CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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4" Level - W. E. - end of Stope

Leland Dividend Mine Yavapai County

Colo. ful

4" Level — W.

Leland Dundee Mine

Yavapai County

Colorado

3° Level - W.

Leland Dividend Mine

Calno file

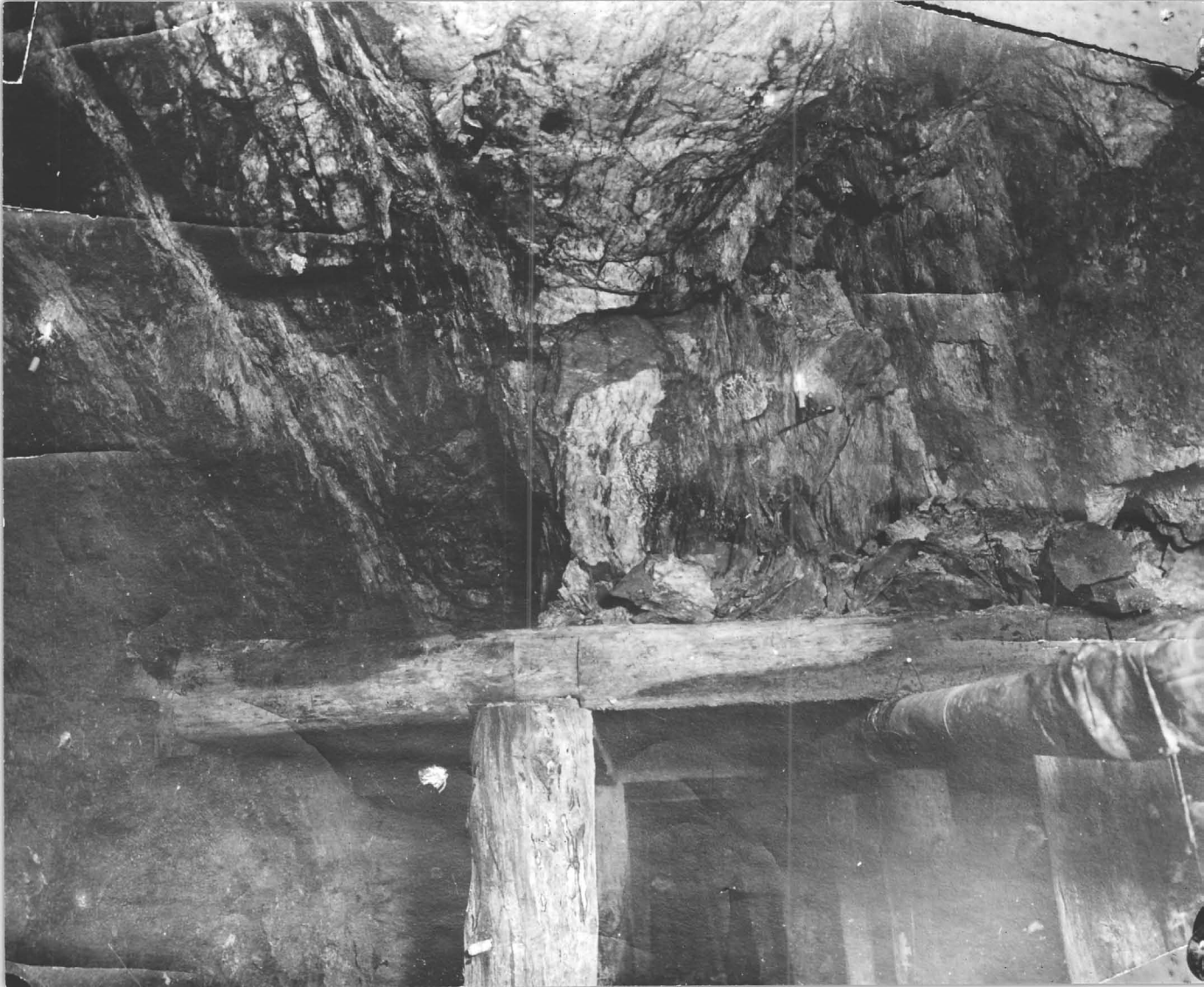
4" Level – W –

West end of Lake

Leland Hundred More

Yavapai County

Colors file



5' Level - W.

Leland Dividend Mine Yavapai County

Colvo file

LELAN-DIVIDEND GROUP

The Lelan-Dividend Group of Mining Claims comprises twenty claims, fourteen of which are patented and six are held by location and possession.

The whole tract covers about 325 acres of mineral lands lying contiguous and in one body, and penetrated by a series or belt of lodes or veins carrying gold and silver located in the Chaparral section of the Big Bug Mining District in Yavapai County, Arizona, and two and one-half miles from an operated railroad with good wagon road connection.

The names of the mining claims are the Lelan, Ticonderoga, Dona Ana, Independence, Dividend No. 1, Galena, Jaunita, Summit, Clipper, Jump Off, Comstock, Aladin, Peerless, Starlight, and Lelan Extension, Contention, Bonanza, Vidette, Bettie and Little Alice.

A surface map of these claims accompanies this statement and is marked "A".

Several thousand feet of development has been done on these claims in shafts, tunnels, drifts, winzes, raises, etc.

Approximately 20,000 tons of dependable ore of the average value of $10.00 per ton is developed, in these claims.

The principal development is done on the Lelan Claim. The shaft is 484 feet in depth, of good working size, well timbered, and the underground workings are in good shape, properly timbered and connected for ventilation. There are five stations from which levels are run out on and cutting the ore-bodies. Occasional connections between levels are made. The ore-bodies are well defined and fairly well opened up. Only moderate stoping has been done. From the fourth level up the mine is open to inspection and investigation.

