeds conveying to lessee clear and unencumbered title to said premises provided that no lien or cloud on title of said premises results from the operations of lessees under the said lease, together with escrow instructions providing for delivery of said deeds only upon payment of the full purchase price of Fifty Thousand Dollars (\$50,000.00) upon the terms above specified.

It is further understood and agreed that failure on the part of lessees to complete the payment of the said purchase price of Fifty Thousand Dollars (\$50,000.00), as hereinabove provided, will constitute a forfeiture of all rights of lessees under this agreement to purchase said property and the lessor may retain any and all payments which may have been made toward the said purchase price, as rental for the use and occupancy of said premises and as liquidated damages.

All sums payable to the lessees under this Agreement shall be remitted to them within ten (10) days after receipt of the funds by the lessor.

Time and punctuality are the essence of this agreement.

This agreement and each and every clause and covenant thereof shall be binding upon and enforceable by the respective successors, heirs, executors, administrators and assigns of the parties hereto.

IN WITNESS WHEREOF the said parties have hereunto set their respective hands and seals the day and year first above written.

Corp. Seal

GOLDFIELD CONSOLIDATED MINES COMPANY

By Geo. Wingfield, President

By J. J. McCormack, Secretary
Lessor

H. B. Chessher

J. B. Chessher

Lessee

STATE OF NEVADA)
COUNTY OF WASHOE) SS:

On this 13th day of April A.D. 1942, before me, the undersigned, a Notary Public in and for the county and state aforesaid, personally appeared Geo. Wingfield, personally known to me to be the President of the corporation that executed the foregoing instrument, and upon oath did depose and say that he is the officer of said corporation as above designated; that he is acquainted with the seal of said corporation, and that the seal affixed to the said instrument is the Corporate Seal of said corporation; that the signatures to said instrument were made by the officers of said corporation as indicated after said signatures, and that the said corporation executed the said instrument freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the said County and State the day and year in this certificate first above written.

Seal

Lena States, Notary Public

STATE OF NEVADA)
COUNTY OF WASHOE) SS:

On this 13th day of April, A.D. 1942, before me, a Notary Public in and for the county and state aforesaid, personally appeared H.B. CHESSHER and J.E. CHESSHER, personally known to me to be the persons described in and who executed the foregoing instrument, and who acknowledged to me that they executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

Seal

Catherine M. Blainey, Notary Public

BILL OF SALE

THIS AGREEMENT made and entered into this 13th day of April, 1942, by and between H. WILKIE EVANS, ALFRED W. STICKNEY, EDWARD J. NELL and H. M. KINGSBURY, a copartnership, doing business at Aurora, Nevada, under the firm name and style of EVANS, STICKNEY, NELL AND KINGSBURY, hereinafter described herein as parties of the first part, and H. B. CHESSIER and J. E. CHESSIER, of Reno, Washoe County, Nevada, hereinafter described herein as parties of the second part,

WITNESSETH:

That the said parties of the first part, for and in consideration of the sum of Ten (\$10.00) Dollars, lawful money of the United States to them in hand paid by the parties of the second part, the receipt whereof is hereby acknowledged, do by these presents grant, bargain, sell and convey unto the said parties of the second part, their executors, administrators and assigns, that certain personal property described as follows:

All those certain tools, machinery, equipment, merchandise, supplies and other personal property, situated in the Aurora Mining District, T. 6 N., R. 28 E., M.D.M., Mineral County, State of Nevada - a full and complete list and inventory of said personal property hereby conveyed is attached hereto and marked "Exhibit A," and made a part hereof.

TOGETHER with all the right, title and interest of the parties of the first part, in and to all buildings, mines, mining property, mining rights, electric power lines, rights of way, easements, water rights, pipelines, machinery, tools, equipment, metal, iron, junk, merchandise, supplies and personal and real property of every kind and description, even though the same be not hereinabove mentioned or described, which are situated and located in the Aurora Mining District and within the area comprising Township 6 North, Range 27 and 28 East, M.D.M., Mineral County, State of Nevada, and expressly including the following, to-wit:

All of the furnishings, contents and personal property, owned by the said parties of the first part, which are stored and located in the Cain House, in the brick house with iron doors, and in any other building in the old town of Aurora, Nevada, excepting the building in said town known as the "Evans Residence" which building, together with such contents thereof as are the sole and personal property of H. Wilkie Evans, are excluded herefrom; and

All the furnishings, contents and personal property owned by the said parties of the first part, stored and located in any of the buildings on, and on the surface of, the Morning Glory mining claim, which claim adjoins that Juniata patented mining claim on the south sideline of the latter claim, situated in said Aurora Mining District; and

All machinery, tools, equipment, metal, iron, junk, merchandise, supplies, auto trucks, and personal property of every kind and description belonging to the said parties of the first part, heretofore delivered to, or intrusted to the care of, Mr. R. Cunningham, the caretaker for aforesaid partnership, who now resides in the said Aurora Mining District, even though the same or any part thereof now be within or outside of the area comprising said Township 6 North, Ranges 27 and 28 East, M.D.M., Mineral County, State of Nevada.

TO HAVE AND TO HOLD the same to the said parties of the second part, and to their executors, administrators and assigns forever. And we do, for ourselves, our heirs, executors and administrators, covenant and agree to and with the said parties of the second part, their executors, administrators and assigns, to warrant and defend the sale of the said property, goods and chattels hereby made unto the said parties of the second part, their executors, administrators and assigns against all and every person or persons whomsoever lawfully claiming or to claim the same.

And for the above and foregoing consideration, the said parties of the first part hereby assign, transfer and set over unto the said parties of the second part, all of their right, title and interest in and to that certain written document designated a lease and option, dated the 23rd day of April, 1938, as amended and modified by the agreement dated August 2, 1938, wherein Goldfield Consolidated Mines Company, a corporation was designated as party of the first part, and H. Wilkie Evans and Alfred W. Stickney were designated as parties of the second part.

It is hereby represented and stated that in obtaining the said lease and option from the Goldfield Consolidated Mines Company, the said H. Wilkie Evans and Alfred W. Stickney, parties of the second part herein described, were acting for and on behalf of the co-partnership designated as parties of the first part herein; and it is understood and agreed that the said parties of the first part herein do hereby release and relinquish all of the right, title and interest of said co-partnership in and to said agreement as aforesaid, and consent and agree that the said agreement may be cancelled and held for naught.

IN WITNESS WHEREOF, the said parties of the first part have caused this instrument to be signed by EDWARD J. NELL, for and on behalf of himself; H. WILKIE EVANS, for and on behalf of himself; and ALFRED W. STICKNEY, by and through ROY C. PITCAIRN, his duly authorized attorney in fact, and the signature of H. M. KINGSBURY is attached hereto by H. WILKIE EVANS, one of the partners.

EVANS, STICKNEY, NELL AND KINGSBURY
Firm Name

By Edward J. Nell, Partner
By H. Wilkie Evans, Partner
Alfred W. Stickney
By Roy C. Pitcairn, Attorney in fact
H. M. Kingsbury
By H. W. Evans, Partner

STATE OF NEVADA)
COUNTY OF WASHOE) SS

On this 15th day of April, A.D. 1942, personally appeared before me, a Notary Public in and for the County of Washoe, H. WILKIE EVANS and EDWARD J. NELL, known to me to be the persons described in, and who executed the foregoing instrument, who acknowledged to me that they executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

Catherine H. Blainey SEAL
Notary Public in and for the
County of Washoe, State of Nevada.

STATE OF NEVADA)
COUNTY OF WASHOE) ss.

On this 15th day of April, A.D. 1942, personally appeared before me, a Notary Public in and for the County of Washoe, ROY C. PITCAIRN, known to me to be the person whose name is subscribed to the within instrument as the attorney in fact of ALFRED W. STICKNEY, and acknowledged to me that he subscribed the name of said Alfred W. Stickney thereto as principal, and his own name as attorney in fact, freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal the day and year first above written.

Catherine H. Blainey SEAL
Notary Public in and for the County
of Washoe, State of Nevada.

ITEMIZED LIST OF TOOLS, MACHINERY, EQUIPMENT, MERCHANDISE,
SUPPLIES, PERSONAL PROPERTY, ETC. OWNED BY EVANS, STICKNEY,
NELL & KINGSBURY, a co-partnership, SITUATED AND LOCATED IN
THE AURORA MINING DISTRICT, TOWNSHIP 6 N., RANGE 28 E., M.D.M.,
MINERAL COUNTY, STATE OF NEVADA, AS OF APRIL 13th, 1942.

OFFICE BUILDING

- | | |
|---|--------------------------------------|
| 2 - Chairs | 2 - Tables |
| 1 - Power saw blades | 1 - Sheet of electric goods |
| 1 - Box back saw blades | 1 - Casket - Ford V truck |
| 1 - Box Machine Bolts | 4 - Easy outlets |
| 1 - Can putty | 1 - Box door pulls and latches |
| 1 - 5/8 box of bolts | 1 - Box cotter keys |
| 10 - Pair heavy hinges | 5 - Box of latches |
| 1 - Set of Rabbit scrapers (New) | 1 1/2 - Box Type B fuses |
| 2 - rolls of gaskets | 1 - Signal transformer |
| 6 - Boxes of conduit bushing | 3 - Boxes of lock nuts |
| 1 - Spool of Electric wire protectors | |
| 1 - Roll electric drop cord | 5 - Boxes alligator belt lacing |
| 3 - Flat iron elements | 2 - Boxes signal devices |
| 4 - Boxes electric goods | 2 - Boxes thrust ball bearing |
| 1 - Bibbs seat reamer | 2 - Boxes glaser points |
| 36 - Panes of glass 12x14" - 12x10" | 1 - Can lock keys |
| 1 - Box of assorted nuts | 2 - Cans of Braco flush |
| 3 - Boxes of wood screws | 4 - Boxes fastening devices |
| 1 - Thrust ball bearing | 1 - Cluth V-8 Ford (new) |
| 3 - Boxes of adjustable dies | 1 - Gauge 50# pressure |
| 1 - Box pull ceiling receptacles | 1 - Box ground clamps |
| 1 - Box switches | 1 - Clipper belt lacer |
| 2 - Boxes porcelain tubes | 2 - Boxes insulators |
| 1 - Tube 700x16 G.M.C. truck | 1 - Circuit breaker |
| 6 - Crescent wrenches 24" & 18" new | 2 - Hand axes |
| 1 - Monkey wrench | 1 - Extension bit |
| 1 - 100 ft. tape | 1 - Draw knife |
| 1 - Set bolt dies (new) | 1 - Set wood bits |
| 1 - Wood plane | 2 - Long augers |
| 1 - Large electric drill for boring 110V. | |
| 1 - Extension auger | 4 - Miner's hats |
| 3 - Chairs | 1 - Set high speed small bits |
| 22 - Large high speed drill bits | 1 - First aid kit |
| 1 - Wool blanket | 1 - Bundle of American filter covers |
| 21 - Electric bulbs-100 & 200 watt | 1 - large brush |
| Stationery, order books and time slips | |
| 1 - Box machine drill bits | 1 - V belt drive |
| 4 - Boxes of caps and crimpers | 2 - Boxes fasteners for wood |
| 2 - Boxes Roof saddles | 1 - Reamer |

Stuff in office is all new.

ASSAY OFFICE BUILDING

- | | |
|---|------------------------------------|
| 1 - Assay furnace | 6 - Crucibles |
| 1 - Extra muffler and door | 1 - Ainsworth gold balance |
| 1 - Ainsworth button balance | 1 - Pulp balance |
| 1 - Power crusher | 1 - Power pulverizer |
| 1 - 5 H.P. Motor V belt drive for crusher and pulverizer, with switch | |
| 1 - Samples | 2 - Sets of Tongs |
| 3 - Slag pans 3-4-6 | 1 - Set of pans |
| 1 - Set screens | 1 - K.M. Flotation laboratory cell |
| 1 - Hand crusher | 1 - Bucking board and buckler |
| 1 - Pair family scales | 1 - Thermometer |

ASSAY OFFICE BUILDING - Continued

- | | |
|------------------------|-------------------------------------|
| 1 - Hydrometer | 2 - Electric plate stoves, 2 plates |
| 1 - Keg bone ash | 6 - Rolls of clay cups |
| 10 - lbs. Hemetite | 25 - lbs. Fire clay |
| 100 - lbs. Borax glass | 100 - lbs. Litharge |

MACHINE SHOP

- | | |
|--|--------------------------------------|
| 1 - Lathe, about 10 ft. bed with tools | 1 - Power hack saw |
| 1 - Power drill press | 1 - Two wheel grinder |
| 1 - 10 H.P. Motor line shaft - pulleys, belts and switches for same | 5 - Single jack hammer handles |
| 1 - Pipe cutter | 6 - Miner's lamps |
| 4 - Pick handles | 1 - Large grease gun (new) |
| 40 - Boxes of fittings | 1 - Hack saw |
| 10 - Link belts, different sizes | 2 - Levels - 2 ft., 4 ft. |
| 3 - Carpenter's saws | 1 - Monkey wrench |
| 2 - Carpenter's squares | |
| 1 - Tin snipe | |
| 1 - Set Jack hammer steel threaded for 1" Scisco bits | |
| 1 - Set Jack hammer steel for Ingersoll Rand | |
| 200 - ft. heavy 3-way cable | 1 - Truck tire 700x20 |
| 1 - Box welding rods, all sizes | 1 - Welding and cutting outfit |
| 1 - Soldering outfit | 14 - Bars artie friction metal |
| 1 - 100# anvil | 1 - Roll of fuse, 500 ft. |
| 2 - 12# hammers | 1 - 10 ton house jack |
| 1 - Fairbanks motor, 24 HP | 1 - Induction motor |
| 1 - Conchise Liner, used one month, \$350.00 | |
| 1 - Krout Reagent feeder | 2 - Forges, hand drive |
| 3 - Jack hammers | 2 - Shells for jack hammers |
| 1 - Yale 3 ton speed lift (new) | 2 - Rubber tired wheel barrows |
| 46 - Pcs. air pipe 6" - 12 ft. long, galvanized | |
| 237 - Pcs. new bits 1" steel | 24 - Boxes new bits, never unpacked |
| 100 - lbs. Track spikes | 2 - Timber saws |
| 1 - Doz. picks | 1 - Doz. shovels |
| 2 - Sets blacksmith tools | 10 - Rolls air hose |
| 2 - Block and tackle | 4 - Pipe wrenches 24" and 36" |
| 4 - Boxes of pipe fittings | 3 - 6 ft. 3" drill bars, complete |
| 1 - 4 ft. 3" drill bars, complete | 4 - clamps and 4 saddles |
| 1 - Ingersoll Rand large bit grinder, complete with power switch, nearly new | |
| 1 - Stationary blacksmith furnace | 1 - Pipe vise |
| 1 - Machine vise | 3 - set 1" steel from 2 ft. to 7 ft. |
| Extension cord, 100 ft., for electric drill. | |

OUTSIDE OF ANY BUILDING

- | | |
|---|--|
| 4 - Mine cars, ball bearing | 2 - Timber trucks |
| 4 - 8"x12"-12 ft., 2 - 12"x15"-12 ft., 5 - 6" x 6"-12 ft., 1 - 7"x15"-12ft., Timber | |
| 5 - Iron sheets 4'x12' long, heavy | 18 - Empty gas barrels, paid for |
| 1 - Power saw with 15 HP motor | 1 - Allis Chalmers 10"x12" heavy crusher |
| 2 - Redwood tanks | 2 - Water tanks of underground drilling |
| 2 - Air tanks, small | |
| 1 - Set ball mill liners, molly chrome, new, from EMCo. Never used. \$800.00. | |
| 1 - Set ball mill liners Mag., good for 6 months | |
| 4 - 5" pipe 20 ft. long | 5 - 5" pipe 20 ft. long |
| 15 - 3" pipe 9 ft. long | 7 - 2" pipe, varied lengths |
| 100 - ft. conduit | 26 - ft. 2" conduit |
| 24 - ft. 3/8 conduit- | 1 - 12 ft. 2 1/2" pipe |
| 1 - 1/4 yard cement mixer | |
| 1 - Steel tank 4'x10', 1000 gal. capacity, with 500 gal. stove oil | |
| 1 - Bullion melting furnace | 1 - 12,000 gal. water tank |
| 2 - 500 gal. tanks | 5 - Ton scrap iron |
| Water system 2" pipe with valves and 3 new fire hose with nozzles. | |

OUTSIDE OF ANY BUILDING - Continued

- 1 - Swing saw
- Tables, benches, beds and mattresses, pots and pans for 30 men.
- 6 - Heating stoves
- 1 - Large wood or coal stove
- 1 - Large oil heating stove

COMPRESSOR ROOM

- 1 - 480 ft. compressor with 75 HP General Electric motor, starting switch with extra valves
- 1 - V belt drive
- 1 - 6"x10" air receiver with gauge blow-off and valves
- 1 - extra compressor V belt
- 40 - ft. air hose for tires with fittings
- 2 - 1/2 gal. oil measures
- 3 - Oil cans, copper
- 1 - 18" crescent wrench
- 200 - lbs. Carbide

BATH HOUSE

- 2 - Sets showers with hot water boiler and heating stove
- 23 - House doors
- 7 - Transformers from 440 to 220 and 110

MINE (UNDERGROUND)

- 30 - tons 16" new and 12" rail, good condition
- 4 - Throw switches
- 150 - ft. air hose with couplings
- 150 - ft. water hose with couplings
- 2 - Water tanks with fittings
- 18 - pos. 16 1/2 rail - 16 ft.
- 4 - boxes of 40% powder
- 29 - bundles of wedges
- 7 - pos. of 3" pipe, 10 ft. long
- 1 - 2" suction hose with fittings, new, never used
- 1 - Worthington centrifugal pump with 10 HP motor direct connected 75 gal. per min., used one month. 2 switches.
- Extra bearings
- 200 - ft. underground drop cable for stop lights
- 1500 - ft. three-way cable, heavy, for pump
- 4000 - ft. underground wire, heavy, for lights, with switch
- 1 - air water pump 300# pressure, capacity 15 gal. per minute. High pressure.
- 36 - Underground light sockets
- 36 - guards for lights
- 36 - 60 Watt 220 lights
- 1000 - ft. 4" pipe
- 2000 - ft. 3" pipe - new
- 1000 - ft. 2" pipe
- 1000 - ft. 1" pipe - all in good condition
- 3 - Steel ore gates
- 3 - Steel ore shoots
- Ladders and valves, tees, unions

MILL CRUSHER HOUSE

- 1 - Scales, 300# platform scales
- 1 - Klu-Klan crusher No. 30 new, run 30 days with two sets of jaw plates
- 1 - General Electric motor with V type drive with belts, switches, wrenches & tools

MILL BUILDING

- Wood ore bin, 250 ton capacity
- 1 - 300' 14" conveyor belt with pulleys, idlers with 2 HP reduction motor, chain drive
- 1 - 5' by 4' EMCo Ball mill with V tex rope drive with 50 HP motor, starting switches, grids, etc.
- 1 - Duplex 16' C-Dorr classifier with 3 HP motor belt drive
- 1 - New Denver A Flotation cell with motor
- 1 - Reagent feeder for Sub A cell with motor
- 2 - Reagent feeders with motors
- 1 - Conditioning tank with super structure and 5 HP motor and propeller
- 6 - Krout cells with 5 HP motors with v belts complete
- 2 - Krout finishing cells (new) with 5 HP motor
- 1 - Concentrating table with 5 HP motor, V belt drive
- 3 - 2" Kimball and Wilfey sand pumps, connected with 5 HP motors with extra propellers.

MILL BUILDING - Continued

- 1 - 11'x9' Dorr Thickener tank, steel super structure, 5 HP motor lifting device for racks
- 1 - 120' compressor with 25 HP motor, V belt drive
- 1 - Vacuum tank with fittings
- 1 - Small direct connected motor driven water pump
- 1 - American filter with 5 HP motor for same, variable speed
- 3 - 50 K.V.A., 3 phase, 60 cycle, 3000 to 440 transformers with bars and switches
- 2 - 150 and 100 ft. 3/4" rope with double block and tackle
- 3 - Barrels of oil, 20-30-40 gravity
- 100 - lbs. Grease
- 10 - power switches, bull dog type, for machinery conduits, with wire cable switches water pipe 3" - 2" - 1" with valves

JUNIATA MINE
(Evans and Stickney Lease)
March 1, 1942
HBC, HBC Jr., JANGER)

J. No. 1 - LOWER TUNNEL, VEIN NO. 2 (?)

The first crosscut from the lower tunnel to south about 45'.
Cut across 2 1/2' on west wall. Cunningham thinks this is vein
No. 2.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
1	2 1/2'	Tr	Tr	---

J. No. 2 - MIDDLE TUNNEL, VEIN NO. 3.

Breast of middle level vein No. 3 about 50' west of bottom of
chute from upper tunnel level, taken across 2 1/2'.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
2	2 1/2'	0.36	0.80	\$13.17

March 3, 1942
(HBC, HBC Jr., TWEEDY, SKIDMORE)

J. Nos. 3, 4, and 5 - LOWER TUNNEL, VEIN NO. 1 or 3.

In first south crosscut starting 113 ft. from main tunnel on
east side of crosscut. This vein is the one that Evans wants
to drift on 65 feet to the west. Tweedy and Skidmore cut
across 13 feet in three sections starting north and going south.
Evans cut across 10.5 feet and averaged \$3.50 in gold.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
3	5'	Tr	Tr	---
4	5'	0.12	0.80	\$ 4.77
5	3'	Tr	Tr	---

J. NOS. 6 and 7 - LOWER TUNNEL, Joe De Roushe Vein (?)

This vein is exposed along 20' on north wall at a point in the
lower tunnel 200' more or less west of chute 256 where 206 drift
takes off. No. 6 was across 10' to the east and No. 7 was 10' to
the west along the wall. The wall was marked with a carbide
lamp. This appears to be a swell or fault displacement of another
vein, but others call it the De Roushe apex vein.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
6	10'	0.16	1.20	\$ 6.45
7	10'	0.50	3.80	\$20.37

J. NOS. 8 and 9 - LOWER TUNNEL, Vein No. 1.

In breast of lower tunnel at west end of vein No. 1, No. 8 was cut across 5' ten feet east of breast (R.C. calls ore). No. 9 was cut across 5' in breast of last round of Evans and Stickney.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
8	5'	0.02	0.20	\$ 0.84
9	5'	0.08	0.80	3.57

J. NOS. 10 and 11 - LOWER TUNNEL, Vein No. 2.

West breast of vein No. 2. No. 10 is across face of last round and was cut from two trenches, 2' and 2.5'. The vein appears to be pinching out. No. 11 is across 2.5' in a semi-circle in Alpite where R.C. says that values were gotten on north wall of vein No. 2.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
10	2.25'	0.21	1.00	\$ 8.03
11	2.5'	0.16	1.10	6.53

J. NO. 12 A and B - CHUTE ON LOWER TUNNEL, BROKEN ORE FROM VEIN NO. 5 ON UPPER TUNNEL.

Opened chute to stope storage bin and let out over one ton of ore. Chips off boulders and fines were cut from pile, mixed on canvas, quartered, and two samples, A and B, were obtained.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
12A	--	0.20	0.60	\$ 7.43
12B	--	0.18	0.50	6.65

J. NO. 13 - SAME AS 12.

George grabbed this sample from crevices in two ore chutes where Nos. 12 A and B were taken.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
13	--	0.12	0.40	\$ 4.43

J. NO. 14 - MIDDLE TUNNEL - Vein No. 3.

At breast of No. 3 vein across 4' where sample 102 went plus \$10.00.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
14	4'	0.60	0.70	\$21.50

J. No. 15 - MIDDLE TUNNEL - Vein No. 3.

Across 2' overhead just above to east of raise from lower tunnel near SA 285.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
15	2'	0.12	0.20	\$ 4.34

J. NO. 16 - MIDDLE TUNNEL - Vein No. 3.

Across 3' in roof 173' east of face of vein No. 3 and 150' east of sample No. 15.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
16	3'	0.29	0.60	\$10.72

J. NO. 17 - MIDDLE TUNNEL - Vein No. 2.

Middle 16' west of SA 264 and 10' east of SA 265-6 on vein No. 2 near turn in track. Cut across 3.5' in roof of Vein No. 2.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
17	3.5'	Tr	Tr	---

J. NO. 18 - MIDDLE TUNNEL - Between Veins 2 and 3.

Imperfect sample across 10'. Checks, consistent, SA 267.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
18	10'	Tr	Tr	---

J. NO. 19 - MIDDLE TUNNEL - Vein No. 2.

29' east of No. 17, across 3' in roof.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
19	3'	Tr	Tr	---

J. NO. 20 - UPPER TUNNEL - Vein No. 3.

Breast of vein No. 3, two trenches across 30" in face.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
20	2.5'	0.24	0.60	\$ 8.85

J. NO. 21 - Upper Tunnel - Vein No. 3.

12' east of breast of vein No. 3 on upper level, cut across 4.25' in roof.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
21	4.25'	0.12	0.40	\$ 4.48

J. NO. 22 - UPPER TUNNEL - Vein No. 3.

Across 4' in roof 12' to east of No. 21.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
22	4'	0.03	0.20	\$ 3.29

J. NO. 23 - UPPER TUNNEL - Vein No. 3.

Cut across 6" of waste on north side of face of Vein No. 3 where No. 20 was taken.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
23	0.5'	0.04	Tr	\$ 1.40

J. NO. 24 - Upper Tunnel - Vein No. 3.

At bottom edge of 80' vertical shaft being 43' from face of upper tunnel across 4' in roof.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
24	4'	0.16	0.40	\$ 5.88

J. NO. 25 - UPPER TUNNEL - Vein No. 3.

70' from face across 3'.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
25	3'	0.54	1.70	\$20.11

J. NO. 26 - UPPER TUNNEL - Vein No. 2 (?)

In turn where fault crosses a 20' west drift. HBC Jr. sampled 12" black manganese Quartz.

Assayed by C. A. Johnson

No.	Width	Au	Ag	Value
26	1'	Tr	Tr	---

A
RECAPITULATION.

In the aforesaid sampling, Vein No. 3 has been given the most attention and the sampling of it represents the only worth while results. Within the recognized ore zone, only one representative sample was taken on Vein No. 2 (No. J-10, 2.25'...\$8.06) and also only one sample was taken on Vein No. 1, and this was J. No. 9, 5'...\$3.37, cut in west breast of Vein No. 1 on lower level where the country rock wall was intermingled with the quartz.

VEIN NO. 3 results are as follows:

<u>Sample Number</u>	<u>Width of Sample</u>	<u>Gold and Silver Value</u>	<u>Total Feet Value</u>
J. No. 12.....	2.5'	\$ 13.17	\$ 32.87
J. No. 14.....	4.0'	\$ 21.50	\$ 86.00
J. No. 15.....	2.0'	\$ 4.54	\$ 8.68
J. No. 16.....	3.0'	\$ 10.72.....	\$ 32.16
J. No. 20.....	2.5'	\$ 8.93	\$ 22.07
J. No. 21.....	4.25'	\$ 4.48	\$ 19.04
J. No. 22.....	4.0'	\$ 3.29	\$ 15.16
J. No. 24.....	4.0'	\$ 5.88	\$ 25.52
J. No. 25.....	3.0'	\$ 20.11	\$ 60.33
	29.25'		\$297.83

$\frac{\$297.83}{29.25'} = 3.25'$ averaging \$10.10 per ton.

In addition to the above, we cut samples J. Nos. 12A, 12B and 13 from the ore bin in lower tunnel at ore gates evidently representing, from what R. C. advises, the ore taken from Vein No. 3 on the upper level and also gob or fills which Evans and Stickney thought might be mill ore. This ore bin is made out of an old stopp and it now contains several hundred tons of gob or ore. The average of the three samples (\$7.43, \$6.65 and \$4.48) is only \$6.18. Possibly, the upper part of ore bin, where last ore dumped, may average better than the gob at the gates.

Aurora, April 3, 1942. HBC, HBCJr. and GT.

J No. 27. SILVER LINING CLAIMS. Up hill and about 400 feet in front of Cunningham residence, we chipped off black sulphide (appearing) and beeswax quartz from large white loose boulders on surface in order to ascertain if these were the value carriers. Left no tag.

J. No. 27..... 0.02 oz.Au...Trace Ag.....\$ 0.70

J No. 28. HUMBOLDT GLORY HOLE DUMP. This is the dump on top of Humboldt Hill on southerly edge of the large open pit or glory hole and a part of the dump has already caved into the pit. We cut ten holes on the easterly side of the dump and grabbed from each. This dump is about 20 feet westerly of corner post marked "TNT 3-4319A". Left a tag on stake.

J. No. 28..... 0.10 oz.Au...Trace Ag.....\$ 3.50

J No. 29. WALKER SHAFT. This is a sample taken by GT from the pile of ore which Fred Walker had piled just outside his shaft house. Obviously, it is the ore hoisted and dumped preparatory for shipping to smelter. Less than 3 tons in pile.

J. No. 29..... 1.14 oz.Au... 4.29 oz.Ag...\$42.88

J No. 30. UPPER TUNNEL DUMP. We cut only a 6 foot trench on dump within ten feet of top to ascertain if this was the one referred to by Stickney as being of \$12.00 value. Most of the sample was minus 1". Left a tag on stake.

J. No. 30..... 0.31 oz.Au... 0.30 oz.Ag...\$11.08

J No. 31. JUNIATA MILL TAILS POND. Cut a sample of the remaining (small amount) of tails up against the dam in the flat below the mill. This was the low part of the tails pond against the small dump. We grabbed from several places.

J. No. 31..... 0.02 oz.Au... Trace Ag.....\$ 0.70

Aurora. April 19, 1942. HBC, HBC Jr. and RC

J No. 32. JUNIATA LOWER TUNNEL. South Crosscut (_____ feet from portal). We cut a sample across $3\frac{1}{2}$ feet starting at the south end of Sample No. 5 and running $3\frac{1}{2}$ feet southerly. Taken on east wall of this crosscut. Most of the material is granitic.

J. No. 32..... 0.01 oz. Au...Trace oz. Ag.....\$ 0.35

J No. 33. JUNIATA LOWER TUNNEL. At breast of No. 2 vein. In the Southwest corner and about 5 feet southerly of where No. 10 was cut, there is evidence of an 18" spur striking off southwesterly from the main vein No. 2. We cut a sample across this 18" vein and left black number.

J No. 33..... 0.14 oz. Au...1.30 oz. Ag.....\$ 5.82

J No. 34. JUNIATA LOWER TUNNEL. At breast of Vein No. 3. This is the first time we have checked the breast of No. 3 vein. Stickney cut his sample SA No. 9 across 3 feet at this point, whereas, HBC cut 2 feet in upper trench and $2\frac{1}{2}$ feet in lower trench. This is where the $\frac{3}{8}$ to $\frac{1}{2}$ inch sulphide streak or black quartz was sampled in No. 33 was taken, and one piece of the sulphide streak or black quartz is in this sample. Possibly, Stickney sampled too wide as he only obtained 0.15 oz. Au.

J No. 34..... 0.09 oz. Au...0.60 oz. Ag.....\$ 3.58

J No. 35. MARTINEZ CLAIN SURFACE. A little over half way between the vertifiente shaft on the Martinez Hill and the Walker shaft, HBC found a brown stained loose quartz boulder (not in place). Chipped off a sample. Left red tag on bush. This is about 20 feet southerly of the big white quartz cropping standing above the lake bed. HBC almost covered up boulder with sand.

J No. 35.....Trace oz. Au...____ oz. Ag.....\$ Trace

J No. 36. JUNIATA LOWER TUNNEL. Breast of Vein No. 3. HBC selected a sample of black quartz or sulphide streak no wider than $\frac{3}{8}$ or $\frac{1}{2}$ inch. This streak was within the area sampled in No. 34. Did not leave a tag but the streak can be easily identified in breast of No. 3 vein.

J No. 36..... 0.08 oz.Au 0.30 oz.Ag \$ 3.01

J No. 37. LOST CHANCE HILL. Near shaft and between it and the Chichauahua Glory Hole or stope, HBC found a narrow seam of black quartz. Farrell broke off 4 pieces to make this sample.

J No. 37 Trace Au Trace Ag \$ None

J No. 38. DUMP ANDESITE SULPHIDE. On a dump west side of big dump to Del Monte shaft, where there are two upright poles sticking in the end of said dump, and about 100 to 200 feet down (on east side) creek from where HBC crossed same, HBC Jr. picked up a blue andesitic rock showing pyrites. HBC decided to have it assayed.

J No. 38 Trace Au Trace Ag \$ None

J No. 39. WALKER SHAFT ORE DUMP. HBC grabbed a sample of Fred Walker's ore piled alongside the shaft house. This is the same dump sampled in No. 29, and it does not appear as though Walker has hoisted much more ore since we cut our sample April 3, 1942, in No. 29. Did not leave a tag.

J No. 39 0.56 oz.Au 2.20 oz.Ag ... \$ 21.16

MORNING GLORY DUMP, MORNING GLORY CLAIM
(Esmeralda Min. Dist., Aurora, Nev.)

Nov. 29, 1942. Samples taken by HBC, Sirbeck & Whiting. Morning Glory Dump is about 500 feet easterly of Juniata machine shop.

MG NOS. 1 AND 1A. This is a trench cut around a small dump on the southerly side of what we called the ore dump at the Morning Glory main (lower) tunnel dump. Quartered on canvas and split after breaking down to less than 1". Left red tag on stake. Cut up posite quarters for two samples. Contains considerable talcy material and rotten wood, so it may not be ore.

MG NO. 1.....0.07 oz. Au....0.17 oz. Ag.....\$ 2.57
MG NO. 1A.....0.05 oz. Au....0.15 oz. Ag.....\$ 1.86

MG NOS. 2 AND 2A. This is what we called the main ore or mill dump as it has the appearance of ore, although it is no doubt low grade. Cut trench for about 10 to 15 feet on the southerly side and then HBC cut this sample by taking average material and quartering on canvas, and took two opposite quarters to make these two samples. Left tag in trench at north end.

MG. NO. 2.....0.03 oz. Au....0.12 oz. Ag.....\$ 1.14
MG. NO. 2A.....0.04 oz. Au....0.14 oz. Ag.....\$ 1.50

MG NOS. 3 AND 3A. This is a northerly continuation of the trench described in Nos. 2 and 2A. We cut samples from 10 to 15 feet of trench and quartered on canvas and made up two samples from opposite quarters. Left tag in trench at south end.

MG NO. 3.....0.06 oz. Au....0.24 oz. Ag.....\$ 2.27
MG NO. 3A.....0.04 oz. Au....0.09 oz. Ag.....\$ 1.46

MG NO. 4. Sirbeck cut a 15 foot trench on the north side of the big waste dump which is the most northerly dump and it appears to be waste although considerable white bull quartz is contained in dump. Sirbeck then grabbed 1" or over along the 15 foot trench and did not take any fines or anything smaller than 1". Left tag.

MG NO. 4.....0.18 oz. Au....0.47 oz. Ag.....\$ 6.63

MG NO. 5. Between the waste dump described in No. 4 and the ore dump described in 2-2A and 3-3A, there is a smaller dump which has the appearance of being a small ore dump. Sirbeck cut a trench around it and grabbed this sample. Left tag.

MG. NO. 5.....0.09 oz. Au....0.38 oz. Ag.....\$ 3.42

MG NO. 6. On the ground at the foot of the northerly side of the waste dump described in No. 4 sample, there is a small pile of screenings (less than 1/4") evidently screened from the several tons of ore taken from the north side of the said waste dump. The opening is easily observed. Sirbeck sampled these fines by digging holes in the pile and grabbing this sample. Left tag.

MG NO. 6.....0.05 oz. Au....0.25 oz. Ag.....\$ 1.93

All assays made by J. C. MORRISON, Assayer

WALKER MINE, MAIN SHAFT
Esmeralda Mining District
Aurora, Nevada
11-28-42

W NO. 1. Fried Walker allowed HBC and Sirbeck to go down the main shaft which at one time was over 200 feet in depth but which caved and is now around 150 feet in depth. We only went to the 70 foot level after he had given to us the tracing furnished to him by the Alaska Treadwell crowd. Map is dated 1931. About the 40' level (if I remember correctly) we cut a 2½ foot sample on east wall of shaft where he has a good exposure of ore. Left tag on timber. This sample will no doubt be better than \$50.00, judging from statements made by him.

W NO. 1. Assayed by J.C. Morrison...10.90 oz. Au..91.60 oz. Ag...\$446.54

W NO. 2. While at the same place where No. 1 sample (above described) was taken, we grabbed some of the best looking ore that contained considerable black selenite. Walker said it might run \$500.00 or more, but he would not guess. Did not leave a tag. This sample made up from the best looking part, some of which shows free gold.

W NO. 2. Assayed by J.C. Morrison...10.74 oz. Au..144.66 oz. Ag...\$473.61

W NO. 3. Walker gave HBC a large piece of ore taken from the ore bin next to door of shaft house. HBC understood this came from the 120 or 140 foot level. It shows considerable black selenite and also some free gold. Did not leave tag.

W NO. 3. Assayed by J.C. Morrison....4.24 oz. Au..18.04 oz. Ag...\$161.21

AURORA MINING DISTRICT, MINERAL COUNTY, NEVADA

Sampling Data by J. Moisan

1936

No.	DATE-1936	Location	Au	Ag	Total
SA	Mo. & Day	Remarks	Oz.	Oz.	Value
1	July 14	HILDA CLAIM. 5 ft. wide H.W. to F.W., S.W. side north end out at 12008 #3, 12016 & 17. 5 step cuts. 12", 36" and 12".	0.18	0.27	\$ 6.47
2	July 14	HILDA CLAIM. 4 ft. wide H.W. to F.W., N.E. side. Second cut from north end. 1 straight cut - Broken - Quartered in Field. At 12009 #9. About 30 ft. South of SA 1.	0.26	0.34	\$ 9.51
3	July 14	HILDA CLAIM. 4 ft. wide H.W. to F.W., S.W. side. 3rd cut from North end. 5 step cuts, 18", 18" and 12", at Sample 12010 #10, about 30 ft. South of SA 2.	0.085	0.07	\$ 3.01
4	July 18	MEDICINE MAN EXT. #1. Location Hole. 4 ft. cut., 2 step cuts, 12" and 36" - 4 ft. width. Taken at 12002 Northeast side.	0.23	0.37	\$ 8.28
5	July 18	MEDICINE MAN EXT. #1. Location Hole. 2 ft. wide. 4 ft. from SA 4. Taken at 12002, southwest side.	0.45	0.45	\$16.04
6	July 20	JUNIATA LOWER TUNNEL. VEIN NO. 2. North-east end Martinez, Lower Tunnel Level, Southwest face of Northwest Vein. 75 ft. from last X-cut to raise on Southeast Vein. Width of Vein and Cut, 4-1/2 ft.	0.43	2.52	\$16.67
7	July 20	JUNIATA LOWER TUNNEL. VEIN NO. 2. Same cut southeast vein, 18 ft. southwest from raise on this vein. Beginning at H.W. (southeast side) 0 ft. to 2 ft. Width of sample, 2 ft.	0.07	0.23	\$ 2.59
8	July 20	JUNIATA LOWER TUNNEL. VEIN No. 2. Same as in #7 except from H.W. 6 ft. to 11 ft. Width of sample, 5 ft.	0.025	0.18	\$ 0.98
9	July 20	JUNIATA LOWER TUNNEL. VEIN No. 3. Same as in #8 except from H.W. 11 ft. to 14 ft. Width of sample, 3 ft.	0.13	0.37	\$ 4.73
10	July 20	JUNIATA LOWER TUNNEL. VEIN No. 3. Same as in #9 except from H.W. 2 ft. to 6 ft. Width of sample, 4 ft. Meta. and 4 qtz. stringers	Tr.	0.10	\$ 0.06
11	July 20	JUNIATA LOWER TUNNEL. VEIN No. 3. Same as in #10 except 27 ft. up raise Southwest side. 5 ft. cut.	0.05	0.15	\$ 1.84

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
12	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same as in #11 but 41 ft. up raise. Southwest side. 4 ft. wide.	0.02	0.14	\$ 0.81
13	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #12. 5 ft. quartz on F.W., 70 ft. up. 0 ft. to 3 ft. from Raise F.W.	0.20	0.60	\$ 7.46
14	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #13. 3-1/2 ft. wide. 70 ft. up raise. 3 ft. to 6 1/2 ft. Andesitic vein material.	0.01	0.10	\$ 0.43
15	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #14. 94 ft. up. 4 ft. wide.	0.09	none	\$ 3.15
16	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #15. 116 ft. up. 4 ft. wide.	0.46	1.06	\$16.92
17	July 21	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #16. 136 ft. up raise. 4 ft. wide. 25 ft. southwest in drift at top of southeast raise.	0.23	1.04	\$10.80
18	July 22	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #17. Upper level top at raise. Roof sample. 3 ft. wide. 5 ft. southwest from southwest side at raise, 20 ft. northeast of SA #17.	0.16	0.32	\$ 5.85
19	July 22	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #18. 18 ft. northeast of SA 18. 3 ft. wide roof cut.	0.32	0.92	\$11.91
20	July 22	JUNIATA LOWER TUNNEL. VEIN No. 3. Same place as in #19. 5 ft. northeast of SA 19. 3 ft. up another small raise. 3-1/2 ft. wide. Southwest side.	0.26	0.82	\$ 9.69
21	July 23	JUNIATA CLAIM SURFACE. Outcrop Special. 35 ft. northeast from southwest end line. 1 cut 7 ft. wide, 31 ft. from pipe in raise to surface.	0.30	1.38	\$11.56
22	July 22	JUNIATA CLAIM SURFACE. Same place as in #21. 18 ft. from pipe in raise, or 22 ft. northeast of J&M end line. 1 cut, 2-1/2 ft. wide.	0.36	5.32	\$34.90
23	July 22	JUNIATA CLAIM SURFACE. Same place as in #22. 4 ft. northeast from pipe in raise. 30" wide.	0.59	1.82	\$21.70
24	July 22	MARTINEZ CLAIM. 35 ft. southwest from Heidy (57') shaft. 30" wide, southwest side open cut.	0.30	1.10	\$11.35

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
25	July 23	JUNIATA CLAIN SURFACE OUTCROP. 45 ft. north-east from pipe in raise. 7 ft. wide	0.28	2.12	\$11.45
26	July 23	MARTINEZ CLAIN SURFACE OUTCROP. N.W. Vein. 186 ft. southwest from Heidy shaft. 5' wide. Tr		1.3	\$ 1.01
27	July 23	MARTINEZ CLAIN SURFACE OUTCROP. Same place as in #26. 212 ft. from Heidy shaft. At end of outcrop near small X-cut. 6 ft. wide. Also N.W. vein. Tr		0.2	\$ 0.15
28	July 23	MARTINEZ CLAIN SURFACE OUTCROP. 146 ft. from Heidy Shaft. Also N.W. vein. Same place as in #27. 2 cuts 5' wide, 1 - 3'; 1 - 2'. Tr		0.2	\$ 0.15
29	July 23	MARTINEZ CLAIN SURFACE OUTCROP. Same place as in #28. 52 ft. southwest from Heidy shaft. N.W. vein. 1 cut 3' wide. Outcrop sample.	0.02	0.02	\$ 0.72
30	July 23	MARTINEZ CLAIN. HEIDY SHAFT. Bottom of Heidy shaft northeast side. 5 ft. wide	0.40	0.74	\$14.74
31	July 23	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #30. 55 ft. down shaft on southwest side. 6 ft. wide.	0.15	0.60	\$ 5.01
32	July 23	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #31. 2 1/2 ft. wide in Heidy Shaft, 32 ft. down. Southwest side.	0.38	0.80	\$13.22
33	July 23	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #32. In northeast drift, 35 ft. down in shaft. 2' wide, 12' in drift from shaft.	0.72	1.76	\$26.56
34	July 24	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #33. 55 ft. down in northeast drift. 3 ft. wide, 25 ft. in drift.	0.34	1.26	\$12.87
35	July 24	MARTINEZ CLAIN. HEIDY SHAFT. Northeast drift. 35 ft. down shaft in northeast drift. 3 ft. wide. 45 ft. in drift.	0.20	0.60	\$ 7.46
36	July 24	MARTINEZ CLAIN. HEIDY SHAFT. 35 ft. down shaft in northeast drift. 2 1/2 ft. wide. 68' in drift.	0.21	0.71	\$ 7.90
37	July 24	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #36 but 95 ft. in - 4 ft. wide.	0.02	0.10	\$ 0.73
38	July 24	MARTINEZ CLAIN. HEIDY SHAFT. Same place as in #37. 2 ft. wide. 6 ft. in the 10 ft. southwest drift.	0.16	0.52	\$ 6.00
39	July 24	MARTINEZ CLAIN. HEIDY SHAFT. 3 ft. wide. 9 ft. down southwest side of Heidy shaft.	0.25	1.15	\$ 9.64

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
40	July 24	JUNIATA CLAIM, 33 ft. down raise with pipe in it. 4 ft. wide. Southwest side raise.	0.41	1.27	\$16.33
41	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 92 ft. west of raise with pipe in it. 17 ft. Pit. 3 ft. wide.	0.04	0.20	\$ 1.55
42	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 15 ft. east of west face of Vein #2. 4 ft. wide. Roof of drift. Vein #2.	0.23	0.64	\$10.29
43	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 25 ft. east of west face of Vein #2. 3-1/2 ft. wide. Roof of drift. Vein #2.	0.22	1.53	\$ 8.91
44	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 40 ft. east of face of Vein #2. Roof sample. 5' wide, Vein #2.	0.13	0.94	\$ 7.02
45	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 73 ft. east of face of Vein #2. 4 ft. wide. Vein #2.	0.13	1.67	\$ 5.84
46	July 24	MARTINEZ CLAIM, JUNIATA LOWER TUNNEL, 85 ft. east of face of Vein #2. 5 ft. wide. Near chute and raise. Vein #2.	0.24	1.12	\$ 9.26
47	July 25	JUNIATA VEIN NO. 3. In last raise and chute between Juniata Upper and Middle Tunnels. Northeast of 135 raise. 45' up raise from Middle Tunnel Level. 3' wide. N.E. side.	0.40	0.60	\$14.46
48	July 25	JUNIATA VEIN NO. 3. In last raise to west between upper and middle tunnel levels. 25 ft. up on southwest side of raise. 2 ft. wide.	0.16	0.72	\$ 6.15
49	July 25	MARTINEZ CLAIM, VERTICAL SHAFT. Cross Vein 18" wide. Not on Vein #3, but in E.W. Bottom of 69' shaft. 67' down. Southwest side of shaft 18" wide.	0.02	0.20	\$ 0.85
50	July 25	MARTINEZ CLAIM, VERTICAL SHAFT. 3 ft. wide. 3 ft. in Roof of X-cut 21 ft. down. Running southwest. Not on Vein #3, but in E.W.	0.03	0.50	\$ 1.44
51	July 25	MARTINEZ CLAIM, VERTICAL SHAFT. Not on Vein #3, but in E.W. 3 ft. wide. P.W. side of vein. 3 cuts to end of drift 17 ft. in.	0.02	0.26	\$ 0.90
52	July 25	MARTINEZ CLAIM, VERTICAL SHAFT. Not on Vein #3, but in E.W. 6 ft. wide. Southwest side of X-cut. West X-cut 21 ft. down, 14 ft. in.	0.40	1.60	\$15.23
53	July 25	MARTINEZ CLAIM, VERTICAL SHAFT. Not on Vein #3 but in E.W. 4 ft. wide. 21 ft. down east of shaft. Small X-cut on vein.	0.09	0.40	\$ 3.46