The fifth level has been under water for four years. It can be unwatered at a small cost, but when so done preparation should be made for taking care of the shaft and opened ground.

On the fifth level in the west drift there is exposed an ore-body about six feet in width and 70 feet in length of the average value of $10.00 per ton. A cutting into the hanging wall

shows a further ore-body of three feet in width of the value of $10.00 and more per ton.

A map marked "B" of the underground development accompanies this statement.

About 180 feet east of the said Lelan shaft, and on the same vein or lode, a shaft, through the eastern end of the ore zone developed by the Lelan shaft, has been sunk to a depth of about 700 feet. Heretofore, we have not had access to these workings which are now under water. A considerable quantity of ore, in the past, has been mined and taken out through this shaft, but we have no accurate information of the quantity nor the value of the mineral extracted therefrom. However, we are briefly furnished with the following data by what we consider reliable authority, and which may be of some interest on the question of development.

"All recent work on this shaft has been confined to the third, fifth, and seventh levels, also timbering shaft from sixth to seventh level, a distance of 126 feet.

Work on the third level, consisting of an upraise of four feet, started on hanging wall vein at a distance of 20 feet west of Dividend shaft. Raise connecting with main 300 foot level of Lelan vein.

Fifth level. This work consists of driving drift west on hanging wall vein 121 feet, which is directly underneath on the same vein of the fourth level of the Lelan.

We find continuance of ore on that level for fifty feet to face of drift, which shows 48 inches of ore of fairly good values.

Seventh level. East drift consists of work for a distance of 113 feet east in which we have encountered bunches of some very good ore. West drift 136 feet, showing a strong ledge of quartz, in places showing good values.

Cross cutting in foot wall 36 feet, started at a point about 35 feet west of shaft. In my estimation crosscut will cut foot wall ledge at a distance of about 42 feet."

The Ticonderoga claim is developed by a shaft 200 feet deep with levels run at points 55 feet and 200 feet from the collar

of the shaft. The accompanying map "C" shows the development done.

We have been furnished the following data by a reputable person who was in charge of the development work during the progress, and which we have no reason to question.

"First level. 55 feet from surface. West drift having been driven from point 90 feet, west of shaft to point 255 feet, West from 100 to 235 feet. West of shaft, have stoped out considerable ore ranging in values from $60.00 to $65.00 per ton. The face of the drift is about 100 feet, vertical depth, from surface, owing to pitch of ground.

200 foot level. West drift has been continued to 702 feet west of shaft, having two good ore shoots, one beginning at a point 150 feet west of shaft, 60 feet in length which is stoped about 80 feet high. Back of stope now showing 18 inches of ore, average value $40.00 per ton. The other shoot beginning at a point 250 feet west of shaft and about 100 feet in length, and stoped to a height of 35 feet, but I feel satisfied we are at the top of a good ore shoot.

Cross cut has been started from a point 178 feet west of shaft in a southerly direction, from point of starting to face of same is 327 feet. In driving cross cut we encountered three separate veins. The first one has not been developed. The second vein encountered 125 feet from starting point, is developed by drift to west 21 feet, drift to east 80 feet, also raise in east drift 20 feet, showing good values.

The third vein encountered 180 feet from point of starting, which has been drifted on west to a distance of 235 feet with raise of 15 feet, which shows quartz containing a value of $20.00.

The shaft is in low ground and is filled with water. We have had no opportunity to verify this information.

Considerable development has been done in claims on other veins penetrating this group which will be better understood by a personal inspection on the ground, and this observation applies to the improvements upon the surface, operating equipment, etc., pertaining to the whole group.

So far as ascertained the general character of the ores of the veins in this group appear to be about the same, and is typically an amalgamating and concentrating ore. Concentrates made as a product after amalgamation, have a gold value of from four to five ounces per ton.

A ten stamp mill with concentration table was built to try out the milling qualities of the ore in the Lelan mine. A test run was made on ore taken principally from all parts of the mine, including the accumulated ore extracted in sinking shaft, running levels and other development work, gave the following returns.

Quantity of ore milled, 1600 tons. Value recovered:

1st. By amalgamation, as per mint certificate, Gold $13,394.68, Silver $168.03, total bullion $13,562.71.

2nd. By concentration, as per smelter certificate:

No. 1	27.122 tons at	$103.30 per ton,	$2,801.79
No. 2	22.016 tons at	98.39 per ton,	2,166.15

Making total recovery of $18,530.56.

(Signed) E. W. Wells.

Prescott, Arizona,

November 20, 1915.

DESCRIPTION, HISTORY AND PRODUCTION OF THE LELAN-DIVIDEND GROUP OF MINES, YAVAPAI COUNTY, ARIZONA.

A condensed compilation of available reports and a review of the recent operations.

LOCATION:

The property is twelve miles air line south east of Prescott. By road it is 26 miles from Prescott and 6 miles from Humboldt. It is reached from Prescott by taking Highway #112 to a short distance beyond Humboldt then taking a side road to the right, crossing the railroad near the siding on the Prescott and Eastern Division of the Santa Fe, which is, incidentally, the nearest shipping point.

The group of claims is situated on the head waters of the Galena and Ticonderoga Gulch on the East slope of Mt. Elliott in the Big Bug Mining District, Yavapai County, Arizona.

THE DISTRICT:

The Big Bug Mining District is on the northeastern slopes of the Bradshaw Mountains and extends from Big Bug Mesa to the Agua Fria Valley. It ranges in altitude from 4500' to 7000'.