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
54	July 25	MARTINEZ CLAIM. 60 ft. southeast to southeast corner of Martinez. Outcrop shaft at end of Martinez claim. 4 ft. wide, 10 ft. down pit. Southwest side.	0.03	none	\$ 1.05
55	July 30	MARTINEZ CLAIM. Southwest end, 95 ft. from 42 Center Line Stake. 2 $\frac{1}{2}$ ft. wide. Northeast side of open pit.	0.04	0.20	\$ 1.55
56	July 31	MARTINEZ CLAIM. Small stope from surface near southwest end, northeast side. 2 $\frac{1}{2}$ ft. wide, 16' down and 6' northeast in drift.	0.02	0.20	\$ 0.85
57	July 31	MARTINEZ CLAIM. Small stope from surface near southwest end. 3 ft. wide, northeast side. 10 ft. down.	0.01	none	\$ 0.35
58	July 31	MARTINEZ CLAIM. Small pit on side line of Martinez. 18 ft. wide, northwest side, 6 ft. down.	0.01	none	\$ 0.35
59	July 31	MARTINEZ CLAIM. Outcrop, 2 $\frac{1}{2}$ ft. wide. 20 ft. east of small stope from surface.	Tr.	Tr.	\$ 0.00
60	July 31	MARTINEZ CLAIM. Same place as SA 54 near blowout near Martinez Fraction. 4 ft. wide, 5 ft. down, northeast side of shaft.	0.00	Tr.	\$ 0.00
61	July 31	MARTINEZ CLAIM. 10 ft. northeast from SA 54. 5 ft. down, 4 ft. wide, 2 outs 24" wide, northeast side. HEIDY SHAFT.	0.05	0.10	\$ 0.25
62	July 31	MARTINEZ CLAIM. HEIDY SHAFT 57 ft. DEEP. 9 ft. down, northeast side, 3 ft. wide, 2 outs 18" wide.	0.31	0.99	\$11.48
63	July 31	MARTINEZ CLAIM. HEIDY SHAFT. 2 ft. wide, 21 ft. down. Face of southwest drift, 5 ft. southwest of SA 39, 12 ft. in.	0.43	1.80	\$16.20
64	July 31	MARTINEZ CLAIM. HEIDY SHAFT. 21 ft. down, 2 $\frac{1}{2}$ ft. wide, northeast side opposite small drift. 0.52	0.52	1.98	\$19.47
65	July 31	MARTINEZ CLAIM. HEIDY SHAFT. 3 sacks top of cribbed raises in drift northeast from Heidy Shaft. Ore filling.	0.12	0.56	\$ 4.57
66	July 31	MARTINEZ CLAIM. HEIDY SHAFT. Southwest side shaft, 8 ft. wide, 40 ft. down shaft.	0.75	3.75	\$28.66
67	July 31	MARTINEZ CLAIM. HEIDY SHAFT. Northeast side Heidy Shaft. Sample of cribbed wall of large pieces near bottom of shaft.	0.22	0.51	\$ 8.02

No. SA	DATE-1936 Mo. & Day	Location Remarks	Oz. Au	Oz. Ag	Total Value
68	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 20 ft. east of west face where samples SA 7, 8, 9 and 10 were taken. Width of sample - 5 ft. in roof.	0.10	0.25	\$ 3.66
69	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 5 ft. wide. Roof of drift, P.W. side, 30 ft. east of Vein No. 3.	0.09	0.66	\$ 3.57
70	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3, at H.W. portion of vein. Mixed andesite, clay and quartz adjacent to fault. 4 ft. wide.	0.01	0.20	\$ 0.50
71	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 45 ft. east of face of Vein No. 3. 2 cuts 2 ft. and 3 ft. 5 ft. wide.	0.055	0.15	\$ 2.01
72	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 2½ ft. wide, on P.W. side, which is waste rock. 55 ft. east of face of Vein No. 3.	0.045	0.15	\$ 1.66
73	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as No. 72 but in H.W. portion. 4 ft. wide, H.W. side. P.W. is waste	0.24	0.76	\$ 3.89
74	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Cut 3 ft. wide, 75 ft. east of face of Vein No. 3. P.W. side.	0.12	0.28	\$ 4.38
75	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as No. SA 74, but H.W. portion. 3 ft. wide on H.W.	0.11	0.50	\$ 4.24
76	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 115 ft. East of above face, 4 ft. wide	0.06	0.22	\$ 2.27
77	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Stope fines from #3 vein about 90 ft. east from west face of Vein No. 3.	0.11	0.29	\$ 4.03
78	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 2. Stope fines from #2 vein about 170 ft. east from west face of Vein No. 2.	0.12	1.30	\$ 5.21
79	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 6 ft. wide, Roof of drift. No. 3 Vein, 135 ft. east of face where samples SA 7 and 8 were cut at main X-cut.	0.19	0.61	\$ 7.04
80	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 5 ft. wide in roof of drift, 145 ft. East of face of Vein No. 3.	0.12	1.10	\$ 5.05

No. SA	DATE-1936 Mo. and Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
81	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 6' wide, 155' East of face of Vein No. 3.	0.14	1.80	\$ 6.23
82	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide cut in F.W. at 185' east of face of Vein #3.	0.04	0.24	\$ 1.58
83	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3, same place as in No. 82 but in H.W., 4' wide, andesite & quartz, to H.W.1 opposite 24' South X-cut.	0.07	0.33	\$ 2.70
84	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 175' east of face of vein No. 3. 5 ft. wide.	0.06	0.34	\$ 2.36
85	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 185' east of face of Vein No. 3. 2' wide. Vein not fully exposed. H.W. side of fault.	0.015	0.25	\$ 0.72
86	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 18" wide, H.W. side. 195' east of face of Vein No. 3. No quartz in roof or in bottom at fault.	0.07	0.80	\$ 3.17
87	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4 ft. wide, 205' east of face of Vein No. 3. Mixed quartz and andesite. Vein partly exposed in bottom of drift. H. W. side.	Tr.	0.12	\$ 0.09
88	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide. 215' east of face of Vein No. 3. Nearly all quartz to bottom of drift on H.W.	0.04	0.36	\$ 1.68
89	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 225' east of above face. 4 ft. wide.	0.12	1.0	\$ 4.97
90	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 3' wide, granular quartz, 235' east of face of Vein No. 3. F.W. portion of vein.	0.03	0.25	\$ 1.24
91	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, H.W. portion of vein. H.W. hard quartz.	0.02	0.20	\$ 0.95
92	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, 245' east from face of Vein No. 3. Andesite and quartz.	0.01	0.40	\$ 0.66
93	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 2 1/2' wide, 255' east from face of Vein No. 3. Quartz in H.W. not fully exposed.	0.16	0.40	\$ 6.29
94	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 3. Opposite SA 83 in H.W. X-cut. 6' in, 2' wide, 30' from West X-cut. H.W. Side of #3 Vein.	0.03	0.15	\$ 1.17
95	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 100' from Sample SA 6. 6' wide, 2' of Andesite and quartz; Stringers 4' of quartz. Vein not fully exposed in P.W.	0.12	1.0	\$ 4.97

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
96	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide, SW side stope, 12' from SA 95; 6' in roof, F.W. Quarts not fully exposed. 112' from Sample SA 6	0.10	0.62	\$ 3.98
97	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. Reef Sample. 5' wide. 113' from SA 6	0.34	1.25	\$12.87
98	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide on F.W. side. 130' from SA 6. HW side is andesite.	0.32	1.40	\$12.28
99	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 6' wide, 142' from SA 6	0.34	1.85	\$13.33
100	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide. H.W. is andesite. 150' from Sample SA 6. 3 cuts staggered to get sample. Vein not fully exposed in F.W.	0.10	0.50	\$ 3.89
101	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 6' wide, 10' northeast of Sample SA 100. 170' from Sample SA 6. 6' up from roof.	0.60	2.52	\$22.94
102	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. Northeast side 1st X-cut connecting Veins #2 and #3 drifts. 3' wide, 182' from Sample SA 6.	0.19	1.20	\$ 7.57
103	Aug. 5	JUNIATA LOWER TUNNEL. 440' in West from portal. First left-hand X-cut - H.W. 6' wide. X-cut toward Juniata shaft, Southwest drift 68' in from tunnel, 25' in drift from X-cut, ore in F.W.	0.18	1.00	\$ 7.07
104	Aug. 5	JUNIATA LOWER TUNNEL. Same place as in SA 103. F.W. side, 18' along drift to represent 5' ore in drift and 1' in X-cut. 6' wide.	Trace	0.48	\$ 0.38
105	Aug. 5	JUNIATA LOWER TUNNEL. Same place as in SA 104. Northeast side of X-cut, 6' wide. H.W. 70' to 76' in X-cut from tunnel.	0.06	0.74	\$ 2.67
106	Aug. 6	JUNIATA LOWER TUNNEL. Same place as in SA 105. Northeast side X-cut, 59' to 63' from tunnel. 4' wide. 7' of waste between this sample and sample #SA 105.	Trace	0.20	\$ 0.15
107	Aug. 5	JUNIATA LOWER TUNNEL. Northeast side of cut, 120' to 126' in from tunnel. 6' wide.	0.08	0.25	\$ 2.99
108	Aug. 5	JUNIATA CLAIM SURFACE. Outcrop 110' northeast from portal of Juniata Lower Tunnel. 4' wide	0.04	0.06	\$ 1.45
109	Aug. 7	JUNIATA CLAIM SURFACE. 54' east of hub on dump. 21' northeast of Sample #SA 108. Outcrop 8'.	0.03	0.20	\$ 1.20

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
110	Aug. 7	JUNIATA CLAIM SURFACE. 8' wide, 50' southwest of Sample #SA 108.	0.05	0.05	\$ 1.78
111	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop. 6' wide, 62' southwest of Sample #SA 110.	0.02	0.13	\$ 0.73
112	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop from vein exposed 510' east of #SA 109. 2' wide.	0.02	trace	\$ 0.70
113	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop, 6' wide, end of outcrop northeast 232' from portal.	0.005	trace	\$ 0.17
114	Aug. 7	JUNIATA LOWER TUNNEL. Sample of coarse ore from run in stope to 25' drift in first left X-cut from lower level Juniata tunnel	0.10	0.20	\$ 3.62
115	Aug. 8	JUNIATA UNDERGROUND. 3' wide over #685. Small stope in H.W., 20' up southwest side. Drift is 18' from #3 Vein.	0.29	2.20	\$11.55
116	Aug. 8	JUNIATA UNDERGROUND. Same place as in #SA 115. 2' wide, northeast side, 18' up in stope. #694.	0.25	1.05	\$ 9.42
117	Aug. 8	JUNIATA UNDERGROUND. Same place as in #SA 115. 12' in face of drift under stope, 2 1/2' wide. Quartz not fully exposed in F.W.	0.30	1.30	\$ 11.65
118	Aug. 8	JUNIATA UNDERGROUND. Same place as in #SA 117. 2' wide in roof of X-cut. Start of drift, 15' from Middle Level #693.	0.12	0.68	\$ 4.63
119	Aug. 10	JUNIATA UNDERGROUND. #3 Vein 50' northeast from west X-cut, 6' wide in F.W. X-cut northeast side, starting 2' in from drift.	0.04	0.30	\$ 1.63
120	Aug. 10	JUNIATA UNDERGROUND. #3 Vein 50' northeast from west X-cut, 7' wide, southwest side to edge of drift on #3 Vein Drift.	trace	none	\$ 0.00
121	Aug. 10	JUNIATA LOWER TUNNEL. VEIN No. 3. H.W. X-cut. 2' wide, 15' in H.W. X-cut. Southwest side opposite sample #SA 83.	0.13	1.60	\$ 7.53
122	Aug. 10	JUNIATA LOWER TUNNEL. VEIN No. 3. 12" wide. 24' in. Face of H.W. X-cut, 30' from west X-cut.	0.24	1.56	\$ 9.60
123	Aug. 10	JUNIATA LOWER TUNNEL. VEIN No. 3. Broken ore left in stope 3' wide. 20' above #3 level, 10' above sample #SA 76.	0.11	0.10	\$ 3.93
124	Aug. 10	JUNIATA LOWER TUNNEL. VEIN No. 3. 6' wide, 5' above sample #SA 76, 10' above roof of #3 Vein drift.	0.10	0.90	\$ 4.19
125	Aug. 10	JUNIATA LOWER TUNNEL. VEIN No. 2. Northeast end of stope on #2 Vein, 20' up, 2 1/2' wide F.W.	0.15	0.35	\$ 5.90

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
126	Aug.10	JUNIATA LOWER TUNNEL. VEIN NO. 2. 5' wide including 2' horse waste, northeast side, 20' up H.W.	0.07	4.70	\$ 6.07
127	Aug.10	JUNIATA LOWER TUNNEL. VEIN NO. 2. Sample of coarse pieces of quartz in broken ore in stope on #2 Vein near sample #SA125.	0.04	0.8	\$ 2.02
128	Aug.10	JUNIATA LOWER TUNNEL. VEIN NO. 2. #3 Vein 8' southwest of sample #SA 74 on X fault, 3' wide, F.W. side.	0.06	0.75	\$ 2.68
129	Aug.10	JUNIATA LOWER TUNNEL. VEIN NO. 3. 8' north-east of sample #SA75, H.W. side X fault, 6' wide.	0.22	0.4	\$ 3.01
130	Aug.10	JUNIATA LOWER TUNNEL. VEIN NO. 3. Last X-cut from Raise 133 on #3 Vein. 5' wide, 6' south from #2 drift.	—	—	\$ 0.37
131	Aug.11	JUNIATA LOWER TUNNEL. VEIN NO. 2. 4' wide, #2 Vein. 60 ft. northeast of sample #SA 6	—	—	\$ 5.36
132	Aug.11	JUNIATA LOWER TUNNEL. VEIN No. 2. 4' wide, #2 Vein, 30 ft. northeast of sample #SA 6.	—	—	\$ 6.23
133	Aug.11	JUNIATA LOWER TUNNEL. VEIN NO. 2. 4' wide, 15' above sample #SA 46 in stope. #2 Vein.	0.18	0.72	\$ 6.76
134	Aug.11	JUNIATA LOWER TUNNEL. VEIN NO. 2. 5' wide, 20' up in stope, 32' northeast of #SA 44	0.20	0.90	\$ 7.58
135	Aug.11	JUNIATA LOWER TUNNEL. VEIN No. 2. 4' wide, 15' up, 16' northeast of sample #SA 44	0.16	0.46	\$ 5.89
136	Aug.11	JUNIATA LOWER TUNNEL X-CUT BETWEEN VEINS 1 AND 2. 18' wide, 10' north of Sample #SA79 in X-cut between #1 and #2 Veins	0.045	0.16	\$ 1.67
137	Aug.11	JUNIATA LOWER TUNNEL. Quartz in Juniata Lower Tunnel Level 3' wide, 153' southwest of first left X-cut.	0.05	0.25	\$ 1.86
138	Aug.11	JUNIATA LOWER TUNNEL. VEIN NO. 1. Northeast end of #1 Vein. Small X-cut at end of fault. 4' wide, 8' in.	0.055	0.15	\$ 2.01
139	Aug.11	JUNIATA LOWER TUNNEL. VEIN No. 1. 3' wide, H.W. X-cut, 8' in from #1 Vein Level, 27' from main X-cut on lower level.	0.02	0.13	\$ 0.78
140	Aug.12	JUNIATA LOWER TUNNEL. VEIN NO. 2. 12' up raise northeast side, 6' wide.	0.19	0.81	\$ 7.17
141	Aug.12	JUNIATA LOWER TUNNEL RAISE. 20' up southwest side, 4 1/2' wide.	0.21	1.49	\$ 8.31

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
142	Aug.12	JUNIATA LOWER TUNNEL RAISE. VEIN NO. 2. 30' up, 6' wide, northeast side.	0.28	1.62	\$10.84
143	Aug.12	JUNIATA LOWER TUNNEL RAISE. VEIN NO. 2. 40' up, southwest side, 6' wide.	0.13	0.47	\$ 4.85
144	Aug.12	JUNIATA LOWER TUNNEL RAISE. VEIN NO. 2. 53' up, 3' wide, southwest side.	0.12	1.28	\$ 5.02
145	Aug.13	PHILADELPHIA TUNNEL. Northeast face, 6' wide, F.W. Vein, 180' from main X-cut.	0.11	0.1	\$ 3.95
146	Aug.13	PHILADELPHIA TUNNEL. 3' wide, northeast side stope, 141 ft. in.	0.38	1.4	\$14.39
147	Aug.13	PHILADELPHIA TUNNEL. 3' wide, southwest side of stope, 118' in from X-cut.	0.09	4.9	\$ 6.42
148	Aug.13	PHILADELPHIA TUNNEL. 3' wide, roof sample, 73' in.	0.29	1.1	\$11.00
149	Aug.13	PHILADELPHIA TUNNEL. 3' wide, roof sample, 52' in.	0.14	0.66	\$ 5.41
150	Aug.13	PHILADELPHIA TUNNEL. 3' wide, floor sample, 36' in.	0.07	0.05	\$ 2.84
151	Aug.13	PHILADELPHIA TUNNEL. 4' wide, southwest X-cut, 5' in roof.	0.03	0.4	\$ 1.36
152	Aug.13	PHILADELPHIA TUNNEL. 5' wide, roof sample, southwest drift, 84' in.	0.09	0.5	\$ 3.54
153	Aug.13	PHILADELPHIA TUNNEL. 3' wide, H.W. Floor sample, Edge of stope, 60' in.	0.60	1.2	\$21.92
154	Aug.13	PHILADELPHIA TUNNEL. 3' wide, roof sample, 72' in.	0.28	1.3	\$10.81
155	Aug.13	PHILADELPHIA TUNNEL. 5' wide, 15' up in small stope over windlass, 122' in.	0.18	1.0	\$ 7.07
156	Aug.13	PHILADELPHIA TUNNEL. 3' wide, over #9806, 15' up southwest end of stope, 718' in from X-cut.	0.19	1.6	\$ 7.88
157	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 5' in, 18" wide, roof sample.	0.01	none	\$ 0.35
158	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. Roof sample, 20' in, 2 1/2" wide.	0.03	0.36	\$ 1.33
159	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. Roof sample, 35' in, 2" wide.	0.005	none	\$ 0.13
160	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 3' wide, 50' west end of stope & tunnel.	Trace	0.12	\$ 0.09

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
161	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. East end of stope. 2' wide, 85' from portal, 10' from surface.	0.12	0.28	\$ 4.42
162	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 2 $\frac{1}{2}$ ' wide, 2nd stope; east end, 115' from portal, 10' from surface.	0.16	0.56	\$ 6.03
163	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET CLAIM, 2' wide, 5' down small stope, east end, 195' from portal.	0.34	0.90	\$12.59
164	Aug.14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 1 cut east side 3' and 1 cut west side 3 $\frac{1}{2}$ ' in small shaft, 10' down, 231' from portal.	0.08	0.30	\$ 3.03
165	Aug.14	WIDE WEST LOWER TUNNEL. 2 $\frac{1}{2}$ ' wide. West side of raise connecting with upper tunnel, 300' from portal, P.W. side of tunnel.	0.02	2.00	\$ 2.24
166	Aug.14	WIDE WEST LOWER TUNNEL. 520' in, 5' wide in roof special.	0.02	0.70	\$ 1.24
167	Aug.14	WIDE WEST LOWER TUNNEL. 336' in, 4' wide at end of vein.	0.02	0.66	\$ 1.21
168	Aug.14	WIDE WEST LOWER TUNNEL. 565' in, H.W. side, Cross Vein 2' wide.	0.02	0.10	\$ 0.78
169	Aug.14	WIDE WEST LOWER TUNNEL. 4' wide, 740' from portal, 30' down winze.	0.03	0.85	\$ 1.70
170	Aug.15	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 5' wide, west drift, 352 level, face, 70' from Raise X-cut.	0.04	0.90	\$ 2.09
171	Aug.15	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 4 $\frac{1}{2}$ ' wide, 60' in from Raise.	0.15	1.00	\$ 6.02
172	Aug.15	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 5' H.W. side, 46' in.	0.10	0.62	\$ 3.96
173	Aug.15	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 3 $\frac{1}{2}$ ' wide, manganese ore, 30' in, H.W., East side of X-cut.	0.07	0.40	\$ 2.76
174	Aug.15	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 6' wide on P.W.	Trace	Trace	None
175	Aug.15	WIDE WEST UPPER TUNNEL. Top of small shaft connecting 2 levels, 12' above sample SA165, 3' wide, west end of drift, 300' in.	0.04	1.36	\$ 2.44
176	Aug.16	WIDE WEST UPPER TUNNEL. 5' wide, 20' east of sample #SA175. Drift on Upper Level	Trace	1.0	\$ 0.77

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
177	Aug.14	WIDE WEST UPPER TUNNEL. 3½' wide, 40' east of #166	0.005	0.40	\$ 0.49
178	Aug.15	WIDE WEST UPPER TUNNEL. Flat vein 18" wide, 30' past ore pass in right-hand X-cut. 150' from main X-cut Tunnel.	0.02	0.20	\$ 0.85
179	Aug.15	WIDE WEST UPPER TUNNEL. 220' in Lower Tunnel, 25' in F.W. X-cut, 3½' wide.	0.02	0.40	\$ 1.01
180	Aug.17	DEL MONTE DRAINAGE TUNNEL. 76 ft. in. 1.8' wide.	trace	0.15	\$ 0.09
181	Aug.17	YELLOW JACKET LOWER TUNNEL. 18" wide, 15' back from face of drift.	trace	0.20	\$ 0.12
182	Aug.17	YELLOW JACKET LOWER TUNNEL. 6" wide, 10' in east side X-cut, 30' back from face.	trace	trace	none
183	Aug.17	WIDE WEST, JOHNSON STOP. 2' wide, 5' west of fault X Upper Drift.	0.015	0.39	\$ 0.77
184	Aug.17	WIDE WEST, JOHNSON STOP. 3' wide, 20' from drift.	0.29	3.51	\$12.49
185	Aug.17	WIDE WEST, JOHNSON STOP. 2' wide, pillar in stope, 15' above 184.	0.01	0.19	\$ 0.47
186	Aug.18	WIDE WEST, JOHNSON STOP. 3' wide, 15' east of 185, small drift in stope.	0.005	0.10	\$ 0.23
187	Aug.18	WIDE WEST, JOHNSON STOP. 2½' wide roof sample, start of upper drift above Johnson stope, #3 vein.	0.04	0.76	\$ 1.89
188	Aug.18	WIDE WEST, JOHNSON STOP. 2' wide, 20' in toward stope.	0.01	0.39	\$ 0.60
189	Aug.18	WIDE WEST, JOHNSON STOP. 18" wide, 35' in, #3 Vein.	trace	0.20	\$ 0.12
190	Aug.18	WIDE WEST, JOHNSON STOP. 2½' wide, 5' from face, 45' in.	trace	0.10	\$ 0.06
191	Aug.18	WIDE WEST, JOHNSON STOP. 2½' wide, East stope on #2 Vein, 5' in from portal.	0.025	0.78	\$ 1.37
192	Aug.18	WIDE WEST, JOHNSON STOP. 25' in, 2' wide.	0.01	0.49	\$ 0.66
193	Aug.18	WIDE WEST, JOHNSON STOP. #2 VEIN, 45' in, 4' wide, out of stope.	none	trace	none
194	Aug.18	WIDE WEST, JOHNSON STOP. 2½' wide, #1 Vein, Ballonet incline, start of stope.	0.065	0.54	\$ 2.61
195	Aug.18	WIDE WEST, JOHNSON STOP. 2' wide, 12' up in roof of stope.	0.40	3.90	\$16.51

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
196	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 5' from Raise, H.W., 3' wide.	0.15	0.65	\$ 5.65
197	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. Leaving out 18" andesite, cut 2' wide, 5' from Raise.	trace	0.10	\$ 0.06
198	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 6' wide, 25' in.	0.07	0.23	\$ 2.59
199	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN NO.1. Bottom of raise, 4' wide, 25' up on west side of stope	0.035	0.77	\$ 1.71
200	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. 6' wide, 10' East of #SA199, 25' up.	0.03	0.27	\$ 1.23
201	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 50' in, 10' above drift, 7' wide.	0.12	0.08	\$ 4.25
202	Aug.19	JUNIATA INTERMEDIATE LEVEL, VEIN NO. 1. Fine ore from stope, under #200.	0.15	0.65	\$ 5.65
203	Aug.19	LAST CHANCE, WIDE WEST, MIDDLE LEVEL. 18" wide, 10' in X-cut from level; perpendicular vein.	0.035	0.17	\$ 1.52
204	Aug.19	LAST CHANCE, WIDE WEST, MIDDLE LEVEL. 2' wide, bottom of vein, near floor, 10' from vent pipe on Middle Level.	0.035	0.17	\$ 1.52
205	Aug.19	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3 cuts 18" each, 6', 10' and 16' from small vent.	0.03	0.07	\$ 1.09
206	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3' wide, west side of lower vein in stope, 25' from Middle Level.	0.22	4.20	\$10.35
207	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 2' wide, 45' up; past first fault.	0.98	13.64	\$44.10
208	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 60' up, 2' wide, past second fault.	0.54	11.085	\$27.42
209	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 6' wide with 12" quartz roof and 12" floor. Upper Vein top of chute at end of Upper Level	0.08	0.90	\$ 5.49
210	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3' wide, 25' above #209	0.03	1.13	\$ 1.92
211	Aug.20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 5½' wide, 15' east and 10' above SA 210. Top of pillar.	0.32	3.46	\$31.36
212	Aug.20	WIDE WEST, LAST CHANCE, 4' wide, East of SA 210 on pillar of ore above Upper Level.	0.18	5.22	\$10.32
213	Aug.20	WIDE WEST, LAST CHANCE. Upper Vein #5. 5' wide at end of pillar between 1" and 2" opening to upper level.	0.32	7.0	\$34.09

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
214	Aug.20	WIDE WEST, LAST CHANCE. 2½' wide, 7' from east Raise on Upper Level, at third fault.	0.07	1.73	\$ 3.78
215	Aug.20	WIDE WEST, LAST CHANCE. 4' wide, 50' in.	0.10	1.70	\$ 4.81
216	Aug.20	WIDE WEST, LAST CHANCE. 5' wide, 48' in. Upper level.	0.36	2.44	\$14.48
217	Aug.20	WIDE WEST, LAST CHANCE. 5' wide, 60' in, near chute at west end of Upper Level.	0.03	0.40	\$ 1.36
218	Aug.21	WIDE WEST, LAST CHANCE. F.W.Stope, 2½' wide, west end near small winze.	0.01	0.30	\$ 0.58
219	Aug.21	WIDE WEST, LAST CHANCE. 3½' wide, 25' East of #SA218; Bolham Stope.	0.01	0.40	\$ 0.66
220	Aug.21	WIDE WEST, LAST CHANCE. 2' wide, 20' west of Middle Winze to stope.	0.02	0.50	\$ 1.09
221	Aug.21	WIDE WEST, LAST CHANCE. 3' wide, bottom of east winze; fault vertical vein & flat vein.	0.04	0.60	\$ 1.86
222	Aug.21	JUNIATA LOWER TUNNEL. First X-cut south from Main X-cut toward shaft; 6' wide, 124-130' in.	0.03	0.40	\$ 1.36
223	Aug.22	MARTINEZ CLAIM, VERTICAL SHAFT. Check sample on SA 52. 5' wide, east side west X-cut 10'-15'. 69 ft. shaft.	0.23	0.10	\$ 8.92
224	Aug.22	MARTINEZ CLAIM, VERTICAL SHAFT. 2½' wide, 69' shaft. Opposite West X-cut in shaft. F.W. of vein in drift.	0.02	0.30	\$ 0.33
225	Aug.22	JUNIATA RAISE. RIGHT BETWEEN LOWER AND INTERMEDIATE LEVELS. VEIN NO. 1. 5' wide, 11' down west side.	0.28	1.52	\$10.87
226	Aug.22	JUNIATA RAISE. RIGHT BETWEEN LOWER AND INTERMEDIATE LEVELS. VEIN NO. 1. 5½' wide, 21' down same side.	0.32	2.68	\$13.26
227	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 2½' wide in drift east from 58' shaft west of SA 34. 19' in.	0.78	2.46	\$29.19
228	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 3½' wide, East SA 32. 31' in.	0.40	1.44	\$15.11
229	AUG.24	MARTINEZ CLAIM, NEIDY SHAFT. 4' wide, East drift of 59' shaft. 37' in.	0.28	1.32	\$10.82
230	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 2½' wide, 10' west of SA 36. 56' in East.	0.20	0.72	\$ 7.55
231	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 3½' wide, 10' west of SA 37. 75' in.	0.13	0.67	\$ 5.07

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
232	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 2½' wide, 5' west of SA 37. 82' in.	0.11	0.30	\$ 4.08
233	Aug.24	MARTINEZ CLAIM, NEIDY SHAFT. 5' wide, H.W. side of slope. 90' in.	0.03	0.70	\$ 1.59
234	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5' wide, 28' down raise between lower tunnel and intermediate level.	0.33	0.42	\$13.62
235	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5½' wide, 41' down Raise. Same Raise as in 234	0.51	0.69	\$18.62
236	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 4' wide, 51' down same raise described in 234 and 235.	0.41	4.39	\$17.45
237	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 4' wide, 58' down same raise described in 234-5-6.	0.20	1.88	\$ 8.45
238	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5½' wide, 73' down same raise described in 234 to 237	0.18	1.00	\$ 7.07
239	Aug.25	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5' wide, 85' down same raise described in 234 to 238	0.16	0.68	\$ 6.12
240	Aug.26	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5' wide, 95' down same raise described in 234 to 239.	0.07	0.65	\$ 2.95
241	Aug.26	JUNIATA LOWER TUNNEL, VEIN NO. 1. 6' wide, 105' down same raise described in 234 to 240.	0.16	0.64	\$ 6.09
242	Aug.26	JUNIATA LOWER TUNNEL, VEIN NO. 1. 5' wide, 115' down same raise described in 234 to 241.	0.02	0.18	\$ 0.83
243	Aug.26	JUNIATA INTERMEDIATE TUNNEL, VEIN NO. 1. 5½' wide, 130' down same raise described in 234 to 242	trace	0.40	\$ 0.51
244	Aug.26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 28'-30' over slope in middle level from 153.	0.10	0.10	\$ 5.58
245	Aug.26	JUNIATA MIDDLE TUNNEL LEVEL. 3' wide, 20'-23' from 153 drift.	trace	0.50	\$ 0.23
246	Aug.26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 15'-27' from 153 drift.	trace	0.38	\$ 0.29
247	Aug.26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 8'-10' from 153 drift.	trace	trace	none
248	Aug.26	JUNIATA MIDDLE TUNNEL LEVEL. 4' wide, Start of 153 drift.	0.36	0.44	\$12.94
249	Aug.27	JUNIATA MIDDLE TUNNEL LEVEL. 8' wide, 45' west from start of 153 drift, on Fault. P.W. side.	trace	0.03	\$ 0.02

No. DATE-1936 SA No. & Day	Location Description	Au Oz.	Ag. Oz.	Total Value
250 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL. 4' wide, west side of start of 171 X-cut. H.W. side of fault	0.22	0.38	\$ 7.99
251 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL. 2½' wide, Brecciated quartz in fault, at first ore pass. 38' from #171 X-Cut.	0.01	0.40	\$ 0.66
252 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 5½' wide, roof sample, 100' from #171 X-Cut.	0.38	0.44	\$13.64
253 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 4½' wide, roof sample, 112' from X-Cut.	0.26	1.14	\$ 9.98
254 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 5' wide, floor sample, 133' from X-Cut 171.	0.08	0.84	\$ 3.45
255 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 5' wide, floor sample, 146' in.	0.04	0.10	\$ 1.48
256 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 4' wide, floor sample, 163' in.	0.01	0.30	\$ 0.58
257 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 2' wide, roof sample, 168' in.	0.11	0.90	\$ 4.54
258 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 2½' wide, P.W. side, hard quartz, 178' in.	0.18	none	\$ 6.30
259 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 4' wide, roof sample, 196' in.	0.08	0.44	\$ 3.14
260 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 3' wide, roof sample, 213' in, 153 drift & 155 X-Cut.	0.18	0.64	\$ 6.79
261 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, 3'-8' east side of 155 X-Cut to #1 Vein.	0.01	0.40	\$ 0.66
262 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, 8'-13' to P.W.	trace	0.40	\$ 0.51
263 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 2½' wide, #2 Vein. Start of 151 drift from 155 X-Cut.	0.12	0.43	\$ 4.57
264 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 3½' wide, 19' west of 263. Vein #2.	0.02	0.59	\$ 1.15
265 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 2. 5' wide, west face of 151 drift P.W. side, 34' west of 164.	0.18	0.44	\$ 5.94
266 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, west face of X-cut, 32' west of 264	0.03	0.50	\$ 1.44
267 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, west face of X-cut, 30' west of 264.	0.015	0.50	\$ 0.92

No.	DATE-1936	Location	Au	Ag	Total
SA	Mo. & Day	Description	Oz.	Oz.	Value
268	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. Raise to 100' level. 3½' wide, west side of raise, 40' up raise to 100' level.	0.17	0.55	\$ 6.37
269	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. 3' wide, west side, 50' up raise to 100' level.	0.03	0.44	\$12.94
270	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. 4' wide, west side, 60' up raise to 100' level.	0.68	1.72	\$32.12
271	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. 3½' wide, east side on pillar. 70' up raise to 100' level, at bottom of stone cribbing.	0.24	0.48	\$ 8.49
272	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. 4' wide, east side, 82' up raise to 100' level.	1.22	1.78	\$44.07
273	Aug. 29	JUNIATA MIDDLE LEVEL, RAISE TO UPPER LEVEL, VEIN No. 3. 2' wide, east side, 94' up raise to 100' level.	0.67	0.73	\$24.01
274	Aug. 29	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 100' level. Face 4½' wide, 132' from west raise from Middle Level.	0.10	0.50	\$ 5.89
275	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 4½' wide, South vein, 92' west east end.	0.44	1.00	\$16.17
276	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 5' wide, 97' in south drift, 6' west of SA275	0.22	0.25	\$ 7.89
277	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 3½' wide, 105' in, 8' west of 276	0.30	0.90	\$11.19
278	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 4' wide, 5' west of 277	0.20	0.60	\$ 7.46
279	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 3½' wide, 5' west of 278.	0.20	0.70	\$10.69
280	Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN NO. 3. 4' wide, 5' west of 279.	0.25	0.40	\$ 9.06
281	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 2½' wide, 87' in. Start of south drift left side.	0.06	0.10	\$ 2.18
282	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 3' wide. Start of north drift. 92' from raise.	0.02	0.10	\$ 0.78
283	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 4½' wide, face of north drift, 100' in from raise.	0.03	0.40	\$ 1.36
284	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 2½' wide, 12' east of SA 17.	0.20	0.48	\$ 7.37

No. DATE-1936 SA No. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
285 Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 2½" wide, 5' east of 138' raise. Middle Level.	0.14	0.76	\$ 5.49
286 Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 6" wide, 6' down from top of 138' raise, west side, near breast of Vein No. 3.	0.13	0.42	\$ 6.62
287 Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 3" wide, 27' down raise, west side.	0.34	0.86	\$12.56
288 Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 4" wide, 32' up raise, west side.	0.04	0.76	\$ 1.99
289 Sept. 1	JUNIATA CLAIM. 16 FOOT SHAFT. 5" wide at bottom of 16' shaft. Top of vein in left-hand X-cut Lower Level.	0.02	0.36	\$ 0.68
290 Sept. 1	JUNIATA CLAIM. SURFACE. OUTCROP SAMPLE, 6" wide, 5' west of 40' shaft.	trace	0.40	\$ 0.31
291 Sept. 1	JUNIATA CLAIM. SURFACE. 3" wide, 25' north-east of 40' shaft. Small hole 4".	0.02	0.40	\$ 1.01
292 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3" wide, 80' in at east X-cut face, 5' in.	0.18	0.62	\$ 6.76
293 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 5" wide, east side of X-cut on vein 130' in from portal. West of 292	0.04	0.56	\$ 1.68
294 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 4½" wide, 20' south of 293 in drift. Vein is 130' in from portal.	0.78	2.22	\$29.01
295 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3½" wide, south of X-cut off Vein 130' in from portal. 12' south of first X-cut.	0.16	0.64	\$ 6.25
296 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3½" wide, 10' north of second X-cut. Vein 130' in from portal.	0.18	0.42	\$ 6.62
297 Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3" wide on cross slip at south face of drift. Vein 130' in from portal.	trace	0.60	\$ 0.46
298 Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL. CLARA CLAIM. 6" wide, south end of stope on surface under 502.	0.16	0.74	\$ 6.13
299 Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL. CLARA CLAIM. 4½" wide, north end of stope surface under 569.	0.16	0.76	\$ 6.19
300 Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL. CLARA CLAIM. 5" wide, south of stope under 563.	0.34	1.26	\$12.67

No. SA	DATE-1936 Mo. & Day	Location Description	Au Oz.	Ag Oz.	Total Value
301	Sept. 3	NEW EMERALDA DISTRICT. ANN VEIN. Stope from Goldfield Shaft depth 20'. South end of stope. H.W. side, 38' south of shaft. 4' wide.	0.03	0.50	\$ 3.19
302	Sept. 3	NEW EMERALDA DISTRICT. ANN VEIN. 3½' wide, 50' south of shaft.	0.30	3.10	\$33.89
303	Sept. 3	NEW EMERALDA DISTRICT. ANN VEIN. 15' deep, 20' south of shaft. Width 3.5'.	1.06	3.14	\$39.52
304	Sept. 3	NEW EMERALDA DISTRICT. ANN VEIN. 20' deep, 25' north of shaft. Width 4'.	0.43	1.40	\$17.88
305	Sept. 3	SOUTH REPUBLIC OPEN CUT. South end of south cut. 1.5' wide.	0.02	0.20	\$ 0.85
306	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 3' at north end of south cut.	0.04	0.40	\$ 1.71
307	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 4.5' at south end of north cut.	0.02	0.40	\$ 1.01
308	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 2.5' at north end of north cut.	0.05	0.35	\$ 2.02
309	Sept. 3	SOUTH REPUBLIC SHAFT (near south end line). F.W. on north side of 40' shaft. Width 3'.	0.12	0.50	\$ 4.59
310	Sept. 12	SOUTH REPUBLIC CLAIM. First pit northeast of shaft on southwest end. 4' wide at southwest side.	---	---	---
311	Sept. 12	SOUTH REPUBLIC CLAIM. Second pit from shaft, northeast side. Width 3.5'	---	---	---
312	Sept. 12	NORTHERN BELL CLAIM. 70' shaft from stope, 25' down, 10' up stope, 30' in southwest end, 2' wide.	---	---	---
313	Sept. 12	NORTHERN BELL CLAIM. 15' in southwest end of shaft described in 312. 3' wide.	---	---	---
314	Sept. 12	NORTHERN BELL CLAIM. 20' northeast from shaft at fault, 18" wide. Same shaft described in 313.	---	---	---
315	Sept. 12	NORTHERN BELL CLAIM. 10' from shaft, 2' wide, northeast end. Same shaft described in 314.	---	---	---
316	Sept. 12	NORTHERN BELL CLAIM. 2' from bottom of shaft, southwest side near fault, across 2'. Same shaft described in 315.	---	---	---
317	Sept. 12	X-CUT TUNNEL TO PROSPECTUS FAULT. 4' wide, northwest side, opposite east drift.	---	---	---

No. DATE-1936	Location	Au	Ag	Total
SA No. & Day	Remarks	Oz.	Oz.	Value
318 Sept.12	SILVER LINING MINE. 25° north from G.C.stope. 4° wide, H.W.side of vein in fault crossing.	0.24	1.03	\$ 9.23
319 Sept.17	SILVER LINING MINE. 4° wide from F.W. over #6928	0.13	0.27	\$ 4.76
320 Sept.17	SILVER LINING MINE. First X-cut northeast from stope. Opposite 6927. 3° wide.	0.11	0.50	\$ 4.24
321 Sept. 17	SILVER LINING MINE. 4½° wide, opposite 6926. First X-cut northeast from stope. Northeast side	0.06	0.34	\$ 2.56
322 Sept.17	SILVER LINING MINE. Second X-cut to northeast. 5° wide, 2½° in from drift. Northeast side.	0.24	0.36	\$ 8.67
323 Sept.17	SILVER LINING MINE. 7½-11½ toward H.W. 4° wide.	0.08	0.12	\$ 2.89

AURORA MINING DISTRICT, MINERAL COUNTY, NEVADA
Sampling Data by J. Moisan
1936

No.	DATE-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
317	Sept. 12	CROSS-CUT TUNNEL TO PROSPECTUS FAULT. 4' wide, Northwest side, Opposite East drift.	—	—	—
180	Aug. 17	DEL MONTE DRAINAGE TUNNEL. 76 ft. in. 1.8' wide	trace	0.15	\$ 0.09
1	July 14	HILDA CLAIM. 5 ft. wide H.W. to F.W., S.W. side, North end cut. At 12008 #9, 12016 and 17. 3 step cuts, 12", 36", 12".	0.18	0.27	\$ 6.47
2	July 14	HILDA CLAIM. 4 ft. wide H.W. to F.W., N.E. side, Second cut from North end. 1 Straight cut, broken, quartered in field. At 12009 #9. About 30 ft. South of SA 1.	0.26	0.34	\$ 9.31
3	July 14	HILDA CLAIM. 4 ft. wide H.W. to F.W., S.W. side, 3rd cut from north end. 3 step cuts, 18", 18", 12". At sample 12010 #10, about 30 ft. South of SA 2.	0.085	0.07	\$ 3.01
170	Aug. 15	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 5' wide, West drift, 352' level, face, 70' from Raise X-Cut.	0.04	0.80	\$ 2.09
171	Aug. 15	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 4 1/2' wide, 60' in from raise.	0.15	1.00	\$ 6.02
172	Aug. 15	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 5' wide, H.W. side, 46' in.	0.10	0.62	\$ 3.98
173	Aug. 15	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 3 1/2' wide, Manganese Ore, 30' in H.W. East side of X-cut.	0.07	0.40	\$ 2.76
174	Aug. 15	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 6' wide on F.W.	trace	trace	none
196	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 5' from Raise, H.W., 5' wide.	0.15	0.65	\$ 5.66
197	Aug. 18	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. Leaving cut 18" Andesite, Cut 2' wide, 5' from Raise.	trace	0.10	\$ 0.06
198	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 6' wide, 25' in.	0.07	0.23	\$ 2.59
199	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. Bottom of Raise, 4' wide, 25' up on West side of stope.	0.035	0.77	\$ 1.71
200	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 6' wide, 10' East SA199, 25' up.	0.03	0.27	\$ 1.23

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
201	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 50 ft. in, 10 ft. above drift. 7 ft. wide.	0.12	0.03	\$ 4.25
202	Aug. 19	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. Fine ore from stope, under 200.	0.15	0.05	\$ 5.66
243	Aug. 26	JUNIATA INTERMEDIATE LEVEL, VEIN No. 1. 5 $\frac{1}{2}$ ' wide, 150' down same raise described in Nos. SA 254 to 242.	trace	0.40	\$ 0.51
103	AUG. 5	JUNIATA LOWER TUNNEL. 440' in West from portal. First left-hand X-cut - H.W. 6' wide. X-cut toward Juniata shaft, Southwest drift 68' in from tunnel, 25' in drift from X-cut, Ore in F.W.	0.13	1.00	\$ 7.07
104	Aug. 5	JUNIATA LOWER TUNNEL. Same place as in No. 103. F.W. Side, 18' along drift to represent 5' ore in drift and 1' in X-cut. 6' wide.	trace	0.43	\$ 0.53
105	Aug. 5	JUNIATA LOWER TUNNEL. Same place as in No. 104. Northeast side of X-cut, 6' wide. H.W., 70' to 73' in X-cut from tunnel.	0.06	0.74	\$ 2.67
106	Aug. 5	JUNIATA LOWER TUNNEL. Same place as in No. 105. Northeast side X-cut. 59' to 63' from tunnel. 4' wide. 7' of waste between this sample and SA 105.	trace	0.20	\$ 0.15
107	Aug. 5	JUNIATA LOWER TUNNEL. Northeast side of cut, 120' to 126' in from tunnel. 6' wide.	0.03	0.25	\$ 2.99
114	Aug. 7	JUNIATA LOWER TUNNEL. Sample of coarse ore from run in stope to 25' drift in first left X-cut from lower level Juniata tunnel.	0.10	0.20	\$ 3.62
137	Aug. 11	JUNIATA LOWER TUNNEL. Quartz in Juniata Lower Tunnel Level. 3' wide, 153' southwest of first left X-cut.	0.05	0.25	\$ 1.86
222	Aug. 21	JUNIATA LOWER TUNNEL. First X-cut South from main X-cut toward shaft, 6' wide, 124-130' in.	0.03	0.40	\$ 1.36
136	Aug. 11	JUNIATA LOWER TUNNEL X-CUT BETWEEN VEINS 1 AND 2. 18' wide, 10' North of SA 79 in X-cut between #1 and #2 veins.	0.045	0.16	\$ 1.67
141	Aug. 12	JUNIATA LOWER TUNNEL RAISE. 20' up southwest side. 4 $\frac{1}{2}$ ft. wide. VEIN No. 2.	0.21	1.49	\$ 8.51
142	Aug. 12	JUNIATA LOWER TUNNEL RAISE. VEIN No. 2. 30' up, 6' wide, Northeast side.	0.23	1.62	\$10.94
143	Aug. 12	JUNIATA LOWER TUNNEL RAISE. VEIN No. 2. 40' up southwest side. 6' wide.	0.13	0.47	\$ 4.35
144	Aug. 12	JUNIATA LOWER TUNNEL RAISE. VEIN No. 2. 53' up, 3' wide, southwest side.	0.12	1.23	\$ 5.02

No. Date-1936 SA No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
138 Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 1. Northeast end of #1 Vein. Small X-cut at end of fault. 4' wide, 8' in.	0.055	0.15	\$ 2.01
139 Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 1. 3' wide, H.W. X-cut 8' in from #1 Vein level. 27' from main X-cut on lower level.	0.02	0.13	\$ 0.73
234 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 5' wide, 28 ft. down raise between lower tunnel and intermediate level.	0.38	0.42	\$13.62
235 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 5 1/2' wide, 41 ft. down Raise. Same raise as in 234.	0.51	0.69	\$13.62
236 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 4' wide, 51 ft. down same raise described in 234 & 235.	0.41	4.39	\$17.43
237 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 4' wide, 58' down same raise described in 234, 5, 6.	0.20	1.88	\$ 3.45
238 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 5 1/2' wide, 73' down same raise described in 234 to 237.	0.18	1.00	\$ 7.07
239 Aug. 25	JUNIATA LOWER TUNNEL, VEIN No. 1. 5' wide, 83' down same raise described in 234 to 238.	0.16	0.66	\$ 6.12
240 Aug. 26	JUNIATA LOWER TUNNEL, VEIN No. 1. 5' wide, 95' down same raise described in 234 to 239.	0.07	0.65	\$ 2.95
241 Aug. 26	JUNIATA LOWER TUNNEL, VEIN No. 1. 6' wide, 105' down same raise described in 234 to 240.	0.16	0.64	\$ 6.09
242 Aug. 26	JUNIATA LOWER TUNNEL, VEIN No. 1. 5' wide, 115' down same raise described in 234 to 241.	0.02	0.13	\$ 0.83
6 July 20	JUNIATA LOWER TUNNEL, VEIN No. 2. Northeast end Martinez Lower Tunnel Level, Southwest face of H.W. Vein. 75' from last X-cut to raise on S.E. Vein. Width of Vein & Cut, 4 1/2'.	0.43	0.252	\$16.67
7 July 20	JUNIATA LOWER TUNNEL, VEIN No. 2. Same cut. S.E. vein, 18' southwest from raise on this vein. Beginning at H.W. (S.E. side) 0' to 2'. Width of sample, 2'.	0.07	0.23	\$ 2.59
8 July 20	JUNIATA LOWER TUNNEL, Vein No. 2. Same as in No. 7 except from H.W. 6' to 11'. Width of sample, 5'.	0.025	0.13	\$ 0.96
41 July 24	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 17' Pit. 2' wide. 92' West of Raise with pipe in it.	0.04	0.20	\$ 1.55
43 July 25	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 15' East of West face of Vein #2. 4' wide. Roof of drift.	0.28	0.64	\$10.29