Placer gold was discovered in the Big Bug region in the sixties and it is generally understood that all of the gulches paid well. This leads to the discovery of numerous veins and the subsequent working of the oxidized zones. In early days mining stopped when the limit of the oxidized zones was reached. Although the continuing sulphides often held values that steadily increased with depth, they could not profitably be recovered by amalgamation. No estimates of early production are available. Arizona Bureau of Mines Bulletin #37 states, "During the Early days some of the Big Bug deposits yielded a considerable amount of gold and silver from the oxidized zones. From 1901 to 1931 inclusive, the production of the district, as recorded by the U. S. Mineral Resources, amounts to approximately $17,000,000 in copper, gold, silver, lead and zinc. Nearly $4,000,000 of this amount was in gold, of which amount $30,000 came from placers.

The mines in the immediate vicinity of the Lelan-Dividend group have good production records. The adjoining properties are the Union-and little Jessie, which are consolidated and now known as the

Union-Jessie. Both became known in the late sixties. From about 1890 to 1898 it was worked by J. S. Jones and lessees. Their mill is reported to have produced about $750,000 worth of bullion and concentrates chiefly from the Little Jessie. The combined production record of the Union Jessie is $1,400,000. The next adjoining properties are the McCabe and Gladstone on the Galena Gulch. Arizona Bureau of Mines Bulletin #37 states, regarding the McCabe-Gladstone "During the early seventies this deposit yielded considerable amounts of rich oxidized ores. The property then remained practically idle for many years. It was worked continuously from 1898 to 1913 by the Ideal Leasing Company with a reported production of $2,500,000 to $3,000,000".

THE LELAN DIVIDEND GROUP:

Extent of property--vein system and mineralization--Underground Development, surface improvements and equipment.

This group of contiguous claims covers a large mineral area, approximately 320 acres of patented land and extends a mile or more in length on the strike of the mineralized zone.

It is characterized by prominent quartz outcroppings of numerous veins. These occur in and at the contact of a belt of sericite schist formation between quartz diorite on the east and massive Bradshaw granite on the west. Several basic dykes traverse the schist and quartz diorite. There is a great similarity in the different outcroppings and in the vein contents and the mineralization underground.

There are four main veins, the Galena, Lelan-Dividend-Independence, Ticonderoga, and Union. They have a lateral extent of several thousand feet and converge in a southwesterly direction in the western half of the Galena claim. All dip more or less steeply to the south. There are several other less pronounced outcroppings in the western portion of the group.

The average width of the main veins is about five feet; they vary from two to ten feet. The foot and hanging walls are well defined. The filling consists of massive white quartz. The ore shoots are lenticular in form. The pinching and swelling lenses sometimes

overlapping or lying alongside of each other and separated by schistose sericilic gangue material, vary in thickness from 2 to 10 feet or more and from 20 to 75 feet in lateral extent. Gold bearing sulphides, principally pyrite are irregularly distributed through the quartz lenses. Small amounts of lead and zinc sulphides are also present. Below the oxidized zone mineralization commences at or below the 170 ft. level and with depth more sulphides and better values are encountered.. The gold is deciminated in the sulphides in microscopic particles.

There are four distinct mines, the Lelan, Dividend, Galena, and Ticonderoga.

The Lelan shaft is 436 ft. deep with workings on five levels. On the 120 ft. level drifts extend 60' east and 140' west.

" " with a crosscut from the end of this drift 365 feet to the surface.

" " 170 ft. level drifts extend 120' east and 280' west.
" " 256 " " " " 180' " " 220' west.
" " 346 " " " " 150' " with a north cross cut 243' long and 400' or more west with a south cross cut 160' long.
" " 436 ft. level drift extend 150' east connecting with the Old Dividend Workings, and 840' west. There is a 40' winze driven from this level 270' west of the shaft.

The Dividend shaft is probably carried some distance below the lowest or 477 ft. level. Drifts were driven on four levels.

On the 145 ft. level drifts extend 40' east and 50' west.
" " 270 " " " " 20' " " 50' " .
" " 352 " " " " " " 100' " .
" " 477 " " " " 200' " " 100' ".

The collar of the Ticonderoga is 246 ft. lower than the Lelan and Dividend. The shaft is 200 ft. deep. Workings were on two levels.

On the 55 ft. level drift extends 250 feet to the east.
" " 200 " " " " 700 " " " " . From this level about 180' east of the shaft there is a crosscut 300' south from which drifts were driven 80' east and 240' west.

The Galena Shaft is 265 feet, deep the collar being 35' below the collar of the Lelan. Drifting was done on four levels.

On the 65 foot level drifts extend 55' east and 220' west.
" " 105 " " " " 100' " " 110' " .
On the 165 foot level drift is caved 40' east of shaft and extends 340' west.
On the 265 ft. level drifts extend 115' east and 190' west.

The workings in this mine have not reached the horizon that produced the best values in the Lelan.

Recent operations have been limited to the Lelan, which is equipped with an electric hoist (the property is served by Arizona Power Co. transmission lines) two motor driven air compressors enclosed in substantial buildings, store room, blacksmith shop, change house and heavy timber head frame. The old engine room at the Dividend is used for a garage and store room. The Galena shaft has a light head frame and gasoline hoist, recently used in opening the shaft. Here also the old engine room is used for a garage. The old stamp mill and other buildings at the Ticonderoga have been partially dismantled. The Lelan Mill, about 150 feet west of the Lelan shaft, recently rebuilt and brought up to date, contains a 6A Telsmith gyratory crusher, a hundred ton ore bin, ten stamps, 4 x 5 ball mill, 4½ x 18 duplex classifier, two Wilfley tables, an eight cell (273/4" x 27 3/4") Fahrenwald flotation machine, a 10 x 20 tailings thickner and complete supplimentary equipment, all electrically driven, for a capacity of 75 to 100 tons per day. The other buildings on the property are superintendent's house, garage and store house, foreman's house, bunk house and boarding house, all in good repair. Excellent water for domestic use is pumped from a well in the headwaters of the Galena gulch, west of the camp, to storage tanks and piped to dwelling and boarding houses.