No. DATE-1936 SA No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
43 July 24	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 25' East of West face of Vein No. 2. 3½ ft. wide. Roof of drift.	0.22	1.58	\$ 8.91
44 July 24	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 40' East of Vein No. 2. 5' wide. Roof sample.	0.18	0.84	\$ 7.02
45 July 24	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 73' East of above face of Vein No. 2. 4' wide.	0.15	1.67	\$ 5.84
46 July 24	JUNIATA LOWER TUNNEL, VEIN No. 2, MARTINEZ CLAIM. 85' East of above face of Vein No. 2. 5' wide. Near chute and raise.	0.24	1.12	\$ 9.26
78 Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 2, Stope fines from #2 vein about 170' East from West face of Vein No. 2.	0.12	1.30	\$ 5.21
95 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 100 ft. from SA 6. 6' wide, 2' of andesite and quartz; Stringers 4' of quartz. Vein not fully exposed in F.W.	0.12	1.0	\$ 4.97
96 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide, Southwest side stope, 12' from SA 95; 6 ft. from roof, F.W. Quartz not fully exposed. 112' from Sample SA 6.	0.10	0.62	\$ 3.98
97 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. Roof sample. 5 ft. wide. 115 ft. from SA 6	0.34	1.26	\$12.87
98 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide on F.W. Side. 130' from SA 6. H.W. side is andesite.	0.32	1.40	\$12.28
99 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 6' wide, 142' from SA 6.	0.34	1.65	\$13.33
100 Aug. 6	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide. H.W. is andesite. 160' from SA 6. 3 cuts staggered to get sample. Vein not fully exposed in F.W.	0.10	0.50	\$ 5.89
101 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. 6' wide. 10' northeast of SA 100. 170' from SA 6. 6' up from roof.	0.60	2.52	\$22.94
102 Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 2. Northeast side of first X-cut connecting Veins #2 and #3. Drifts. 8' wide, 182' from SA 6.	0.19	1.20	\$ 7.57
125 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 2. Northeast end of stope on #2 vein, 20' up, 2½' wide, F.W.	0.15	0.85	\$ 5.90
126 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide including 2' horse waste. NE side. 20' up H.W.	0.07	4.70	\$ 6.07

No.	DATE-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
127	Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 2. Sample of coarse pieces of quartz in broken ore in stope on #2 Vein near SA 125.	0.04	0.8	\$ 2.02
128	Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 2. #3 Vein, 8' S.W. of SW 74 on X fault. 3' wide F.W. side.	0.06	0.75	\$ 2.68
131	Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide #2 Vein, 60 ft. northeast of SA 6.	—	—	\$ 3.36
132	Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide, #2 Vein, 30' Northeast of SA 6.	—	—	\$ 6.25
133	Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide, 15' above SA 46 in stope. #2 Vein.	0.18	0.72	\$ 6.76
134	Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 2. 5' wide, 20 ft. up in stope. 32' Northeast of SA 44.	0.20	0.90	\$ 7.58
135	Aug. 11	JUNIATA LOWER TUNNEL, VEIN No. 2. 4' wide, 15' up, 16' northeast of SA 44.	0.16	0.46	\$ 5.89
140	Aug. 12	JUNIATA LOWER TUNNEL, VEIN No. 2. 12' up raise northeast side. 6' wide.	0.19	0.91	\$ 7.17
9	July 20	JUNIATA LOWER TUNNEL, VEIN No. 3. Same as in No. 8 (page 3) except from H.W. 11' to 14'. Width of sample, 3'.	0.13	0.37	\$ 4.73
10	July 20	JUNIATA LOWER TUNNEL, VEIN No. 3. Same as in No. 9 except from H.W. 2' to 6'. 4' wide. Mats. and 4 quartz stringers.	trace	0.10	\$ 0.06
11	July 20	JUNIATA LOWER TUNNEL, VEIN No. 3. Same as in No. 10 except 27' up raise southwest side. 5' cut.	0.06	0.15	\$ 1.94
12	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same as in No. 11 but 41' up raise southwest side. 4' wide.	0.02	0.14	\$ 0.81
13	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 12. 3 ft. quartz on F.W., 70' up. 0'-3' from Raise F.W.	0.20	0.60	\$ 7.46
14	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 13. 3 1/2' wide. 70 ft. up raise. 3'-6 1/2'. Andesitic vein material.	0.01	0.10	\$ 0.43
15	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 14. 94 ft. up. 4' wide.	0.09	none	\$ 3.15
16	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 15. 115' up. 4' wide.	0.46	1.06	\$16.92

No.	DATE-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
17	July 21	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 16. 135' up raise. 4' wide. 25' southwest in drift at top of southeast raise.	0.28	1.04	\$10.60
18	July 22	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 17. Upper level top at raise. Roof sample. 3' wide. 5' southwest from southwest side at raise. 20' northeast of SA 17.	0.16	0.32	\$ 5.55
19	July 22	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 18. 18' northeast of SA 18. 3' wide roof cut.	0.52	0.92	\$11.91
20	July 22	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as in No. 19. 5' northeast of SA 19. 3' up another small raise. 8 1/2' wide, S.W. side	0.26	0.62	\$ 9.58
68	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 20' East of west face where samples SA 7, 8, 9 & 10 were taken. 5' wide in roof.	0.10	0.25	\$ 3.66
69	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 5' wide. Roof of drift. F.W. side. 30' east of face of Vein No. 3.	0.09	0.66	\$ 3.57
70	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. at H.W. portion of vein. Mixed andesite, clay and quartz adjacent to fault. 4' wide.	0.01	0.20	\$ 0.50
71	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 45' east of face of Vein No. 3. 2 cuts 2' and 3'. 5' wide.	0.055	0.15	\$ 2.01
72	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 2 1/2' wide on F.W. side, which is waste rock. 55' east of face of Vein No. 3.	0.045	0.15	\$ 1.66
73	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as No. 72 but in H.W. portion. 4' wide, H.W. side, F.W. is waste.	0.24	0.76	\$ 9.89
74	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Cut 3' wide. 75' east of face of Vein No. 3. F.W. side	0.12	0.28	\$ 4.58
75	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Same place as No. 74, but H.W. portion. 3' wide on H.W.	0.11	0.50	\$ 4.24
76	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 115' east of above face, 4' wide.	0.06	0.22	\$ 2.27
77	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. Stopo fines from #3 vein about 90' east from west face of Vein No. 3.	0.11	0.29	\$ 4.03

No. SA	DATE-1936 Mo & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
79	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 6' wide, Roof of drift. No. 3 Vein, 185' east of face, where Samples SA 7 and 8 were cut at main x-cut.	0.19	0.61	\$ 7.04
80	Aug. 3	JUNIATA LOWER TUNNEL, VEIN No. 3. 5' wide in roof of drift. 145' east of face of vein No. 3	0.12	1.10	\$ 5.05
81	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 6' wide, 155' east of face of Vein No. 3	0.14	1.60	\$ 6.23
82	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide cut at P.W. at 165' east of face of vein #3.	0.04	0.24	\$ 1.58
83	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3, same place as No. 82 but in H.W., 4' wide, andesite and quartz, to H.W. opposite 24' S X-cut.	0.07	0.33	\$ 2.70
84	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 175' East of face of Vein No. 3. 5 ft. wide.	0.06	0.34	\$ 2.36
85	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 185' east of face of Vein No. 3. 2' wide. Vein not fully exposed. H.W. side of fault.	0.015	0.25	\$ 0.72
86	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 18" wide, H.W. side. 195' east of face of Vein No. 3. No quartz in roof or in bottom at fault.	0.07	0.30	\$ 3.17
87	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, 205' east of face of Vein No. 3. Mixed quartz and andesite. Vein partly exposed in bottom of drift. H.W. side.	trace	0.12	\$ 0.09
88	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, 215' east of face of vein No. 3. Nearly all quartz to bottom of drift on H.W.	0.04	0.36	\$ 1.68
89	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 225' east of above face. 4' wide.	0.12	1.0	\$ 4.97
90	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 3' wide, granular quartz, 235' east of face of vein No. 3. P. W. portion of vein.	0.03	0.25	\$ 1.24
91	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, H.W. portion of vein. H.W. hard quartz.	0.02	0.20	\$ 0.85
92	Aug. 4	JUNIATA LOWER TUNNEL, VEIN No. 3. 4' wide, 245' east from face of Vein No. 3. Andesite and quartz.	0.01	0.40	\$ 0.66
93	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 3. 2 1/2' wide, 255 ft. east from face of Vein No. 3. Quartz in H.W. not fully exposed.	0.16	0.40	\$ 6.29
94	Aug. 5	JUNIATA LOWER TUNNEL, VEIN No. 3. Opposite SA 83 in H.W. X-cut. 6' in, 2' wide, 30' from West X-cut. H.W. side of #3 vein.	0.03	0.15	\$ 1.17

No. DATE-1936 SA No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
121 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. H.W.X-cut. 2' wide, 15' in H.W.X-cut. Southwest side opposite SA 85	0.18	1.60	\$ 7.53
122 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. 12" wide. 24' in. Face of H.W.X-cut, 30' from west X-cut.	0.24	1.56	\$ 9.60
123 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. Broken ore left in stope. 3' wide. 20' above #3 level, 10' above SA 76.	0.11	0.10	\$ 3.93
124 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. 6' wide, 5' above SA 76, 10' above roof of #3 Vein drift.	0.10	0.90	\$ 4.19
129 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. 3' north-east of SA 76, H.W. side, X-fault, 6' wide.	0.22	0.4	\$ 8.01
130 Aug. 10	JUNIATA LOWER TUNNEL, VEIN No. 3. last X-cut from Raise 153. On #3 Vein, 5' wide, 6' South from #2 Drift.	—	—	\$ 0.37
244 Aug. 26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 29'-30' over stope in middle level from 153.	0.10	0.10	\$ 3.58
245 Aug. 26	JUNIATA MIDDLE TUNNEL LEVEL. 3' wide, 20'-23' from 153 Drift.	trace	0.30	\$ 0.23
246 Aug. 26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 15'-27' from 153 Drift.	trace	0.38	\$ 0.29
247 Aug. 26	JUNIATA MIDDLE TUNNEL LEVEL. 2' wide, 8'-10' from 153 Dr.	trace	trace	none
248 Aug. 26	JUNIATA MIDDLE TUNNEL LEVEL. 4' wide, Start of 153 Drift.	0.56	0.44	\$12.94
249 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL. 6' wide, 45' West from start of 153 drift, on fault, F.W. side.	trace	0.03	\$ 0.02
250 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL. 4' wide, West side of start of 171 X-cut. H.W. side of fault.	0.22	0.38	\$ 7.99
251 Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL. 2½' wide, Brecciated quartz in fault, at first ore pass. 36' from #171 X-cut.	0.01	0.40	\$ 0.66
261 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, 3'-8' East side of 155 X-cut to #1 Vein.	0.01	0.40	\$ 0.66
262 Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide. 8'-13' to F.W.	trace	0.40	\$ 0.31
266 Aug. 29	JUNIATA MIDDLE TUNNEL LEVEL. 5' wide, West face of X-cut, 32' west of 264.	0.03	0.50	\$ 1.44

No. SA	DATE-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
267	Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, 5' wide, West face of X-cut, 30' west of 264.	0.015	0.50	\$ 0.92
263	Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN NO. 2. 2½' wide. #2 Vein. Start of 161 drift from 155 X-cut.	0.12	0.43	\$ 4.57
264	Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 2. 3½' wide, 18' west of 263	0.02	0.53	\$ 1.15
265	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN NO. 2. 5' wide, West face of 161 Drift, F.W. side, 34' west of 164	0.16	0.44	\$ 5.94
262	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL; VEIN NO. 3. 3½' wide, roof sample. 100' from 171 X-cut.	0.38	0.44	\$13.64
263	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN NO. 3. 4½' wide, roof sample. 112' from X-cut.	0.26	1.14	\$ 9.96
264	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN NO. 3. 5' wide, floor sample, 133' from 171 X-cut.	0.08	0.84	\$ 3.45
265	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN NO. 3. 5' wide, Floor sample, 146' in.	0.04	0.10	\$ 1.48
266	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 4' wide, floor sample. 163' in.	0.01	0.30	\$ 0.58
267	Aug. 27	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 2' wide, roof sample, 168' in.	0.11	0.90	\$ 4.54
268	Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 2½' wide, F.W. Side, hard quartz, 173' in.	0.18	none	\$ 6.30
269	Aug. 28	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 4' wide, roof sample, 198' in.	0.08	0.44	\$ 3.14
260	Aug. 29	JUNIATA MIDDLE TUNNEL LEVEL, VEIN No. 3. 3' wide, roof sample, 213' in, 153 drift and 165 X-Cut.	0.18	0.64	\$ 6.79
284	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 2½' wide, 12' East of SA 17	0.20	0.43	\$ 7.37
285	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 2½' wide, 5' east of 138' Raise. Middle Level	0.14	0.76	\$ 5.49
286	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 6' wide, 6' down from top of 138' Raise, West side. Near breast of Vein No. 3.	0.18	0.42	\$ 6.62
287	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 3' wide, 27' down Raise, West side.	0.34	0.86	\$12.56
288	Sept. 1	JUNIATA MIDDLE LEVEL, VEIN No. 3. 4' wide, 32' up raise, west side.	0.04	0.76	\$ 1.99

No.	DATE-1936	Location	Au	Ag	Total
SA	No. & Day	Description	Oz.	Oz.	Value
268	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. Raise to 100 foot level. 3 $\frac{1}{2}$ ' wide, West side of Raise, 40 ft. up raise to 100' level	0.17	0.55	\$ 6.57
269	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. 3' wide, West side, 50' up raise to 100' level.	0.56	0.44	\$12.94
270	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. 4' wide, West side, 60' up raise to 100' level.	0.89	1.72	\$32.12
271	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. 3 $\frac{1}{2}$ ' wide, East side on pillar. 70' up raise to 100' level, at bottom of stone cribbing.	0.24	0.48	\$ 8.49
272	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. 4' wide, East side, 82' up raise to 100' level.	1.22	1.73	\$44.07
273	Aug. 29	JUNIATA MIDDLE LEVEL. RAISE TO UPPER LEVEL, VEIN No. 3. 2' wide, East side, 94' up raise to 100' level.	0.67	0.73	\$24.01
225	Aug. 22	JUNIATA RAISE. RIGHT BETWEEN LOWER & INTER-MEDIATE LEVELS, VEIN No. 1. 5' wide, 11' down west side.	0.28	1.52	\$10.87
226	Aug. 22	JUNIATA RAISE. RIGHT BETWEEN LOWER & INTER-MEDIATE LEVELS, VEIN No. 1. 5 $\frac{1}{2}$ ' wide, 21' down same side	0.52	2.68	\$13.28
289	Sept. 1	JUNIATA CLAIM. 16 FOOT SHAFT. 5' wide at bottom of 16' shaft. Top of Vein in Left-hand X-cut Lower Level.	0.02	0.36	\$ 0.99
40	July 24	JUNIATA CLAIM. 53' down Raise with Pipe in it. 4' wide. Southwest side of Raise	0.41	1.27	\$15.53
21	July 23	JUNIATA CLAIM SURFACE. Outcrop Special. 35' Northeast from Southwest end line. 1 out 7' wide, 31' from pipe in raise to surface.	0.30	1.58	\$11.56
22	July 22	JUNIATA CLAIM SURFACE. Same place as in No. SA 21. 18' from pipe in Raise, or 22' north-east of JMM end line. 1 out - 2 $\frac{1}{2}$ ' wide.	0.86	5.32	\$34.90
23	July 22	JUNIATA CLAIM SURFACE. Same place as in No. SA 22. 4' Northeast from pipe in raise, 30" wide.	0.58	1.82	\$21.70
25	July 23	JUNIATA CLAIM SURFACE. 45' N.E. from pipe in raise. 7' wide.	0.28	2.12	\$11.43

No. SA	Date-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
108	Aug. 5	JUNIATA CLAIM SURFACE. Outcrop. 110' north-east from portal of Juniata Lower Tunnel. 4' wide.	0.04	0.06	\$ 1.45
109	Aug. 7	JUNIATA CLAIM SURFACE. 54' East of hub on dump, 21' northeast of SA 108. Outcrop 3'.	0.03	0.20	\$ 1.20
110	Aug. 7	JUNIATA CLAIM SURFACE. 3' wide, 58' south-west of SA 108.	0.05	0.05	\$ 1.78
111	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop, 6' wide, 62' southwest of SA 110.	0.02	0.15	\$ 0.78
112	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop from vein exposed 310 ft. east of SA 109. 2' wide.	0.02	trace	\$ 0.70
113	Aug. 7	JUNIATA CLAIM SURFACE. Outcrop. 6' wide, end of outcrop northeast 232' from portal.	0.005	trace	\$ 0.17
290	Sept. 1	JUNIATA CLAIM SURFACE. Outcrop sample. 6' wide, 5' west of 40' shaft.	trace	0.40	\$ 0.31
291	Sept. 1	JUNIATA CLAIM SURFACE. 3' wide, 25' north-east of 40' shaft. small hole 4'.	0.02	0.40	\$ 1.01
115	Aug. 8	JUNIATA UNDERGROUND. 3' wide over #695. Small stope in H.W., 20' up southwest side. Drift is 18' from #3 Vein.	0.29	2.20	\$11.55
116	Aug. 8	JUNIATA UNDERGROUND. Same place as in #115. 2' wide, Northeast side, 18' up in stope. #694.	0.25	1.05	\$ 9.42
117	Aug. 8	JUNIATA UNDERGROUND. Same place as in #116. 12' in face of drift under stope, 2 1/2' wide. Quartz not fully exposed in F.W.	0.30	1.90	\$11.65
118	Aug. 8	JUNIATA UNDERGROUND. Same place as in #117. 2' wide in roof of X-cut. Start of drift, 15' from middle level. #693.	0.12	0.68	\$ 4.65
119	Aug. 10	JUNIATA UNDERGROUND. #3 VEIN. 50' north-east from West X-cut. 6' wide, in F.W. E-cut Northeast side. Starging 2' in from drift.	0.04	0.30	\$ 1.63
120	Aug. 10	JUNIATA UNDERGROUND. #3 VEIN. 50' north-east from West X-cut. 7' wide, southwest side to edge of drift on #3 Vein Drift.	trace	none	\$ 0.00
281	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 2 1/2' wide, 87' in. Start of south drift left side.	0.06	0.10	\$ 2.18
282	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 3' wide, start of north drift, 92' from raise.	0.02	0.10	\$ 0.78
283	Aug. 31	JUNIATA UPPER TUNNEL LEVEL. 4 1/2' wide, face of north drift, 100 ft. in from raise.	0.03	0.40	\$ 1.36

No. Date-1936 SA No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
274 Aug. 29	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 100' level. Face 4½' wide, 132½' from west raise from Middle Level.	0.19	0.50	\$ 5.89
275 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 4½' wide, south vein, 92' west of east end.	0.44	1.00	\$16.17
276 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 5' wide, 97' in south drift, 6' west of SA 275	0.22	0.25	\$ 7.89
277 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 3½' wide, 105 ft. in, 9' west of SA 276.	0.50	0.90	\$11.19
278 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 4' wide, 5' west of SA 277.	0.20	0.60	\$ 7.46
279 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 3½' wide, 5' west of SA 278.	0.29	0.70	\$10.69
280 Aug. 31	JUNIATA UPPER TUNNEL LEVEL, VEIN No. 3. 4' wide, 5' west of SA 279	0.25	0.40	\$ 9.06
47 July 25	JUNIATA VEIN No. 3. In last westerly raise and chute between Juniata Upper and Middle tunnels. Northeast of 135 raise. 45' up raise from Middle Tunnel Level. 3' wide. Northeast side.	0.40	0.60	\$14.46
48 July 25	JUNIATA VEIN No. 3. In last raise to west between Upper and Middle Tunnel Levels. 25' up on southwest side of raise. 2' wide.	0.16	0.72	\$ 6.15
24 July 22	MARTINEZ CLAIM. 35' southwest from Neidy (57') shaft. 30" wide. Southwest side open out.	0.30	1.10	\$11.56
54 July 25	MARTINEZ CLAIM. 60' southeast to southeast corner of Martinez. Outcrop shaft at end of Martinez claim. 4' wide, 10' down pit. Southwest side.	0.03	none	\$ 1.06
55 July 30	MARTINEZ CLAIM. Southwest end, 95' from 42 Center Line Stake. 2½' wide. Northeast side of open pit.	0.04	0.20	\$ 1.55
56 July 31	MARTINEZ CLAIM. Small stope from surface near southwest end, northeast side. 2½' wide, 16' down and 6' northeast in drift.	0.02	0.20	\$ 0.55
57 July 31	MARTINEZ CLAIM. Small stope from surface near southwest end. 3' wide, Northeast side. 10' down.	0.01	none	\$ 0.35
58 July 31	MARTINEZ CLAIM. Small pit on side line of Martinez. 13' wide, northeast side, 6' down.	0.01	none	\$ 0.35
59 July 31	MARTINEZ CLAIM. OUTCROP, 28' wide, 20' east of small stope from surface. 2½' wide.	Trace	Trace	\$ 0.00

No. SA	Date-1936 No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
60	July 31	MARTINEZ CLAIM. SAME PLACE AS SA 54 near blowout near Martinez Fraction. 4' wide, 5' down, northeast side of shaft.	0.00	trace	\$ 0.00
60	July 23	MARTINEZ CLAIM. NEIDY SHAFT. Bottom of Neidy Shaft. Northeast side. 5' wide.	0.40	\$ 0.74	\$14.74
61	July 23	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 50. 55' down shaft on southwest side. 5' wide.	0.13	0.60	\$ 5.01
62	July 23	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 51. 2 $\frac{1}{2}$ ' wide in Neidy shaft, 32' down. Southwest side.	0.36	0.30	\$13.22
63	July 23	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 32. In northeast drift, 35' down in shaft. 2' wide, 12' in drift from shaft.	0.72	1.76	\$26.56
64	July 24	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 35. 35' down in northeast drift. 3' wide, 25' in drift.	0.34	1.26	\$12.67
65	July 24	MARTINEZ CLAIM. NEIDY SHAFT. Northeast drift. 55' down shaft in northeast drift. 3' wide, 43' in drift.	0.20	0.60	\$ 7.46
66	July 24	MARTINEZ CLAIM. NEIDY SHAFT. 55' down shaft in northeast drift. 2 $\frac{1}{2}$ ' wide, 68' in drift.	0.21	0.71	\$ 7.90
67	July 24	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 36, but 95' in, 4' wide.	0.02	0.10	\$ 0.78
68	July 24	MARTINEZ CLAIM. NEIDY SHAFT. Same place as in No. SA 37. 2' wide, 6' in the 10' southwest drift.	0.16	0.52	\$ 6.00
69	July 24	MARTINEZ CLAIM. NEIDY SHAFT. 8' wide, 9' down southwest side of Neidy shaft.	0.25	1.15	\$ 9.64
61	July 31	MARTINEZ CLAIM. NEIDY SHAFT. 10' northeast from SA 54. 5' down, 4' wide, 2 cuts 24" wide. Northeast side.	0.005	0.10	\$ 0.23
62	July 31	MARTINEZ CLAIM. NEIDY SHAFT 57' DEEP. 9' down, northeast side, 5' wide, 2 cuts 18" wide.	0.31	0.99	\$11.46
63	July 31	MARTINEZ CLAIM. NEIDY SHAFT. 2' wide, 21' down. Face of southwest drift, 5' southwest of SA 53, 12' in.	0.43	1.30	\$16.20
64	July 31	MARTINEZ CLAIM. NEIDY SHAFT. 21' down, 2 $\frac{1}{2}$ ' wide, northeast side opposite small drift.	0.52	1.96	\$19.47
65	July 31	MARTINEZ CLAIM. NEIDY SHAFT. 3 Sacks top of Cribbed Raizes in Drift northeast of Neidy Shaft. Ore filling.	0.12	0.53	\$ 4.57

No. SA	Date-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
66	July 31	MARTINEZ CLAIM. NEIDY SHAFT. Southwest side shaft, 5' wide, 40' down shaft.	0.75	3.75	\$28.66
67	July 31	MARTINEZ CLAIM. NEIDY SHAFT. Northeast side Neidy Shaft. Sample of cribbed wall of large pieces near bottom of shaft.	0.22	0.51	\$ 8.02
227	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 2½' wide in drift East from 58' shaft. West of SA 34. 19' in.	0.76	2.46	\$29.19
228	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 3½' wide, East of SA 32. 31' in.	0.40	1.44	\$15.11
229	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 4' wide, East drift of 59' shaft. 37' in.	0.23	1.32	\$10.82
230	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 2½' wide, 10' West of SA 36. 56' in East.	0.20	0.72	\$ 7.55
231	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 3½' wide, 10' West of SA 37. 75' in.	0.13	0.67	\$ 5.07
232	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 2½' wide, 5' west of SA 37. 82' in.	0.11	0.30	\$ 4.08
233	Aug. 24	MARTINEZ CLAIM. NEIDY SHAFT. 5' wide, H.W. side of stope. 90' in.	0.03	0.70	\$ 1.59
26	July 23	MARTINEZ CLAIM SURFACE OUTCROP. NORTHWEST VEIN. 186' southwest from Neidy Shaft. 5' wide.	trace	1.3	\$ 1.01
27	July 23	MARTINEZ CLAIM SURFACE OUTCROP. Same place as in No. 26. 212' from Neidy Shaft. At end of outcrop near small X-cut. 6' wide. Also Northwest vein.	trace	0.2	\$ 0.15
28	July 23	MARTINEZ CLAIM SURFACE OUTCROP. Same place as in No. 27. 2 cuts 5' wide, 1, 3'; 1, 2'. 146' from Neidy Shaft. Also Northwest vein.	trace	0.02	\$ 0.15
29	July 23	MARTINEZ CLAIM. SURFACE OUTCROP. Same place as in No. 28. 32' southwest from Neidy shaft. Northwest vein. 1 cut 3' wide. Outcrop sample.	0.02	0.02	\$ 0.72
48	July 25	MARTINEZ CLAIM. VERTICAL SHAFT. Cross Vein 18" wide. Not on Vein No. 3 but in H.W. Bottom of 69' shaft. 67' down. Southwest side of shaft, 18" wide.	0.02	0.20	\$ 0.35
50	July 25	MARTINEZ CLAIM. VERTICAL SHAFT. 3' wide. 3' in roof of X-cut 21' down. Running southwest. Not on Vein No. 3 but in H.W.	0.03	0.50	\$ 1.44
51	July 25	MARTINEZ CLAIM. VERTICAL SHAFT. Not on Vein No. 3. but in H.W. 3' wide. F.W. side of vein. 3 cuts to end of drift 17' in.	0.02	0.26	\$ 0.90

No. SA	Date-1936 Mo. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
52	July 25	MARTINEZ CLAIM. VERTICAL SHAFT. Not on Vein No. 3 but in H.W. 6' wide, southwest side of X-cut. West X-cut 21' down, 14' in.	0.40	1.60	\$15.25
53	July 25	MARTINEZ CLAIM. VERTICAL SHAFT. Not on Vein No. 3 but in H.W. 4' wide. 21' down east shaft. Small X-cut on vein.	0.09	0.40	\$ 3.46
223	Aug. 22	MARTINEZ CLAIM. VERTICAL SHAFT. Chk. Sample on SA 52. 5' wide, east side of west X-cut 10'-15'. 69 ft. shaft.	0.23	0.10	\$ 3.62
224	Aug. 22	MARTINEZ CLAIM. VERTICAL SHAFT. 2 1/2' wide, 69' shaft. Opposite West X-cut in shaft. F.W. of vein in drift.	0.02	0.50	\$ 0.35
4	July 18	MEDICINE MAN EXT. #1. Location Hole. 4' out. 2 step cuts 12", 36" - 4' width. Taken at 12002 Northeast side.	0.23	0.37	\$ 8.28
5	July 18	MEDICINE MAN EXT. #1. Location Hole. 2' wide. 4' from SA 4. Taken at 12002. South-west side.	0.45	0.45	\$16.04
301	Sept. 3	NEW ESMERALDA DISTRICT. ANN VEIN. Stope from Goldfield Shaft depth 20'. South end stope, H.W. Side, 38' south of shaft. 4' wide.	0.08	0.50	\$ 3.19
302	Sept. 2	NEW ESMERALDA DISTRICT. ANN VEIN. 3 1/2' wide, 50' south of shaft.	0.30	3.10	\$53.89
303	Sept. 2	NEW ESMERALDA DISTRICT. ANN VEIN. 15' deep, 20' south of shaft. Width 3.5'.	1.06	3.14	\$39.52
304	Sept. 2	NEW ESMERALDA DISTRICT. ANN VEIN. 20' deep, 25' North of shaft. Width 4'.	0.48	1.40	\$17.88
292	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 5' wide, 180' in at east X-cut face, 5' in.	0.18	0.62	\$ 6.73
293	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 5' wide, East side of X-cut on vein. 180' in from portal. West of 292.	0.04	0.36	\$ 1.68
294	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 4 1/2' wide, 20' south of 293 in drift. Vein is 180' in from portal.	0.78	3.22	\$29.01
295	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3 1/2' wide, South X-cut off vein 180' in from portal. 18' south of 1st X-cut.	0.16	0.34	\$ 6.25
296	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3 1/2' wide, 10' north of 2nd X-cut. Vein is 180' in from portal.	0.16	0.42	\$ 6.62
297	Sept. 2	NEW ESMERALDA DISTRICT. HANCOCK TUNNEL. CLARA CLAIM. 3' wide on cross slip at south face of drift. Vein is 180' in from portal	trace	0.60	\$ 0.45

No.	Date-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
298	Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL CLARA CLAIM. 6' wide, south end of stope on surface under 502.	0.16	0.74	\$ 6.18
299	Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL CLARA CLAIM. 4 1/2' wide. North end of stope surface under 509	0.16	0.76	\$ 6.19
300	Sept. 2	NEW ESMERALDA DISTRICT. ABOVE HANCOCK TUNNEL CLARA CLAIM. 5' wide, south of stope under 568.	0.34	1.26	\$12.67
312	Sept. 12	NORTHERN BELL CLAIM. 70' shaft from stope. 65' down, 10' up stope, 30' in southwest end. 2' wide.	—	—	\$ —
313	Sept. 12	NORTHERN BELL CLAIM. 15' in southwest end of shaft described in 312. 3' wide.	—	—	\$ —
314	Sept. 12	NORTHERN BELL CLAIM. 20' northeast from shaft at fault, 16" wide. Same shaft described in 313.	—	—	\$ —
315	Sept. 12	NORTHERN BELL CLAIM. 10' from shaft, 2' wide, Northeast end. Same shaft described in 314.	—	—	\$ —
316	Sept. 12	NORTHERN BELL CLAIM. 2' from bottom of shaft, southwest side near fault, across 2". Same shaft described in 315.	—	—	\$ —
145	Aug. 13	PHILADELPHIA TUNNEL. Northeast face, 6' wide, F.W.Vein. 180' from main X-cut.	0.11	0.1	\$ 3.93
146	Aug. 13	PHILADELPHIA TUNNEL. 3' wide. Northeast side stope. 141' in.	0.58	1.4	\$14.58
147	Aug. 13	PHILADELPHIA TUNNEL. 3' wide. Southwest side of stope. 118' in from X-cut.	0.09	4.9	\$ 6.42
148	Aug. 13	PHILADELPHIA TUNNEL. 3' wide roof sample. 75' in.	0.29	1.1	\$11.00
149	Aug. 13	PHILADELPHIA TUNNEL. 3' wide roof sample. 52' in.	0.14	0.66	\$ 5.41
150	Aug. 13	PHILADELPHIA TUNNEL. 3' wide floor sample. 36' in.	0.07	0.05	\$ 2.84
151	Aug. 13	PHILADELPHIA TUNNEL. Same place. 4' wide. Southwest X-cut. 5' in roof.	0.05	0.4	\$ 1.36
152	Aug. 13	PHILADELPHIA TUNNEL. 54' in Southwest Drift. 5' wide. Roof sample.	0.09	0.5	\$ 3.54
153	Aug. 13	PHILADELPHIA TUNNEL. 5' wide. H.W. Floor sample. Edge of Stope. 50' in.	0.60	1.2	\$21.92
154	Aug. 13	PHILADELPHIA TUNNEL. 3' wide. Roof sample. 72' in.	0.28	1.3	\$10.81

No. 1936 -Date SA No. & Day	Location Remarks	Au Oz.	Ag Oz.	Total Value
155 Aug. 13	PHILADELPHIA TUNNEL. 3' wide roof sample. 15' up in small stope over windlass. 122' in.	0.19	1.0	\$ 7.07
156 Aug. 13	PHILADELPHIA TUNNEL. 3' wide. Over #6606. 15' up southwest end of stope. 710' in from X-cut.	0.19	1.6	\$ 7.88
157 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 5' in, 18" wide. Roof sample.	0.01	none	\$ 0.35
158 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. Roof sample. 20' in, 2 1/2" wide.	0.05	0.36	\$ 1.58
159 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. Roof sample. 35' in. 2' wide.	0.005	none	\$ 0.18
160 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 3' wide. 50' west end of stope & tunnel.	trace	0.12	\$ 0.09
161 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. East end of stope. 2' wide, 85' from portal 10' from surface.	0.12	0.28	\$ 4.42
162 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 2 1/2" wide, 2nd stope. East end, 115' from portal. 10' from surface.	0.16	0.56	\$ 6.03
163 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 2' wide, 5' down small stope. East end. 195' from portal.	0.34	0.90	\$12.59
164 Aug. 14	RUSSELL CLAIM. UPPER YELLOW JACKET TUNNEL. 1 cut East side 3' and 1 cut West side 3 1/2" in small shaft, 10' down, 231' from portal.	0.08	0.30	\$ 3.03
318 Sept. 12	SILVER LINING MINE. 25' North from G.C. stope. 4' wide, H.W. side of vein in fault crossing.	0.24	1.08	\$ 9.23
319 Sept. 17	SILVER LINING MINE. 4' wide from P.W. over #6926.	0.13	0.27	\$ 4.76
320 Sept. 17	SILVER LINING MINE. 1st X-cut northeast from stope. Opposite 6927. 3' wide.	0.11	0.50	\$ 4.24
321 Sept. 17	SILVER LINING MINE. 4 1/2" wide. Opposite 6926. 1st X-cut northeast from stope. Northeast side.	0.06	0.34	\$ 2.36
322 Sept. 17	SILVER LINING MINE. 2nd X-cut to northeast. 5' wide, 2 1/2" in from drift. Northeast side.	0.24	0.36	\$ 8.67
323 Sept. 17	SILVER LINING MINE. 7 1/2-11 1/2" toward H.W. 4' wide.	0.08	0.12	\$ 2.89
310 Sept. 12	SOUTH REPUBLIC CLAIM. First Pit Northeast of shaft at southwest end. 4' wide at southwest side.	—	—	—

No.	Date-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
511	Sept. 12	SOUTH REPUBLIC CLAIM. 2nd pit from shaft. Northeast side. Width 3.5'	—	—	\$ —
305	Sept. 3	SOUTH REPUBLIC OPEN CUT. South end of south cut. 1.5' wide.	0.02	0.20	\$ 0.85
306	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 3' at north end of south cut.	0.04	0.40	\$ 1.71
307	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 4.5' at south end of north cut.	0.02	0.40	\$ 1.01
308	Sept. 3	SOUTH REPUBLIC OPEN CUT. Width 2.5' at north end of north cut.	0.05	0.55	\$ 2.02
309	Sept. 3	SOUTH REPUBLIC SHAFT (Near south end line). F.W. on north side of 40' shaft. 3' wide.	0.12	0.50	\$ 4.59
212	Aug. 20	WIDE WEST, LAST CHANCE. 4' wide. East of SA 210 on pillar of ore above Upper Level.	0.18	5.22	\$10.32
213	Aug. 20	WIDE WEST, LAST CHANCE. 3' wide at end of pillar between 1" and 2" opening to upper level. Upper vein #3.	0.82	7.0	\$34.09
214	Aug. 20	WIDE WEST, LAST CHANCE. 2½' wide, 7' from East Raise on Upper Level, at 3rd fault.	0.07	1.73	\$ 3.78
215	Aug. 20	WIDE WEST, LAST CHANCE. 4' wide, 30' in.	0.10	1.70	\$ 4.81
216	Aug. 20	WIDE WEST, LAST CHANCE. 3' wide, 48' in. Upper level.	0.56	2.44	\$14.48
217	Aug. 20	WIDE WEST, LAST CHANCE. 3' wide, 80' in. Near chute at west end of Upper Level.	0.03	0.40	\$ 1.36
218	Aug. 21	WIDE WEST, LAST CHANCE. F.W. Stope. 2½' wide, west end near small winze.	0.01	0.30	\$ 0.58
219	Aug. 21	WIDE WEST, LAST CHANCE. 3½' wide, 25' east of SA 218; Bolham Stope.	0.01	0.40	\$ 0.66
220	Aug. 21	WIDE WEST, LAST CHANCE. 2' wide, 20' west of Middle Winze to stope.	0.02	0.50	\$ 1.09
221	Aug. 21	WIDE WEST, LAST CHANCE. 3' wide, bottom of east winze; Fault vertical vein & flat vein.	0.04	0.60	\$ 1.86
183	Aug. 17	WIDE WEST, JOHNSON STOPE. 2' wide, 5' west of fault across Upper Drift.	0.015	0.52	\$ 0.77
184	Aug. 17	WIDE WEST, JOHNSON STOPE. 3' wide, 20' from drift.	0.29	3.51	\$12.40
185	Aug. 17	WIDE WEST, JOHNSON STOPE. 2' wide, Pillar in stope, 15' above 184.	0.01	0.19	\$ 0.47
186	Aug. 18	WIDE WEST, JOHNSON STOPE. 3' wide. 15' east of SA 185. Small drift in stope.	0.005	0.10	\$ 0.23

No. 1936	Date-1936	Location	Au	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
187	Aug. 18	WIDE WEST, JOHNSON STOPE. 2½" wide. Roof sample. Start of Upper drift above Johnson stope. #3 Vein.	0.04	0.78	\$ 1.69
188	Aug. 18	WIDE WEST, JOHNSON STOPE. 2" wide. 20" in toward stope.	0.01	0.59	\$ 0.60
189	Aug. 18	WIDE WEST, JOHNSON STOPE. 18" wide. 35" in. #3 Vein.	trace	0.20	\$ 0.12
190	Aug. 18	WIDE WEST, JOHNSON STOPE. 2½" wide, 5" from face. 45" in.	trace	0.10	\$ 0.06
191	Aug. 18	WIDE WEST, JOHNSON STOPE. 2½" wide. East stope on #2 Vein. 5" in from portal.	0.025	0.78	\$ 1.57
192	Aug. 18	WIDE WEST, JOHNSON STOPE. 25" in. 2" wide.	0.01	0.49	\$ 0.66
193	Aug. 18	WIDE WEST, JOHNSON STOPE. 45" in. 4" wide. End of stope.	none	trace	none
194	Aug. 18	WIDE WEST, JOHNSON STOPE. 2½" wide, #1 vein. Bolsonet incline, start of stope.	0.065	0.54	\$ 2.61
195	Aug. 18	WIDE WEST, JOHNSON STOPE. 2" wide, 12" up in roof of stope.	0.40	3.90	\$16.51
196	Aug. 14	WIDE WEST LOWER TUNNEL. 2½" wide. West side of raise connecting with upper tunnel. 300' from portal. P. W. side of tunnel.	0.02	2.00	\$ 2.24
197	Aug. 14	WIDE WEST LOWER TUNNEL. 320" in, 3" wide in roof special.	0.02	0.70	\$ 1.24
197	Aug. 14	WIDE WEST LOWER TUNNEL. 338" in, 4" wide at end of vein.	0.02	0.66	\$ 1.21
198	Aug. 14	WIDE WEST LOWER TUNNEL. 565" in H.W. side, Cross Vein 2" wide.	0.02	0.10	\$ 0.78
199	Aug. 14	WIDE WEST LOWER TUNNEL. 4" wide, 740" from portal, 30" down winze.	0.03	0.85	\$ 1.70
203	Aug. 19	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 18" wide, 10" in X-out from level; perpendicular vein.	0.035	0.17	\$ 1.52
204	Aug. 19	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 2" wide, bottom of vein, near floor. 10" from vent pipe on Middle level.	0.035	0.17	\$ 1.52
205	Aug. 19	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3 cuts 18" each, 6", 10", and 16" from small vent.	0.03	0.07	\$ 1.09
206	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3" wide West side of lower vein in stope. 25" from middle level.	0.22	4.20	\$10.95

No.	Date-1936	Location	Am	Ag	Total
SA	No. & Day	Remarks	Oz.	Oz.	Value
207	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 2' wide, 45' up. Past first fault.	0.96	15.64	\$ 44.10
208	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 60' up. 2' wide. Past second fault.	0.54	11.065	\$ 27.42
209	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 6' wide with 12" quarts roof and 12" floor. Upper vein top of chute at end of Upper level.	0.08	0.90	\$ 2.49
210	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3' wide, 25' above 209.	0.03	1.13	\$ 1.92
211	Aug. 20	WIDE WEST, LAST CHANCE, MIDDLE LEVEL. 3½' wide, 15' east and 10' above SA 210. Top of pillar	0.82	3.48	\$31.36
175	Aug. 15	WIDE WEST, UPPER TUNNEL. Top of small shaft connection 2 levels. 12' above SA 165. 3' wide. West end of drift 300' in.	0.04	1.36	\$ 2.44
176	Aug. 15	WIDE WEST, UPPER TUNNEL. 3' wide, 20' east of SA 175. Drift on Upper Level.	trace	1.0	\$ 0.77
177	Aug. 15	WIDE WEST, UPPER TUNNEL. 3½' wide, 40' east of #165.	0.005	0.40	\$ 0.49
178	Aug. 15	WIDE WEST, UPPER TUNNEL. Flat vein 18" wide, 50' past ore pass in right-hand X-cut. 150' from M X-cut tunnel.	0.02	0.20	\$ 0.85
179	Aug. 15	WIDE WEST, UPPER TUNNEL. 220' in Lower Tunnel. 25' in F.W. X-cut. 3½' wide.	0.02	0.40	\$ 1.01
181	Aug. 17	YELLOW JACKET LOWER TUNNEL. 18" wide. 15' back from face of drift.	trace	0.20	\$ 0.12
182	Aug. 17	YELLOW JACKET LOWER TUNNEL. 6" wide. 10' in East side X-cut. 30' back from face.	trace	trace	none

CHEMICAL & SUPPLY INVENTORY

ASSAY OFFICE; 9/21/39

98 - 20g. Crucibles
112 - 15g. Crucibles
100 - Scorifiers
100 - lbs. Bone Ash
100 - lbs. Litharge
100 - lbs. Borax Glass
10 - lbs. Hematite
25 - lbs. Fire Clay
1 - New Muffle
1 - Muffle Door
Small amount Nitre
Small amount Flour
1 - Pulp balance
1 - Beam balance
1 - set mg. wts.
1 - lb. scales
5 - gals. Gasoline, white
1 - Jaw Crusher
1 - Pulverizer
1 - Buck board
1 - Pair Asbestos Gloves
1 - Callins Assay Furnace
1 - Gasoline tank
1 - Air pump (hand)
1 - Various pans
1 - Set various Screens
1 - Ball String
1 - Cupel Tongs
1 - Scorifier Tongs
2 - Jones Splitters & Pans
1 - Drum White Gas
7 - lbs. Nitric Acid
1 - lb. Sulphuric Acid
2 - Acid Bottles
1 - 100 cc graduate
5 - Assorted Beakers
25 - lbs. Soda
1 - hot plate
1 - Respirator
12 - 100. crucibles
1 - Pair Tongs
1 - pair Cruc. Tongs
1 - Paint Brush
1 - Cam. Hair Brush
1 - Dusting Brush

JUNIATA MINE

OCTOBER, 1939

A S S A Y S

Date	No.	Charge	Inquart	R. E. Marks							
				Wt. Bead Mg.	Wt. Au mg.	Wt. Ag	Oz/T Ag	@ 70¢ Value	Oz/T Ag	@ 35. Value	Total Value
10/7/39	A12	1/2 A.T.	1-2.02	2.40	0.04	0.26	0.52	.36	0.04	\$ 1.40	\$ 1.76
"	D7	"	"	"	"	"	"	"	"	"	"
"	A13	"	1 "	3.02	0.19	0.58	1.18	.81	0.32	11.30	11.52
"	O1	"	"	"	"	"	"	"	"	"	"
"	A14	"	1 "	3.28	0.21	0.82	1.64	1.15	0.36	12.60	12.96
"	O2	"	"	"	"	"	"	"	"	"	"
"	A15	"	1 "	2.67	0.085	0.235	0.47	.35	0.11	3.35	3.96
"	O5	"	"	"	"	"	"	"	"	"	"
"	A16	"	1 "	3.17	0.18	0.74	1.48	1.04	0.30	10.50	10.80
"	O4	"	"	"	"	"	"	"	"	"	"
"	A17	"	1 "	2.48	0.03	0.15	0.30	.21	0.10	3.50	3.60
"	O3	"	"	"	"	"	"	"	"	"	"
"	A18	"	1 "	2.74	0.11	0.38	0.76	.53	0.16	5.60	5.76
"	O7	"	"	"	"	"	"	"	"	"	"
"	A19	"	1 "	3.53	0.23	1.05	2.10	1.47	0.40	14.00	14.40
"	O6	"	"	"	"	"	"	"	"	"	"
"	A20	"	1 "	2.45	0.15	0.18	0.36	.25	0.26	9.10	9.56
"	M3	"	"	"	"	"	"	"	"	"	"
"	A21	"	1 "	2.491	0.06	0.51	0.62	.43	0.08	2.80	2.88
"	M2	"	"	"	"	"	"	"	"	"	"
10/8/39	A22	"	1 "	2.71	0.05	0.56	1.12	.78	0.06	2.10	2.16
"	M1	"	"	"	"	"	"	"	"	"	"
"	A23	"	1 "	2.54	0.09	0.33	0.66	.46	0.14	4.30	4.94
"	M6	"	"	"	"	"	"	"	"	"	"
"	A24	"	1 "	2.51	0.07	0.44	0.88	.62	0.10	3.50	3.60
"	M5	"	"	"	"	"	"	"	"	"	"
"	A25	"	1 "	2.36	0.02	0.22	0.44	.31	trace		0.31
"	M4	"	"	"	"	"	"	"	"	"	"
"	A26	"	1 "	2.36	0.06	0.03	0.06	.04	0.10	3.50	3.60
"	M8	"	"	"	"	"	"	"	"	"	"
"	A27	"	1 "	2.54	0.06	0.23	0.46	.32	0.06	2.10	2.16
"	O9	"	"	"	"	"	"	"	"	"	"
"	A28	"	1 "	2.49	0.14	0.10	0.20	.14	0.22	7.70	7.92
"	O11	"	"	"	"	"	"	"	"	"	"
"	A29	"	1 "	2.34	0.04	0.05	0.10	.07	0.02	0.70	0.72
"	O10	"	"	"	"	"	"	"	"	"	"
"	A30	"	1 "	2.34	0.13	0.46	0.92	.64	0.20	7.00	7.20
"	O12	"	"	"	"	"	"	"	"	"	"
"	A	"	1 "	2.45	0.04	0.29	0.58	.41	0.04	1.40	1.44
"	D1	"	"	"	"	"	"	"	"	"	"
"	B	"	1 "	2.57	0.05	0.40	0.80	.56	0.06	2.10	2.16
"	D2	"	"	"	"	"	"	"	"	"	"
"	C	"	1 "	2.32	0.12	0.58	1.16	.81	0.20	7.00	7.20
"	D3	"	"	"	"	"	"	"	"	"	"
"	D	"	1 "	3.47	0.10	1.25	2.50	1.75	0.16	5.60	5.76
"	D4	"	"	"	"	"	"	"	"	"	"
"	E	"	1 "	2.96	0.135	0.675	1.35	.95	0.33	11.55	11.88
"	D5	"	"	"	"	"	"	"	"	"	"
"	A31	"	1 "	3.27	0.60	0.26	0.52	.36	1.16	40.80	41.76
"	G Dark	"	1 "	2.42	0.05	0.25	0.50	.35	0.06	2.10	2.16
"	D6	"	"	"	"	"	"	"	"	"	"
"	1st flux	"	1 "	2.31	0.03	0.26					
"	2nd flux	"	1 "	2.16	0.02	0.12					