The elevation of the camp is 5500 feet. The climate is excellent for working during all seasons.

EARLY OPERATIONS AND CONSOLIDATIONS:

The property as it stands today is the result of a number of consolidations. Available records of early operation and production are fragmental and incomplete. It appears, however, that the claims on which the four mines are located were originally owned and operated separately and that the development and operation of the various claims has been carried on more or less intermittently since considerably before 1877, when the Dividend and Galena Claims were patented and while no definite records of production prior to 1901 are available,

it is probable that the ore deposits known to have been mined before that time yielded a considerable amount of gold from the oxidized zones. Brown's report of 1868 mentions a 60 ton shipment from the Dividend mine to the Big Bug (Henrietta) mill that yielded $20.00 per ton in free gold. At that time it was not considered of commercial grade.

The Dividend Gold Mining Co. was organized in 1900 to take over the Dividend and the Ticonderoga. In 17 months operation in 1901 and 1902 records show that 665 tons of ore was milled with a recovery of $26,668.06 or $40.10 per ton. The small five stamp mill was operated at the rate of only 1.5 tons per day. In 1902 negotiations were started to consolidate the Dividend Mining Co. and the Galena Mining Co. with a view of increasing the capacity of the mill and further development and improvements. This consolidation was effected by the Dividend Consolidated Gold Mines Co. It comprised the following claims, from that time on, known as the Dividend Group; Independence, Ticonderoga, Dividend #1, Galena, Clipper, Summit, Comstock, Jump Off, Starlight, Peerless and sundry fractions. Some mining but principally work on development and improvements was continued until the latter part of 1905. The mill was increased to ten stamps and with other improvements its capacity was stated to be 20 tons per day. The property was then taken over by the newly organized Mt. Elliott Consolidated Mines Co. At this time the Aladin and Union claims are shown to be a part of the property in addition to those previously listed as the Dividend group, all patented except the Union, making 12 claims aggregating in area about 200 acres. Operation was resumed and records show that from Nov. 13, 1907 to Feb 11, 1910, the recovery amounted to $28,029.32.

While the Dividend Group was being developed and operated work on the Lelan, adjoining the Dividend, had been carried on. The shaft being only 200 ft. west of the Dividend shaft. This property, including several contiguous claims, all adjoining the Dividend group was acquired by Judge E. W. Wells and for a number of years was op-

erated by his son Elmer W. Wells. A rather extensive development program was carried out and a ten stamp mill was operated intermittently. Records show that in 1905 and 1906, 1600 tons of average ore taken from the various levels above the fifth, were milled with a recovery by amalgamation and table concentration of $18,462.30 or $11.54 per ton with mill tailing averaging $3.00 to $4.00 per ton and that in 1911, 1400 tons of ore averaging .41 oz. gold and .45 oz. silver per ton was shipped to the Humboldt smelter and 300 tons averaging .35 oz. gold and .5 oz. silver per ton were shipped to Jerome. These shipments were made on contract with the smelters for high (90%) si02 ore for furnace lining and no effort was made to sort for higher values. However gold and silver values in these shipments at prices then in effect amounted to approximately $34,000.00.

Considerable trouble arose between the operators of the Lelan and Dividend on account of alleged invasions and operations were discontinued when the question was thrown into litigation, which finally resulted in the organization of the Lelan-Dividend Mining Co. by the two owners, Judge E. W. Wells of Phoenix and Senator Reynolds of N. Y. and the consolidation of the Lelan and Dividend Groups, which now include the following patented mining claims; Ticonderoga, Dividend #1, Independence, Galena, Comstock, Clipper, Summitt, Jump Off, Peerless, Starlight, Aladin, Lelan, Dona Ana, Vidette, Bettie, Contention, Lelah, Extention, Omar and the Mineral Junction unpatented claim.

Lindgren states that the ore production of the Lelan-Dividend prior to 1923 was probably 10,000 tons which contained from a half to three ounces of gold per ton together with a little silver, copper and lead.

Work had been discontinued in 1916 to be resumed in 28 and 29 on a $25,000.00 development program, practically all work being done on the fifth level. When this amount of money had been spent the owners were unable to agree on plans for continuing the work and operations were again discontinued. In 1931, Senator Reynolds, who by this time had a controlling interest, was preparing to resume operations but died before his plans could be carried out. A caretaker

was left on the property and the Lelan mine kept unwatered.

RECENT OPERATIONS AND IMPROVEMENTS:

Early in 1932 a member of a syndicate, known as the Southern Exploration Company of San Antonio, Texas, learned that the executors of the Reynolds estate would consider leasing or disposing of this property. Negotiations were entered into and in Feb. 1932 the Southern Exploration Company's Engineer and two members of the syndicate visited the property. Some samples were taken that showed satisfactory values, but it was impossible to get far enough into the Lelan to make a satisfactory examination. They were impressed, however, by the surface indications and by what they were able to learn of the history and production of the Lelan Dividend group and of the adjoining properties, the Union-Jessie and the McCabe-Gladstone. They also learned that shortly before operation was discontinued in 1916 the property had been examined and reported upon favorably be a staff engineer of the American Smelting & Refining Co. but that no deal was consumated due to the large purchase price asked at that time. This report including the assay map of the Lelan was made available. With this information it was decided to secure an option and to do the work necessary to get into the Lelan for a more thorough examination. The results of this preliminary work were sufficiently encouraging to justify raising of funds for a more formal development program which included preparing the mine for extraction of ore and modernizing the mill. The necessary funds were raised by private subscription principally by members of the original syndicate. In June 1932 contract and option to purchase was formally concluded with the owners and with the operating capital available general repair work was carried on, a large stope west of the Lelan shaft was prepared for extraction, the necessary repairs to buildings made, assay laboratory equipped, modern mill equipment purchased and installed and mill repaired and reconstructed.

Ore extraction and milling was started on August 1, 1933 and continued for five months. During this period 2020 tons of ore were mined and milled with an average gold content of .44 oz. per ton.

Ninety and one half tons of concentrates were produced and shipped to the El Paso smelter. The total gold content was 808.36 oz. Including payments for silver lead and copper net smelter returns amounted to $23,313.86 with an average price of gold during the five months of $28.50 per oz.

The mill functioned perfectly making a recovery of 92.4 per cent of gold content. However with a milling capacity of 2000 tons or more per month, only 400 tons was being produced by the mine and that from one stope. After starting extraction from this stope it was found impossible to practice shrink stoping as had been contemplated. The quartz vein filling opened to a width of 30 feet, a schistose condition on both foot and hanging walls brought about a serious stoping problem. It was necessary to draw and spread waste fills from old caved stopes of the level above. The safe handling of the ground naturally resulted in much slower production than had been scheduled.

When operations were started it was expected that it would be possible to build up a cash reserve to take care of preparation for stoping of three other blocks in the Lelan and to open the Galena and Dividend, but with extraction confined to one stope and that retarded by unexpected conditions, returns were not sufficient to take care of this and although operating at a small profit, it was concluded that ore reserves were being used up uneconomically, that the very common error of attempting to equip a mine and mill and get into production with insufficient funds had been made. Consequently it was decided to shut down the mill and secure financing for at least three months of straight mine preparation and development and to provide additional compressor capacity, which had been found to be inadequate.

The members of the original syndicate were unable to advance the amount necessary for the proposed work and steps were taken to secure outside financing with the result that two examinations were made by engineers for parties interested in the propositions. Both engineers reported favorably to their principals. In April, 1934,

a satisfactory agreement was reached and what had been estimated to be a sufficient amount to carry out the proposed plans was provided by New York interests.

These plans which were arrived at by the Southern Exploration Company's engineers in conference with the engineer representing the New York interests, included the installation of an additional air compressor, purchase of some additional mine equipment, installation of a drier for concentrates, preparing three old stopes in the Lelan for extraction, clearing and repairing the old Dividend shaft, drifting east on the fifth level of the Lelan to connect with the Dividend, unwater the Dividend and get into the old workings, continue development work in the winze below the fifth level west of the Lelan shaft, develop new ore bodies between the 4th and 5th levels between the Lelan and Dividend, repair and clear the Galena shaft and resume extraction and milling not later than August 1st, 1934.

The New York interest were insistant on starting the mill on this date and although, by working double shift, a considerable part of the proposed work had been accomplished, including the enlargment of the compressor house and the installation of a 700 cu. ft. per minute compressor, very little advance had been made in exploration or development of new ore bodies and only one new ore body and two old partially stoped ore bodies in a very limited area east of the Lelan shaft were prepared for extraction. However, up to the time milling was resumed on Aug. 1, 1934, no anxiety was felt as to tonnage or grade of the ore exposed in these stopes. Milling was started at the rate of 40 tons per day, the ore averaging .33 oz. of gold per ton. While this was considerably lower than the average grade of the ore milled in 1933 it was good enough to show a profit. As the mill was not running to capacity no particular effort was made to improve the grade of the ore by sorting either in the stopes or at the mill. Anything that showed even a trace of sulphides was put through the mill. It was felt certain that as mining progressed, an average grade equal to that of the former mill run would be readily maintained. Instead, these ore bodies showed an unexpected lack of uniformity and

with no other stopes prepared for extraction it became more and more difficult to supply the mill with ore.

The mill was run two months. Only 1825 tons of ore were milled producing 44.1 tons of concentrates with a gold content of 321.92 oz. and net smelter returns amounting to $9,971.28.

With production decreasing from the only stopes that had been prepared, operating l sses were slowly but surely depleting the operating capital. Consequently it was decided to close down operations before incurring indebtedness that could not be liquidated by smelter returns.

An effort was made to provide additional funds to continue the proposed development east of the Dividend by a loan secured by the machinery and equipment. This was recommended by the engineers of the Southern Exploration Co. and the engineer associated with the New York interests. To do this, it would have been necessary to modify the terms of the lease. However, it proved to be impossible to reach an agreement and in view of the circumstances it became necessary, in accordance with the terms of their contract, for the Southern Exploration Co. to return the property to the owners.

SUMMARY OF 1933 and 1934 OPERATIONS:

The judgment of the engineers of the Southern Exploration Company, which was later confirmed by engineers of recognized standing and ability of three other mining companies, in recommending this property, is not questioned.

In the subsequent operation, instead of an extensive exploration and development program, spreading over a large area, prior to starting production, the limited capital and the pressure of some of the larger stock holders for quick returns and to avoid if possible the necessity of raising additional funds, dictated the policy of hurried preparation for extraction and milling of the immediately available ore in the Lelan. In the first operation the adoption of this plan for the development of the property was also considerably influenced by the fact that the buildings and equipment on the property were is usable condition, that the Lelan shaft and a part of the under-

ground workings were open and accessable and that the necessary additional equipment required to modernize and increase the capacity of the mill could be acquired at that time at very low prices.

While a great deal was accomplished with the money spent, the funds provided were inadequate to cover the reguildings of the mill, re-equipping the mine, clearing the old workings and leave a sufficient amount for preparing the old stopes for extraction of the ore remaining in them and fr exploration and development of new ore bodies.