Date	No	Charge	Inquart	Wt. Bead mg.	Wt. Au mg.	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
10/10/39	A52	1 A.T.	1	2.99	0.15	0.70	0.70	\$.49	0.13	\$4.55	\$ 5.25
"	M4	"	2	Proze							
"	A33	"	1								
"	M3	"	1	3.95	0.095	1.715	1.715	1.20	0.075	2.65	3.85
"	M1	"	1								
"	F2	"	1	4.99	0.23	2.57	2.57	1.80	0.26	9.10	10.90
"	M2	"	1								
"	F3	"	1	3.93	0.24	1.55	1.55	1.09	0.22	7.70	8.79
"	M3	"	1								
"	I	"	1	5.32	0.23	2.95	2.95	2.07	0.21	7.35	9.42
"	M5	"	1								
"	F1	"	1	5.13	0.17	2.82	2.82	1.97	0.15	5.25	7.22
"	M6	"	1								
"	J	"	1	3.06	0.025	0.90	0.90	.56	0.005	.18	0.74
"	M7	"	1								
10/11/39	A34	"	1	2.43	0.02	0.27	0.27	.19	trace	--	0.19
"	M7	"	1								
"	A35	"	1	2.48	0.13	0.21	0.21	.15	0.11	3.85	4.00
"	M8	"	1								
"	A36	"	1	3.21	0.075	0.995	0.995	.70	0.055	1.93	2.83
"	M3	"	2	4.82	0.09	2.59	2.59	1.81	0.07	2.45	4.26
"	A38	"	1								
10/13/39	A37	"	1	3.76	0.33	1.41	1.41	.99	0.33	11.56	12.50
"	M1	"	1								
"	A39	"	1	2.81	0.10	0.49	0.49	.34	0.10	3.50	3.99
"	M2	"	1								
"	K1	"	1	3.68	0.14	1.52	1.52	1.08	0.14	4.90	5.96
"	M5	"	1								
"	K2	"	1	5.21	0.42	2.77	2.77	1.94	0.42	14.70	17.47
"	M4	"	1								
"	K3	"	1	3.54	0.09	1.43	1.43	1.00	0.09	5.15	4.58
"	O4	"	1								
"	K4	"	1	3.61	0.16	1.45	1.45	1.00	0.16	5.60	7.03
"	M8	"	1								
"	L1	"	1	3.45	0.12	1.31	1.31	.92	0.12	4.20	5.12
"	O6	"	1								
"	L2	"	1	5.195	0.32	2.855	2.855	2.00	0.32	11.20	13.20
"	O5	"	1								
"	L3	"	1	4.06	0.19	1.85	1.85	1.30	0.19	6.65	7.95
"	M3	"	1								
"	A39	"	1	2.81	0.035	.735	0.735	.51	0.035	1.22	1.73
"	O7	"	1								
"	A40	"	1	2.34	0.07	0.25	0.25	.18	0.07	2.45	2.63
"	O3	"	1								
"	X1	"	1	4.45	0.30	2.13	2.13	1.49	0.30	10.50	11.99
"	O1	"	1								
"	X2	"	1	7.18	0.48	4.68	4.68	3.28	0.48	16.80	20.08
"	O2	"	1								
"	X3	"	1	5.08	0.02	1.02	1.02	.71	0.02	.70	1.72
"	O3	"	1								
"	Flux	"		trace	none						
10/16/39	A41	"	1	2.59	0.06	0.51	0.51	.36	0.06	2.10	2.46
"	O.10	"	1								
"	A42	"	1	2.56	0.11	0.43	0.43	.30	0.11	3.85	4.15
"	O12	"	1								

Date	No	Charge	Inquart	Wt. Bead	Wt. Au	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
10/16/39	A43 08	1 A.T.	1	mg. 3.19	mg. 0.33	0.84	0.84	\$.59	0.33	\$11.55	\$12.14
"	A44 09	"	1	2.67	0.10	0.55	0.55	.39	0.10	3.50	3.89
10/17/39	A45 47C	$\frac{1}{2}$ A.T.	1	2.68	0.07	0.59	1.18	.83	0.14	4.90	5.73
"	48 SM	1 A.T.	1	2.75	0.11	0.62	0.62	.45	0.11	3.85	4.47
"	47 ST	2 A.T.	1	2.80	0.07	0.73	0.36	.25	0.035	1.23	1.48
"	48 SC	1/10 "	0	45.16	18.56	29.60	296.0	207.20	135.6	4746.00	4955.20
"	X4 1 MY	1 A.T.	1	44.30	0.87	41.41	41.41	28.99	0.87	30.45	71.36
"	X5 2 MS	"	1	3.11	0.035	1.05	1.06	.74	0.035	1.23	1.97
"	49 04	"	1	3.05	0.15	0.88	0.88	.62	0.15	5.25	5.87
"	50 05	"	1	2.80	0.09	0.69	0.69	.43	0.09	3.15	3.63
"	51 06	"	1	3.18	0.14	1.02	1.02	.71	0.14	4.90	5.92
"	52 07	"	1	4.04	0.19	1.83	1.83	1.28	0.19	6.65	7.93
"	7 53	.1 So.	0	41.70	11.68	30.02	300.2	219.14	116.8	4088.00	4296.14
"	1 C	.2 Cru.	0	78.5	22.00	56.50	282.5	197.75	110.0	3850.00	4047.75
"	54	1 A.T.	1	2.60	0.07	0.51	0.51	.35	0.07	2.45	2.80
"	55 08	$\frac{1}{2}$ A.T.	1	3.26	0.16	2.16	2.16	1.52	0.32	15.20	16.72
"	56 R	.3 A.T.	1	50.26	6.61	43.53	145.1	101.57	22.05	771.05	872.63
"	57 1F	$\frac{1}{2}$ A.T.	1	119.32	25.28	93.92	187.84	131.49	50.56	1769.6	1901.09
"	58 02	1 A.T.	1	4.97	0.54		Salted				
"	59 03	"	1	3.67	0.23	1.42	1.42	.99	0.23	9.05	9.04
"	60 09	"	1	4.88	0.28	2.53	2.53	1.81	0.28	9.80	11.61
"	61 010	"	1	3.89	0.22	1.56	1.56	1.09	0.22	7.70	8.79
"	62 T	"	1	3.32	0.19		Salted				
"	63 12 C	.1 A.T.	0	61.70	10.45	51.27	512.7	358.89	104.30	3650.50	4009.39
"	64 1	1 A.T.	1	3.42	0.18	1.22	1.22	.85	0.18	6.30	7.16
"	65 2	"	1	3.45	0.15	1.26	1.26	.88	0.15	5.25	6.13
"	58 3	"	1	4.65	0.53	2.10	2.10	1.47	0.53	18.55	20.65
"	62 4	"	1	3.84	0.29	1.53	1.53	1.07	0.29	10.15	11.22
"	66 5	"	1	2.52	0.04	0.46	0.46	0.32	0.04	1.40	1.72

Date	No.	Charge	Inquart	Wt. Bead Mg	Wt. Au Mg	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
10/20/39	67	1 A.T.	1	2.87	0.03	0.82	0.82	\$.57	0.03	\$ 1.05	\$ 1.62
"	68	"	1	4.86	0.41	2.43	2.43	1.70	0.41	14.35	16.05
"	69	"	1	3.74	0.17	1.55	1.55	1.09	0.17	5.95	7.04
"	70	"	1	3.80	0.25	1.13	1.13	.79	0.25	8.75	9.54
"	71	"	1	4.10	0.09	1.99	1.99	1.39	0.09	3.15	4.54
"	72	"	1	3.87	0.11	1.44	1.44	1.01	0.11	3.35	4.86
"	73	"	1	5.11	0.25	2.84	2.84	1.99	0.25	8.75	10.74
"	74	"	1	2.58	0.01	0.55	0.55	.39	0.01	.35	.74
"	75	"	1	2.60	0.03	0.55	0.55	.39	0.03	1.05	1.60
"	67	"	1.	3.41	0.13	1.21	1.21	.85	0.13	5.50	6.35
10/21/39	76	"	1	3.00	0.20	0.88	0.88	.62	0.20	7.00	7.62
"	77	"	1	4.00	0.45	1.53	1.53	1.07	0.45	15.75	16.82
"	78	"	1	5.12	0.51	2.79	2.79	1.95	0.51	10.85	12.80
10/22/39	79	5 "	1	3.47	0.24	1.21	1.21	.85	0.24	6.40	9.25
"	80	6 "	1	5.57	0.96	2.59	2.59	1.67	0.96	33.60	35.22
"	81	7 "	1	2.67	0.01	0.64	0.64	.45	0.01	.55	.99
10/23/39	82	1 "	1	3.64	0.05	1.57	1.57	1.10	0.05	1.75	2.85
"	83	2 "	1	2.44	0.02	.40	.40	.28	0.02	.70	.98
"	84	3 "	1	2.63	0.03	.57	.57	.40	0.03	1.05	1.45
"	85	4 "	1	2.58	0.01	.55	.55	.39	0.01	.35	.74
"	86	5		Button brittle. Broken							
"	87	6 "	1	3.60	0.26	1.32	1.32	.92	0.26	9.10	11.02
"	88	7 1/2 A.T.	0	2.00	0.26	1.74	1.74	1.22	0.26	19.20	19.42
10/25/39	1 82	1 A.T.	1	3.81	0.23	1.56	1.56	1.09	0.23	9.05	9.14
"	2 89	"	1	3.55	0.18	1.35	1.35	.95	0.18	6.30	7.25
"	3 90	"	1	4.06	0.15	1.89	1.89	1.32	0.15	5.25	6.57
"	4 91	"	1	5.35	0.29	3.04	3.04	2.13	0.29	10.15	12.28
"	5 92	"	1	3.99	0.19	1.68	1.68	1.18	0.19	6.65	7.83
"	6 95	"	1	3.15	0.16	.97	.97	.68	0.16	5.60	6.28

Date	No.	Charge	Inquart	Wt. Bead mg	Wt. Au mg	Wt. Ag	Os/T Ag	Value	Os/T Au	Value	Total Value
10/25/39	7 94	1A.T.	1	4.14	0.26	1.86	1.86	\$ 1.50	0.26	\$ 9.10	\$10.40
"	8 95	"	1	2.54	0.02	.50	.50	.35	0.02	.70	1.05
"	9 96	"	1	2.50	0.03	.45	.45	.32	0.03	1.05	1.37
"	10	"	1	2.43	0.03	.38	.38	0.27	0.03	1.05	1.32
"	100	"	1	2.42	0.03	.37	.37	.26	0.03	1.05	1.31
"	101	"	1	2.97	0.15	.80	.80	.56	0.15	5.25	5.81
"	97	"	1	3.27	0.18	1.07	1.07	.75	0.18	6.30	7.05
"	98	"	1	4.24	0.16	2.06	2.06	1.44	0.16	5.60	7.04
"	99	"	1	3.95	0.15	1.73	1.73	1.25	0.15	5.25	6.50
"	102	"	1	3.09	0.11	0.96	0.96	.67	0.11	3.85	4.52
"	103	"	1	2.35	0.06	0.27	0.27	.19	0.06	2.10	2.29
"	4454	"	1	2.71	0.13	.56	.56	.39	0.13	4.55	4.94
"	4453	"	1	2.19	0.03	.14	.14	.09	0.03	1.05	1.14
"	4455	"	1	2.60	0.07	.51	.51	.36	0.07	2.45	2.81
"	4452	"	1	2.27	0.03	.22	.22	.15	0.03	1.05	1.20
"	4451	"	1	3.59	0.32	1.25	1.25	.88	0.32	11.20	12.08
"	4456	"	1	2.45	0.07	.36	.36	.25	0.07	2.45	2.70
"	4480	"	1	2.29	0.02	.25	.25	.18	0.02	.70	.88
10/26/39	1	"	1	2.43	0.01	.45	.45	.32	0.01	.35	.67
"	108	"	1	Freze							
"	110	"	1	3.70	0.21	1.47	1.47	1.03	0.21	7.35	8.38
"	105	"	1	3.56	0.24	1.30	1.30	.91	0.24	8.40	9.31
"	106	"	1	4.22	0.27	1.93	1.93	1.35	0.27	9.45	10.80
"	107	"	1	4.04	0.31	1.71	1.71	1.20	0.31	10.85	12.05
"	104	"	1	4.83	0.45	2.36	2.36	1.65	0.45	15.75	17.40
"	111	"	1	2.61	0.03	0.56	0.56	.39	0.03	1.05	1.44
10/27/39	1	"	1	2.39	0.03	0.54	0.54	.24	0.03	1.05	1.29
"	118	"	1	2.36	0.03	0.51	0.51	.22	0.03	1.05	1.27
"	119	"	1	2.52	0.03	0.47	0.47	.35	0.03	1.05	1.38
"	120	"	1	2.46	0.03	0.41	0.41	.29	0.03	1.05	1.34
"	121	"	1								

Date	No.	Charge	Inquart	Wt. mg.	Wt. Au	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
10/27/39	6	1 A.T.	1	5.44	0.13	1.44	1.44	\$ 1.01	0.13	\$ 4.55	\$ 5.56
"	112	"	1	5.69	0.16	1.51	1.51	1.08	0.16	5.60	6.66
"	7	"	1	5.30	0.17	1.11	1.11	.78	0.17	5.95	6.73
"	113	"	1	5.42	0.21	1.19	1.19	.83	0.21	7.35	8.18
"	8	"	1	2.58	0.05	0.51	0.51	.36	0.05	1.75	2.11
"	114	"	1	2.89	0.18	0.69	0.69	.48	0.18	6.30	6.99
"	9	"	1	2.60	0.04	0.54	0.54	.39	0.04	1.40	1.79
"	115	"	1	3.00	0.15	0.83	0.83	.58	0.15	5.25	5.83
"	10	"	1	2.63	0.08	0.53	0.53	.37	0.08	2.90	3.17
"	116	"	1	2.69	0.05	0.62	0.62	.45	0.05	1.75	2.18
"	11	"	1	2.78	0.10	0.66	0.66	.46	0.10	3.50	3.96
10/28/39	1	"	1	2.51	0.03	0.46	0.46	.32	0.03	1.05	1.37
"	122	"	1	2.46	0.04	0.40	0.40	.28	0.04	1.40	1.68
"	2	"	1	30.78	0.47		Ruined				
"	123	"	1	27.54	1.72	25.62	256.2	179.30	17.20	602.00	781.30
"	3	"	1	3.54	0.72	0.60	0.60	.42	0.72	25.20	25.30
"	124	"	1	4.47	0.10	2.65	26.50	18.44	1.00	35.00	53.55
"	4	"	1	3.13	0.19	0.92	0.92	.64	0.19	6.65	7.47
"	125	"	1	5.18	0.71	2.45	2.45	1.72	0.71	24.83	26.57
"	5	"	0	5.16	0.70	4.46	44.60	31.22	7.00	245.00	289.60
10/30/39	130	.1 A.T.	0								
"	131	Gonsil	0								
"	129	1 A.T.	1								
"	5	Sp. .1 A.T.	1								
"	6	MoL 1 A.T.	1								
"	7	MoS	1								
"	126	2 Box .1 A.T.	0								
11/1/39	134	1 A.T.	1	2.68	0.12	0.54	0.54	.38	0.12	4.20	4.58
"	137	"	1	6.91	0.35	4.54	4.54	3.13	0.35	12.25	15.43
"	138	"	1	2.95	0.18	0.75	0.75	.53	0.18	6.30	6.83
"	139	"	1	2.33	0.15	0.66	0.66	.46	0.15	5.25	5.71
"	140	"	1	4.06	0.19	1.85	1.85	1.30	0.19	6.65	7.95
"	141	"	1	2.43	0.02	0.39	0.39	.27	0.02	.70	.97
"	142	"	1	3.46	0.16	1.28	1.28	.90	0.16	5.60	6.50
"	143	"	1	3.68	0.15	1.51	1.51	1.06	0.15	5.25	6.31
"	144	"	1	2.99	0.12	0.85	0.85	.60	0.12	4.20	4.80
"	145	"	1	2.85	0.14	0.69	0.69	.48	0.14	4.90	5.38

Date	No.	Charge	Inquart	Wt. Bead mg.	Wt. Au mg.	Wt. Ag	Oz/T Ag	Value	Oz/T Ag	Value	Total Value
11/2/39	146	I.A.T.	1	3.76	0.22	1.52	1.52	\$ 1.06	0.22	\$ 7.70	\$ 8.76
"	147	"	1	3.06	0.15	0.89	0.89	.59	0.15	5.25	5.84
"	148	"	1	2.40	0.04	0.34	0.34	.24	0.04	1.40	1.64
"	149	"	1	2.41	0.04	0.35	0.35	.25	0.04	1.40	1.65
"	150	"	1	2.33	0.04	0.27	0.27	.19	0.04	1.40	1.59
11/3/39	151	"	1	3.63	0.29	1.32	1.32	.92	0.29	10.15	11.07
"	152	"	1	3.11	0.13	0.96	0.96	.67	0.13	4.55	5.22
"	153	"	1	5.25	0.14	1.09	1.09	.76	0.14	4.90	5.66
"	157 T	"	1	2.42	0.04	0.36	0.36	.25	0.04	1.40	1.65
"	158 T	"	1	2.53	0.03	0.48	0.48	.34	0.03	1.05	1.39
"	159 T	"	1	2.48	0.01	0.45	0.45	.32	0.01	0.35	.67
"	154	"	1	4.00	0.23	1.75	1.75	1.23	0.23	7.95	8.23
"	155	"	1	3.01	0.19	0.80	0.80	.56	0.19	6.65	7.21
"	156	"	1	3.07	0.12	0.93	0.93	.65	0.12	4.20	4.85
11/4/39	162	"	1	3.39	0.12	1.25	1.25	.88	0.12	4.20	5.08
"	163	"	1	2.88	0.09	0.77	0.77	.54	0.09	3.15	3.69
"	164	"	1	3.60	0.22	1.26	1.26	.88	0.22	7.70	8.58
"	160	"	1	2.19	0.03	0.14	0.14	.10	0.33	1.05	1.15
"	165	"	1	2.44	0.03	0.39	0.39	.27	0.03	1.05	1.32
"	166	"	1	2.40	0.03	0.35	0.35	.25	0.03	1.05	1.30
"	161A	"	1	2.74	0.05	0.66	0.66	.46	0.05	2.10	2.56
"	161	"	1	3.23	0.15	1.06	1.06	.74	0.15	5.25	5.99
11/6/39	168	"	1	2.83	0.05	0.76	0.76	.53	0.05	1.75	2.28
"	172	"	1	2.83	0.06	0.85	0.85	.60	0.06	2.10	2.70
"	170	"	1	3.85	0.26	1.57	1.57	1.10	0.26	9.10	10.20
"	171	"	1	2.76	0.12	0.62	0.62	.43	0.12	4.20	4.63
"	167	"	1	4.74	0.19	2.53	2.53	1.77	0.19	6.65	8.42
"	173	"	1	2.84	0.18	0.64	0.64	.45	0.18	6.50	6.75
"	169	"	1	2.72	0.07	0.63	0.63	.44	0.07	2.45	2.89
"	174	"	1	2.75	0.03	0.70	0.70	.49	0.03	1.05	1.54

Date	No.	Charge	Inquart	Wt. Bead mg.	Wt. Au mg.	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
11/6/39	175	1 A.T.	1	2.64	0.01	0.61	0.61	\$.43	0.01	\$.35	\$.78
"	176	"	1	2.52	0.01	0.49	0.49	.34	0.01	.35	.69
"	179	"	1	2.70	0.10	0.58	0.58	.41	0.10	3.50	3.91
"	178	"	1	3.60	0.19	1.39	1.39	.97	0.19	6.65	7.62
11/7/39	177	"	1	2.42	0.005	.40	.40	.28	0.005	.17	.45
"	180	"	1	2.77	0.05	.70	.70	.49	0.05	1.75	2.24
"	181	"	1	2.87	0.13	.57	.57	.40	0.13	6.30	6.70
"	184	"	1	3.07	0.25	.79	.79	.55	0.25	9.10	9.65
"	182	"	1	2.53	0.03	.48	.48	.34	0.03	1.05	1.39
"	183	"	1	2.39	0.02	.35	.35	.25	0.02	.70	.95
11/8/39	185	"	1	3.46	0.13	1.31	1.31	.92	0.13	4.55	5.47
"	186	"	1	3.21	0.11	1.08	1.08	.76	0.11	3.85	4.61
"	187	"	1	2.42	0.025	0.38	0.38	.27	0.025	.88	1.15
"	188	"	1	2.76	0.15	0.59	0.59	.41	0.15	5.25	5.66
"	189	"	1	2.45	0.03	0.40	0.40	.28	0.03	1.05	1.33
"	190	"	1	2.83	0.08	0.73	0.73	.51	0.08	2.80	3.31
"	191	"	1	2.50	0.03	0.45	0.45	.32	0.03	1.05	1.37
"	192	"	1	2.69	0.11	0.56	0.56	.39	0.11	3.85	4.24
"	1	1 A.T.	1	2.00	0.01	--	--	--	.02	.70	.70
11/9/39	193	1 A.T.	1	2.89	0.15	0.72	0.72	.60	0.15	5.35	5.75
"	194	"	1	2.28	0.02	0.25	0.25	.18	0.02	0.70	.88
"	197	"	1	2.75	0.17	0.56	0.56	.39	0.17	5.95	6.34
"	198	"	1	2.26	0.02	0.21	0.21	.15	0.02	.70	.85
"	199	"	1	2.50	0.15	0.33	0.33	.23	0.15	5.25	5.48
"	200	"	1	2.34	0.02	0.30	0.30	.21	0.02	.70	.91
"	201	"	1	2.48	0.08	0.38	0.38	.27	0.08	2.80	3.07
11/10/39	195	"	1	2.42	0.15	0.25	0.25	.18	0.15	5.25	5.43
"	202	"	1	2.66	0.16	0.48	0.48	.34	0.16	5.60	5.90
"	203	"	1	2.44	0.01	0.41	0.41	.29	0.01	.35	0.64
"	204	"	1	2.38	0.05	0.51	0.51	.22	0.05	1.75	1.97