Preparation for extraction, due to the limited funds and the rush to get into production, had been necessarily confined to small and limited areas. In the first operation, to the large stope between the 3rd and 4th level west of the Lelan shaft and in 1934 to the two old stopes and one small new ore body, east of the shaft, between the 3rd and 5th levels. Both in 1933 and 1934 milling was started before the mine had been made ready to take care of anywhere near the capacity of the mill, with the expectation that returns would show sufficient profit to provide a surplus for development and preparation for extraction of other ore bodies.

In 1933 funds had been entirely exhausted by the time production started and it was necessary to borrow operating capital and in 1934 only a sufficient balance had been reserved for one month's operation.

Continuous operation depended not only on maintaining a sufficiently large tonnage of ore from the mine for economical operation but the preparation of new ore bodies for extraction.

Unexpected underground conditions retarded the rate of production and shortage of funds, which had seriously curtailed development before starting production, prevented preparation of new stoping ground for future tonnage to replace that extracted.

The unsuccessful experience of the Southern Exploration Company in no way detracts from the value or possibilities of the property as a whole, especially in view of the present prices of gold and silver. If the first operation in 1933 could have been delayed

until the price of gold had reached $35.00 per oz. and sufficient funds had been available for the development of the ore bodies in the mine, in the meantime, the eventual operation would not only have been more efficient and economical due to greater daily tonnage but the returns would have been considerably more and it is entirely possible that the operation could have been continued. The recovery from the comparatively small tonnage (less than 25 per cent of the capacity of the mill) extracted from two very limited areas in the Lelan, in the seven months operation in 1933 and 1934, at present prices, would have amounted to approximately $40,000.

There is every indication of the continuation of the ore bodies. It was found that the veins, though locally lenticular, were persistant with definite walls and that the lens formations could attain a considerable size. From the extent of the old workings and the balance of the tonnage recovered in 1933 from one of these lenses between the 3rd and 4th levels west of the Lelan shaft, this single lens that reached a thickness of 30 feet must have originally held very close to 5000 tons of ore that would average half an ounce of gold to the ton.

The deepest work in the Lelan is the 40 ft. winze driven from the 5th level west of the shaft. The bottom of this winze, which is 476 ft. below the surface, is in ore as were the old Dividend workings, about 500 ft. to the east at approximately the same level. No workings have gotten below the ore bodies and not only the showings at the greatest depths reached in the Lelan-Dividend group but the actual recovery in other mines in the vicinity at much greater depths are indicative of what may reasonably be expected both in tonnage and grade by deeper development.

The adjoining property, the Little Jessie, has been worked to a depth of 659 ft. and the collar of the shaft is about 200 ft. lower than the collar of the Lelan. Lindgren states that much high grade auriferous pyrite was encountered between the 500 and 600' levels. This would be in a horizon from 200 to 300 ft. below the deepest workings

of the Lelan. The next adjoining property, the McCabe-Gladstone is 600 ft. lower than the Lelan at the surface. The McCabe shaft is 900 ft. deep and the Gladstone 1100 ft.

The extensive permanent improvements made by the Southern Exploration Co. are now a part of the property. The building were repaired and equipped for use where necessary. The compressor house was enlarged and a 700 cu. ft. per minute air compressor installed. The capacity and efficiency of the mill was increased by the installation of up to date equipment, which is in excellent condition, less than 4000 tons having been milled since the mill was rebuilt.

The Lelan shaft was repaired, caved drifts cleared and timbered and connections made between the Lelan and Dividend workings. The Galena, Ticonderoga and Dividend shafts were opened. The road to the property was greatly improved.

This work, all necessary to facilitate further exploration and development, is done.

COSTS AND REQUIREMENTS FOR PROFITABLE OPERATION:

In the consideration of gold mining properties, it must be recognized that the point of view has been considerably altered not only by the increased price of gold but by the greater economy of operation and recovery of values made possible by modern methods of mining and milling.

Even before the price of gold had increased, improvements in methods of recovery were making possible the resumption of operation of old mines that had long been idle and even the profitable working of old dumps and stope fills.

With the price of gold at $35.00 per ounce compared with the old price of $20.67 and actual recovery of values from the sulphide ore of the Lelan 92.4% compared with 60% to 65% by the old methods of amalgamation and table concentration, a much lower grade of ore can be profitably mined and milled than was possible at the old price and with the old methods.

The important factors, in the final analysis, are the grade of ore that will permit profitable operation and the tonnage of that

grade that can be developed.

To arrive at the grade of ore that will permite profitable operation, the factors, are, the costs of mining and milling, the percentage of recovery of values in mill concentrates, and the net smelter returns, which is the value of the concentrates at the point of shipment, as the smelter pays and deducts the freight and deducts treatment and other charges.

For convenience and because the proportion of gold silver and lead are fairly uniform, the net smelter return can be reduced to dollars per ounce of gold content.

Net smelter returns from shipments of concentrates in August and September 1934, when gold was $35.00 per ounce amounted to $9,971.28. The gold content was 321.92 ounces. The net return per ounce of gold content was, therefore, $30.97.

During this period the percentage of recovery of gold values in the concentrates was 92.4.

The estimated cost of mining and milling, based on a minimum production of 1000 tons per month, exclusive of amortization is:

MINING (including development - $1.00)		$3.55
MILLING		1.20
MARKETING		
Freight on Conc't's to El Paso	$17.27	
Smelter treatment	5.00	
Haulage--Mine to Humboldt	.75	
Sacking and Handling	.30	
Representative at smelter	.12	
Per ton of Conc't's	$23.44	
Per ton of crude ore (ratio 25 to 1)		.94
Compensation Insurance		.12
State Taxes		.09
Fire Insurance		.01
UNFORESEEN		.30
TOTAL OPERATING		$6.21

As concentrates are loaded in trucks at the mill for delivery to the smelter and the marketing and treatment etc. has been taken into consideration in Net smelter returns, Deduct. .94

$5.27

This estimate is based on 1000 tons per month from one shaft. The mill can concentrate 75 tons ore more or 2250 tons per month, say 2000 tons per month.

On this basis add $.70 per ton for transportation and other costs, possibly necessitated by operating

more than one mine and $.30 for sacking, handling and loading concentrates. .73

COST PER TON $6.00

Using these figures;

Cost of mining and milling per ton of ore	$6.00
Net smelter returns per oz. of gold recovered.	31.00
Recovery 92.4%	

the grade or gold content per ton of ore, to just equal mining and milling costs would be 0.21 oz. per ton.

$\frac{6}{31} = .1935, \quad \frac{.1935}{92.4} = .21$

From this making allowance for a minimum profit and unforeseen contingencies the economical minimum of grade of ore to be mined and milled should be .3 to .35 oz. per ton, depending on prospective tonnage and distribution of amortization.

MEMO RE: LELAN-DIVIDEND MINE

(By G. M. Colvocoresses)

6/12/35.

The report by Stockder was made in 1916 and has little value at present. I knew Stockder well and he was an excellent engineer, but it is evident that he merely examined the property for the purpose of obtaining a general information for his employers (The American Smelting & Refining Co.) rather than for the purpose of placing any value on the mine or determining whether or not they should consider an investment.

The second report which is not signed brings the situation up to date and gives a certain amount of valuable information, particularly in reference to the occurrence of the pay ore in lenses (which is usual in that section of the state) and in reference to the value of the ore mined in 1933 and 34, and it is very noticeable that during the former year the ore had a recoverable value at present prices of approximately $13.00 per ton whereas in 1934 the recoverable value had decreased to $5.50 per ton, indicating that all of the pay ore in the mine had been taken out in the previous operations.

Since the working costs are given at approximately $6.00 per ton it would seem to me that one should be assured of an average value of $10.00 or $12.00 per ton in order to make the re-opening of this mine attractive.

The report is lacking in several vital respects, principally as follows:

A--No information is given concerning the amount of pay ore blocked out, if any, nor,

B--Concerning the quantity of such ore which might reasonably be developed by additional underground work.

C-- No information is given as to the present mining and milling equipment nor the cost of reconditioning this equipment in order to put in in efficient operation, and I am uncertain as to whether the mining and milling machinery belong to the owners of the property or to the parties who last operated the mine.

D--No information is given as to the cost of additional development which would be necessary in order to block out sufficient ore (assuming this might be found) to permit operations to be resumed in a profitable manner.

E--There is no statement in respect to the terms on which the property could be purchased from the owners and/or other interested parties, nor as to the royalty or percentage of the total purchase price which would have to be added to the operating costs.

Without data on the above essential points it is very difficult to form any worthwhile opinion concerning this property as an investment and I would judge that a thorough investigation of the mine by a competent engineer would involve an expense of approximately $1,000. The statement by Wells and Sparkes must be discounted as having been made by interested parties.

From my personal knowledge of the Lelan-Dividend Mine dating back for over 20 years I believe that it contains substantial bodies of partially developed and expectant ore but whether or not this ore is of sufficient average value to permit profitable operations I am not in a position to say.

G. M. C.

The Lelan-Dividend Group of Mining Claims comprises twenty claims, fourteen of which are patented and six are held by location and possession.

The whole tract covers about 325 acres of mineral lands lying contiguous and in one body, and penetrated by a series or belt of lodes or veins carrying gold and silver located in the Chaparal section of the Big Bug Mining District in Yavapai County, Arizona, and two and one half miles from an operated railroad with good wagon road connection.

The names of the mining claims are the Lelan, Ticonderoga, Dona Anna, Independence, Dividend No. 1, Galena, Juanita, Summit, Clipper, Jump Off, Comstock, Aladin, Peerless, Starlight, and Leland Extension, Contention, Bonanza, Vidette, Bettie and Little Alice.

A surface map of these claims accompanies this statement and is marked "A".

Several thousand feet of development has been done on these claims in shafts, tunnels, drifts, winzes, raises, etc.

Approximately 20,000 tons of dependable ore of the average value of $10.00 per ton is developed, in these claims.

The principal development is done on the Lelan Claim. The shaft is 484 feet in depth of good working size, well timbered, and the underground workings are in good shape, properly timbered and connected for ventilation. There are five stations from which levels are run out on and cutting the ore bodies. Occasional connections between levels are made. The ore bodies are well defined and fairly well opened up. Only

moderate stoping has been done. From the Fourth Level up, the mine is open to inspection and investigation.

The Fifth Level has been under water for four years. It can be unwatered at a small cost, but when so done, preparation should be made for taking care of the shaft and opened ground.

On the Fifth Level in the west drift there is exposed an ore body about six feet in width and 70 feet in length of the average value of $10.00 per ton. A cutting into the hanging wall shows a further ore body of three feet in width of the value of $10.00 and more per ton.

A map marked "B" of the underground development accompanies this statement.

About 180 feet east of the said Lelan shaft, and on the same vein or lode, a shaft, through the eastern end of the ore zone developed by the Lelan shaft, has been sunk to depth of about 700 feet. Heretofore we have not had access to these workings which are now under water. A considerable quantity of ore, in the past, has been mined and taken out through this shaft, but we have no accurate information of the quantity nor the value of the mineral extracted therefrom. However, we are briefly furnished with the following data by what we consider reliable authority, and which may be of some interest on the question of development.