Date	No.	Charge	Inguart	Bead	Wt. mg.	Wt. Au	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
11/10/39	205	1 A.T.	1	2.54	0.10	0.42	0.42	\$.29	0.10	\$ 3.50	\$ 3.79	
"	206	"	1	2.59	0.01	0.35	0.35	.25	0.01	.35	.60	
"	207	"	1	3.82	0.12	1.68	1.68	1.18	0.12	4.20	5.38	
"	208	"	1	2.50	0.03	0.45	0.45	.32	0.03	1.05	1.37	
"	198	"	1	2.92	0.09	0.81	0.81	.57	0.09	3.15	3.72	
"	215	"	1	2.60	0.05	0.53	0.53	.37	0.05	1.75	2.12	
"	214	"	1	2.56	0.02	0.52	0.52	.37	0.02	.70	1.07	
11/11/39	210	"	1	2.85	0.18	0.65	0.65	.46	0.18	6.50	6.76	
"	209	"	1	3.32	0.19	1.11	1.11	.78	0.19	6.65	7.43	
"	211	"	1	4.01	0.31	1.68	1.68	1.18	0.31	10.85	12.03	
"	212	"	1	4.06	0.23	1.81	1.81	1.27	0.23	8.05	9.32	
"	220	"	1	3.77	0.23	1.52	1.52	1.06	0.23	8.05	9.11	
"	213	"	1	2.91	0.09	.80	.80	.56	0.09	3.15	3.71	
"	216	"	1	3.30	0.09	1.19	1.19	.83	0.09	3.15	3.98	
"	217	"	1	2.56	0.02	0.52	0.52	.36	0.02	.70	1.06	
"	218	"	1	3.80	0.31	1.47	1.47	1.03	0.31	10.85	11.98	
"	219	"		Charge went through crucible.								
11/13/39	222	"	1	3.02	0.09	0.81	0.81	.57	0.09	3.15	3.72	
"	223	"	1	2.50	0.02	0.46	0.46	.32	0.02	.70	1.02	
"	224	"	1	2.67	0.05	0.60	0.60	.42	0.05	1.75	2.17	
"	221	"	1	3.13	0.15	0.96	0.96	.67	0.15	5.25	5.92	
"	225	"	1	4.19	0.22	1.95	1.95	1.37	0.22	7.70	9.07	
"	226	"	1	3.37	0.12	1.23	1.23	.86	0.12	4.20	5.06	
"	227	"	1	2.57	0.02	0.53	0.53	.37	0.02	.70	1.07	
"	228	"	1	3.22	0.23	0.97	0.97	.68	0.23	8.05	8.73	
"	229	"	1	2.62	0.02	0.58	0.58	.41	0.02	.70	1.11	
"	230	"	1	3.61	0.24	1.35	1.35	.95	0.24	8.40	9.35	
"	231	"	1	2.59	0.02	0.55	0.55	.39	0.02	.70	1.09	
"	232	"	1	3.55	0.19	1.34	1.34	.94	0.19	7.35	8.29	
11/14/39	233	"	1	2.66	0.02	0.62	0.62	.43	0.02	.70	1.13	

Date	No.	Charge	Inquart	Bead	Wt. mg.	Wt. mg.	Wt. mg.	Oz/T Ag	Value	Oz/T Au	Value	Total Value
11/14/39	234	1 A.T.	1		5.28	0.09	1.17	1.17	\$.82	0.09	\$ 3.15	\$ 3.97
"	235	"	1		2.50	0.02	0.46	0.46	.32	0.02	.70	1.02
"	236	"	1		3.26	0.15	1.09	1.09	.76	0.15	5.25	6.01
"	237	"	1		2.63	0.02	0.59	0.59	.41	0.02	.70	1.11
"	238	"	1		3.29	0.14	1.13	1.13	.79	0.14	4.90	5.69
"	239	"	1		2.38	0.01	0.35	0.35	.25	0.01	.35	.60
"	240	"	1		2.46	0.02	0.42	0.42	.29	0.02	.70	.99
"	241	"	1		3.33	0.11	1.20	1.20	.84	0.11	3.85	4.69
"	242	"	1		2.56	0.02	0.52	0.52	.36	0.02	.70	1.06
"	243	"	1		3.36	0.14	1.20	1.20	.84	0.14	4.90	5.74
"	244	"	1		2.59	0.02	0.55	0.55	.39	0.02	.70	1.09
11/15/39	245	"	1		3.54	0.17	1.35	1.35	.95	0.17	5.95	6.90
"	246	"	1		2.52	0.02	0.48	0.48	.34	0.02	.70	1.04
"	247	"	1		4.00	0.38	1.60	1.60	1.12	0.38	13.30	14.42
"	248	"	1		2.49	0.04	0.43	0.43	.50	0.04	1.40	1.70
"	249	"	1		2.48	0.04	0.42	0.42	.29	0.04	1.40	1.69
"	250	"	1		3.66	0.26	1.44	1.44	1.01	0.26	7.00	8.01
"	251	"	1		3.39	0.31	1.06	1.06	.74	0.31	10.85	11.59
11/16/39	252	"	1		2.85	0.04	0.79	0.79	.55	0.04	1.40	1.95
"	253	"	1		2.79	0.02	0.75	0.57	.53	0.02	.70	1.23
"	254	"	1		2.73	0.02	0.74	0.74	.52	0.02	.70	1.22
"	255	"	1		2.74	0.01	0.71	0.71	.50	0.01	.55	.85
"	256	Cons	1		106.57	22.27	84.30	843.0	590.00	222.7	7794.50	8384.50
11/17/39	257	1/2 A.T.	1		24.52	14.00	8.50	Not enough silver				
"	258	"	1		19.77	9.65		Not enough silver				
"	259	"	1		20.15	7.57	10.56	21.12	14.78	15.14	529.90	551.02
"	260	"	1		17.91	6.96	8.93	17.86	12.50	13.92	487.20	505.06
"	261	1 A.T.	0		91.69	21.56	70.13	701.3	490.91	215.6	7546.00	8036.91
Report	257	1/2 A.T. 31.7mg.			24.52	12.04	10.45	20.90	14.63	24.1	843.50	858.13
Report	258	"	34.8		19.77	9.17	8.53	17.16	12.01	16.34	641.90	658.91

Date	No.	Charge	Inquart	Wt. Bead	Wt. Au	Wt. Ag	Oz/T Ag	Value	Oz/T Au	Value	Total Value
Report	261	1 A.T.	4	21.88	5.00	8.50	17.80	\$ 12.32	10.00	\$ 350.00	\$ 362.32
"	262	"	0	112.17	7.87	104.5	208.5	146.02	15.73	550.90	696.92
"	264	"	0	99.00	8.00		182.0	127.40	16.00	560.00	687.40
"	263	1 A.T.	0	79.28	17.00	62.23	622.8	435.96	170.0	5950.00	6385.96
"	265	"	1	5.21	0.10	1.09	1.09	.76	0.10	3.50	4.26

INSIDE MEASUREMENT OF BIN - 18'3" x 19'10" x 13' deep.

$$\begin{aligned} 18'3" \times 19'10" &= 361.96 \text{ square feet} \\ 361.96 \times 13 &= 4705.23 \text{ cubic feet} \end{aligned}$$

WEIGHT OF CUBIC FOOT OF CRUSHED ORE, 1 CU. FT. BOX FILLED
WITH SAMPLES TAKEN OFF FEED BELT

$$\begin{aligned} 100\frac{1}{2} \text{ lbs.} &= \text{Ore plus box} \\ 15\frac{1}{2} \text{ " } &= \text{Box} \\ \hline 85 \text{ " } &= \text{Cu. Ft. of Ore} \end{aligned}$$

$$\frac{2000}{85} = 23.53 \text{ Cu. Ft. to Ton}$$

$$4705.23 \times 85 = 399,944.55 \text{ lbs} = 199.97 \text{ Ton capacity}$$

$$\frac{199.97}{13} = 15.38 \text{ Tons to 1 Foot in Depth of Bin.}$$

MILL OPERATION DATA.

Grind	60% Solids
Float	22% Solids
Rougher	301 - .10 lbs. to ton
	208 - .10 lbs. to ton
	A.F.51 - .155 lbs. to ton
Cleaner	301 - .05 lbs. to ton
	208 - .05 lbs. to ton

1939 MONTH	ORE TO BIN--TONS TRUCKS ESTIMATED	ORE TO BIN ASSAY RESULTS	MILL FEED SHIFTS	MILL FEED TONS MILLED	MILL HEADS ASSAY VALUE	MILL TAILS ASSAY VALUE
PAY	LOCATION ----- QUANTITY	OZ. AG OZ. AU VALUE	OPERATED	PER SHIFT	OZ. AG OZ. AU VALUE	OZ. AG OZ. AU

NOTE: Started crushing ore from mine Sept. 19, 1939.

9-19	No. 1 Vein	65.00	7.00 (approx)	Mill not operating		
to	No. 2 "	14.50	12.24	"		
10-11	No. 2 Level	30.00	3.00	"		
	(clean up)					
10-12)	No. 1 Shute	2.00	0.49	0.10	3.99	
10-13)	Crusher being repaired					
10-14)						
10-15	No. 1 Shute	10.25	0.43	0.11	4.15	
10-16	No. 1 Vein)	20.50	0.88	0.15	5.87	
10-16	No. 2 Vein)		0.69	0.09	3.63	
10-16	Ford Dump F-6	16.50	1.83	0.19	7.93	
10-17	No. 1 Vein	11.60	1.42	0.23	9.04	
10-17	Ford F-5	14.50	2.58	0.28	11.61	
10-18	No. 1 Vein	11.20	1.26	0.15	6.13	
	None from dumps					
10-19	No. 1 Vein	6.00	1.13	0.25	9.54	
	Ford F-5	15.50	1.99	0.09	4.54	
10-20	Ford F-5	15.00	2.79	0.31	12.80	
1	*SS Ford C-4	12.00	1.53	0.45	16.82	
	SS Ford E-1	3.00)				
10-21	SS Ford E-5	15.00)	2.39	0.96	35.22	
Regular Mill run on 3 shifts started						
10-22	Sunday no hauling					
10-23	No. 1 Vein	11.40	0.80	0.15	5.81	
	Ford F-1	3.00)				
	Ford F2-3	9.00)	2.84	0.25	10.74	
	SS Ford I-5	15.00	1.71	0.31	12.05	

Bin 6 feet deep @ 15.38 - 123 tons.

50 trips Total 300.95 - 123 - 177.95 against----- 252.2

* Silver State Construction Co. Inc. Ford V8 @ 2.00 per hr.

1959 MONTH DAY	ORE TO BIN--TONS TRUCKS ESTIMATED		ORE TO BIN ASSAY RESULTS		MILL FEED SHIFTS OPERATED	MILL FEED TONS MILLED PER SHIFT	MILL HEADS ASSAY VALUE		MILL TAILS ASSAY VALUE			
	LOCATION	QUANTITY	OZ. AG	OZ. AU			OZ. AG	OZ. AU	OZ. AG	OZ. AU		
10-24	No. 1 Vein	509.95	1.07	0.16	1st shift	252.2	1.68	0.19	7.83	0.45	0.03	1.57
	Ford F2	8.26	2.06	0.16	2nd "	(20.1)	0.97	0.16	6.28	0.39	0.03	1.32
	Ford F3	3.00	0.96	0.11	3rd "	(16.8)	1.86	0.26	10.40	0.37	0.03	1.31
	SS Ford D	12.00	1.75	0.15		(16.9)						
11-25	No. 1 Vein	12.06			1st "	(19.1)	1.47	0.21	8.39	0.24	0.02	.88
	Ford F3	3.00			2nd "	(18.8)	1.30	0.24	9.31	0.45	0.01	.67
	No. 1 Vein	9.16	1.19	0.21	3rd "	(21.0)	1.93	0.27	10.20	0.56	0.03	1.44
	Ford Nelly D	19.50	0.51	0.05	1st "	(18.5)	1.44	0.13	5.56	0.34	0.03	1.29
	QUE C. of Nelly D	9.00	0.69	0.18	2nd "	(17.3)	1.51	0.16	6.66	0.31	0.03	1.27
	No. 1 Vein	11.69	0.66	0.10	3rd "	(16.8)	1.11	0.17	6.73	0.41	0.03	1.34
11-27	Ford Nelly D	20.00	0.62	0.05	1st "	(18.5)	0.83	0.15	5.83	0.46	0.03	1.37
	(in bin 5 ft depth)				2nd "	(18.5)						
					3rd "	(18.7)	0.53	0.08	3.17	0.40	0.04	1.68
11-28	none hauled (snow)	Total tons to gin to date	shut down		Total Mill							
		5 1/2 ft. in bin	15.38		425.12	Tally						
		milled	84.59		340.53	against	473.2	tons				
10-29	none hauled	Cleaning up and drying concentrates										
10-29	Ford Middle	2.00	0.54	0.12	4.58							
	Junista Dump	20.00	0.66	0.15	5.71							
10-31	Ford *UJ	5.41	1.85	0.19	7.95							
	CT**K	20.50	0.69	0.14	5.38							
11-1	Ford UJ	20.00	1.53	0.22	8.76							
	CT K	1.59	0.89	0.15	5.84							
11-2	No. 1 Vein	22.00	0.93	0.12	4.85							
	Ford UJ	30.00	0.80	0.19	7.21							
	CT K	7.98	1.75	0.23	8.28							
11-3	No. 1 Vein	5.00	0.66	0.06	2.56							
	Ford UJ	40.00	0.58	0.10	3.91							
	CT K		1.26	0.22	8.53							
	Total 102 tons truck	599.90										
			Shut down trouble with mine pump									
			641.7									

1939 MONTH DAY	ORE TO BIN--TONS TRUCKS ESTIMATED LOCATION	QUANTITY	ORE TO BIN		MILL FEED SHIFT	MILL FEED TONS MILLED PER SHIFT	MILL HEADS		MILL TAILS		
			ASSAY RESULTS	VALUE			ASSAY VALUE	VALUE	ASSAY VALUE	VALUE	
			OZ. AG	OZ. AU			OZ. AG	OZ. AU	OZ. AG	OZ. AU	
11-4	Balance 102 trips 599.90	2.55	2.53	0.19	8.42	641.7	0.76	0.05	2.23	0.70	0.03
	No. 1 Vein	5.00				(5.8	1.57	0.26	10.20	0.49	0.01
	CK K	35.00	1.39	0.19	7.62	(35.2	0.62	0.12	4.63	0.40	0.005
11-5	CT L	55.00	0.63	0.07	2.89	(16.4	0.85	0.06	2.70	0.61	0.01
	CT UJ	stopped hauling contrast				(14.3	0.64	0.18	6.75	0.49	0.01
						(15.8	0.64	0.18	6.75	0.40	0.005
11-6	Ford UJ	14.50	0.79	0.26	9.65	(13.9	0.70	0.05	2.24	0.48	0.03
	GMC UJ	1.75				(12.9	0.57	0.18	6.70	0.35	0.02
						(16.4	1.08	0.11	4.61	0.39	0.025
11-7	No. 1 Vein	5.00	1.31	0.13	5.47	(14.8	0.59	0.15	5.66	0.40	0.03
	Ford UJ	35.00				(14.6	0.73	0.08	3.51	0.45	0.03
	GMC UJ	11.75	0.56	0.11	4.24	(14.4	0.72	0.15	5.75	0.25	0.02
11-8	Ford UJ	34.00	Vein No. 1	3.72		(14.4	0.56	0.17	6.34	0.21	0.02
	GMC UJ	12.00	0.38	0.08	5.07	(15.4	0.33	0.13	5.48	0.30	0.02
						(15.4	0.48	0.16	5.94	0.41	0.01
11-9	Ford UJ	9.00	0.65	0.18	6.76	(14.4	0.42	0.10	3.79	0.35	0.01
	GMC UJ	2.00	1.68	0.31	12.03	(15.6	1.68	0.12	5.38	0.45	0.03
	Ford Walker	13.00	1.61	0.23	9.32	(17.4	0.80	0.09	3.71	0.52	0.02
			1.11	0.19	7.43						
11-10	GMC Walker	8.75	0.96	0.15	5.92						
	Ford Walker	9.75				(14.3	1.19	0.09	3.98	0.32	0.02
						(15.3	1.47	0.31	11.88		
	GMC Walker	7.00	1.52	0.23	9.11	(17.2	0.81	0.09	3.72	0.46	0.02
11-11	Ford L	4.00									
	GMC L	2.00	1.95	0.22	9.07						
	No. 1 Vein	3.00				(16.4	1.23	0.12	5.06	0.53	0.02
11-12						(15.6	0.97	0.23	8.73	0.58	0.02
						(15.4	1.35	0.24	9.35	0.55	0.02
						(20.0	1.34	0.19	8.29	0.62	0.02
11-13						(17.0	1.17	0.09	3.97	0.46	0.02
						(16.0	1.09	0.15	6.01	0.59	0.02
						(15.0	1.20	0.11	4.66	0.52	0.02
						(15.5	1.20	0.14	5.74	0.55	0.02
Total 170 trips about 851.00 tons							Shut down mill to operate two shifts to finish ore left in bin				
Total 170 trips about 851.00 tons							1080.7 tons This run 60.75				
							against				

1939
MONTH
DAY

ORE TO
BIN
TONS
851.00

MILL FEED
SHIFTS
OPERATED

MILL FEED
TONS MILLED
PER SHIFT

11-14

1st (15.6
2nd 47.1 (17.1
3rd (14.4

bin empty 5:15 A.M.
851.00 Tons wet estimated put
in bin. Truck loads
were definite loaded
more than credited. Unaccounted 276.8 tons

1127.8 Tons Wet-Irregular Feed
on belt makes this figure
851 probably greater than
actual.

11-15)

Cleaned up mill and dried concentrates. Filter not working,

11-16)

slime concentrates in big tank had to be decanted. This

11-17)

was slow job to dry wet slimy concentrates

11-18)

11-19)

Shipped concentrates to Selby ASAR

7 Sacks High Grade	633 lbs. not approx. 5.50/lb	\$2215.00
32 " Tank Conc.	1992 " " " 50¢	797.00
6 " Sand conc. from classifier, hopper, ball mill cells, etc.	675 " " " 50¢	202.00
<hr/>		
Total Wt. in lbs. not	3298 lbs. Total Estimated Value	\$3214.00

Average estimated value of concentrates

1.00 per pound or approx. \$2000.00 per ton

Taila Kelseys Mill

Flowing	0.35	0.01	.60
Bailing Pile	0.42	0.02	.99

SECOND MILL RUN OCT. 31 TO NOV. 14TH, 1959, INCLUDE.

% moisture

DATE	TONS MILLED WET	TONS MILLED DRY	ASSAY VALUE DOLLARS	TONS ASSAY VALUE
10-31	19.2) 16.4)	13.2) 15.6)	6.83	230.85
11-1	17.2 16.7 13.5	16.8 15.9 17.6	6.50 6.51 4.80	105.95 100.29 84.30
11-2	13.5 13.5 17.2	17.3 17.6 16.3	11.02 5.22 5.66	193.96 91.37 92.26
11-3	15.3 10.5	15.0 10.0	5.08 3.69	76.20 36.90
11-4	5.3 14.6 14.8	5.5 13.9 14.1	2.23 10.20 4.63	12.54 141.73 65.28
11-5	16.4 14.3 15.8	15.3 13.6) 15.0)	2.70 6.75	42.12 193.05
11-6	13.9 12.9 16.4	13.2 12.3 15.6	2.24 6.70 4.61	29.57 52.41 71.92
11-7	14.3 14.6 14.4	14.1 13.9 13.7	5.66 3.51 5.75	79.31 46.01 78.78
11-8	14.4 15.4 15.4	13.7 14.6 14.6	6.34 5.48 5.94	36.86 30.01 36.72
11-9	14.4 15.6 17.4	13.7 14.3 16.5	3.79 5.38 3.71	51.92 79.62 61.22
11-10	14.3 15.3 17.2	13.6 14.5 16.3	3.93 11.88 3.72	54.13 172.26 60.64
11-11	16.4 15.6 15.4	15.6 14.8 14.6	5.06 9.73 9.35	79.94 129.20 136.51
11-12	20.0 17.0 16.0	19.0 16.1 15.2	8.29 3.97 6.01	157.61 63.92 91.35
11-13	15.0 15.5	14.2 14.7	4.59 5.74	66.60 84.38

FIRST MILL RUN OCT. 14TH TO 27TH, 1939
 Silver @70.00 ounce - Gold @35.00 ounce
 5% moisture

DATE	TONS MILLED WET	TONS MILLED DRY	ASSAY VALUE DOLLARS	TONS DRY ASSAY VALUE
14	10.0	9.5	\$ 12.14	\$ 115.33
15	11.7	11.1	3.89	43.18
16	17.6	16.7	5.92	98.56
17	18.4 12.0	17.5 17.1	8.70	504.13
18	5.9 15.3	5.6 14.8	7.15	145.86
19	11.2 14.3	10.6 13.6	4.86	117.61
20	4.6	4.4	7.62	33.53
21	18.0	17.1	9.25	153.13
22	17.6 21.6 20.5	18.7 20.5 19.5	9.14	513.24
23	14.0 14.9 17.5	14.1 14.2 16.6	7.23 6.57 12.23	102.23 93.29 203.35
24	20.1 16.8 16.9	19.1 16.0 16.1	7.83 6.28 10.40	149.55 100.43 167.44
25	19.1 18.8 21.0	18.1 17.9 19.9	8.33 9.31 10.80	151.63 166.65 214.92
26	18.5 17.3 16.9	17.6 16.4 16.0	5.56 6.66 6.73	97.96 109.22 107.69
27	18.5 18.5) 18.7)	17.6 17.6) 17.6)	5.53 5.17	102.61 112.22
Total	473.2	449.7 Avg.	7.59	5414.60

SECOND MILL RUN OCT. 31 TO NOV. 14TH INCLAS.

DATE	ORE TO BIN TONS WET	TONS MILLED WET	TONS MILLED DRY	ASSAY VALUE DOLLARS	TONS ASSAY VALUE	
Walker's Ore	851.00 41.75 <u>809.24</u>					
11-14		15.6 17.1 <u>14.4</u>	14.8 16.2 <u>13.7</u>	6.90 10.65 <u>14.42</u>	102.12 172.55 <u>197.55</u>	
	TOTAL 2ND RUN	664.5	621.8	Avg. \$6.22	3870.33	
	TOTAL 1ST RUN	473.2	449.7	Avg. \$7.59	3414.60	
Minus Walker Ore	*TOTAL 2ND RUN	612.3	582.8	6.04	3522.74	
	Net	Dry				
Total	851.00	808.4	1127.3 = 1071.5 Tons	\$6.80	7284.95	All ore milled
	41.75	39.0	Fried Walker 39.0	8.91	347.59	Fried Walker
	809.25	769.4	1088.0 1032.5	6.72	6937.34	All Goldfield Ore

* All ore from mine and dumps on leased ground of Goldfield Consolidated with exception of one dump just off Lower Philadelphia No. 40 claim on Martinez Fraction and June No. 2 belonging to Fried Walker. Walker agreed on payment 15% ore value.

Nov. 9	21.75 tons wet 7% moist - 2023 tons dry	Assay \$9.32
10	3.25 " scarce ore 3.20 " "	5.92
	from toe of dump	
10	16.75 tons wet 7% moist - 15.53 " "	9.11
Total wet tons	41.75	

20.23 tons	9.23	\$ 186.72
3.20	5.92	18.94
16.53	9.11	141.93
39.91 tons	8.91	347.59

$$39.91 \times 8.91 - \$347.59 \times .15 = \$52.44$$

GOLDFIELD CONSOLIDATED PAYMENT

Average value 6.72 x tons 1082.5	= \$6938.40
Less 10% for loss	693.84
	<u>\$6244.56</u>
Less \$2.50 per ton milling	2581.25
	<u>\$3663.31</u>

Royalty 10%

\$366.33