" "All recent work on this shaft has been confined to the Third, Fifth, and Seventh levels, also timbering shaft from Sixth to Seventh Level a distance

of 126 feet.

Work on the Third level, consisting of an upraise of 4 ft. started on hanging wall vein at a distance of 20 feet west of Dividend shaft. Raise connecting with main 300 foot level of Lelan vein.

Fifth Level. This work consists of driving drift west on hanging wall vein 121 feet, which is directly underneath on the same vein of the Fourth level of the Lelan.

We find continuance of ore on that level for 50 feet to face of drift, which shows 48 inches of ore of fairly good values.

Seventh level. East drift consists of work for a distance of 113 feet east in which we have encountered bunches of some very good ore. West drift 136 feet, showing a strong ledge of quartz, in places showing good values.

Cross cutting in foot wall 36 feet, started at a point about 35 feet west of shaft. In my estimation cross cut will cut foot wall ledge at a distance of about 42 feet."

The Ticonderoga claim is developed by a shaft 200 feet deep with levels run at points 55 feet and 200 feet from the collar of the shaft. The accompanying map "C" shows the development done.

We have been furnished the following data by a reputable person who was in charge of the development work during the progress, and which we have no

reason to question.

" First level. 55 feet from surface, West drift having been driven from point 90 feet, west of shaft to point 255 feet, West from 100 to 235 feet, West of shaft, have stoped out considerable ore ranging in values from $60.00 to $65.00 per ton. The face of the drift is about 100 feet, verticle depth, from surface, owing to pitch of ground.

200 foot level. West drift has been continued to 702 feet west of shaft, having two good ore shoots, one beginning at a point 150 feet west of shaft, 60 feet in length which is stoped about 80 feet high. Back of stope now showing 18 inches of ore, average value $40.00 per ton. The other shoot beginning at a point 250 feet west of shaft and about 100 feet in length, and stoped to a height of 35 feet, but I feel satisfied we are at the top of a good ore shoot.

Cross cut has been started from a point 178 feet west of shaft in a southerly direction, from point of starting to face of same is 327 feet. In driving cross cut we encountered three separate veins. The first one has not been developed. The second vein encountered 125 feet from starting point, is developed by drift to west 21 feet, drift to east 80 feet, also raise in east drift 20 feet, showing good values.

The third vein encountered 180 feet from point of starting, which has been drifted on west to a distance of 235 feet with raise of 15 feet, which shows

quartz containing a value of $20.00."

The shaft is in low ground and is filled with water. We have had no opportunity to verify this information.

Considerable development has been done in clains on other veins penetrating this group which will be better understood by a personal inspection on the ground, and this observation applies to the improvements upon the surface, operating equipment, etc., pertaining to the whole group.

So far as ascertained the general character of the ores of the veins in this group appear to be about the same, and is typically an amalgamating and concentrating ore. Concentrates made as a product after amalgamation, have a gold value of from four to five ounces per ton.

A ten stamp mill with concentration table was built to try out the milling qualities of the ore in the Lelan Mine. A test run was made on ore taken principally from all parts of the mine, including the accumulated ore extracted in sinking shaft, running levels and other development work, gave the following returns.

Quantity of ore milled, 1600 tons. Value recovered:

1st. By Amalgamation, as per mint certificate, Gold $13,394.68, Silver $168.03, Total Bullion $13,562.71

2nd. By Concentration, as per Smelter certificate:

No. 1	27.122 tons at $103.30 per ton	$2,801.79	all Au + Ag
No. 2	22.016 tons at $ 98.39 per ton	2,166.15	Fe pyrites

Making total recovery of $18,530.56.

E. W. Wells

Prescott, Arizona,

November 20, 1915.

Frw Irvine Bolke

Extra Copy

6/12/35 by S. McC. copied

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Copied

BRIEF REVIEW OF THE LELAN-DIVIDEND MINE, by T. J. Sparkes.

The data comprising this review of the Lelan-Dividend mine is, in the main, extractions from records and reports now in the possession of the owners of the property.

The writer made a preliminary examination of the Lelan Mine in 1906; and, again in September, 1923, of the surface and of general conditions.

CLAIMS AND LOCATION: The Lelan-Dividend Company's properties comprise twenty (20) fractions included, contiguous mining claims, fourteen (14) of which are patented, embracing an area of 323 acres; also a valuable water right and mill site adjacent to the Humboldt smelter.

The property is situated in the Big Bug Mining District, Yavapai County, Arizona, about twelve (12) miles southeast from Prescott, six (6) miles west from Humboldt, four (4) miles from Huron, and 2¼ miles from Eugenia Siding on the Santa Fe railroad.

Elevation at mine is 5,500'; Humboldt, 4,500'. The Arizona Power Company's line passes over the property.

HISTORY: The claims included in the group were located in the early 60's and were worked intermittently up to practically the present period; the first ore mined was hauled by ox teams to a small custom mill several miles distant from the claims and in later years two small old style stamp mills were erected upon the properties and were successfully operated for many years, treating the high-grade ores mined from the several properties which are now embraced in the Lelan-Dividend group.

In 1916, the various interests comprising the present group were consolidated by Judge Ed. W. Wells and a company formed known as the "Lelan-Dividend."

GEOLOGY: The property, covering a large mineral area, is characterized by prominent quartz out-croppings of numerous veins; the main veins are known as the Galena, Lelan-Dividend, Independence, Ticonderoga, and the Union.

These veins have a lateral extent of several thousand feet; strike slight N. W., and S. E., with steep dip to South. They vary in width from two (2) feet to ten (10) feet and will average about five (5) feet.

Their out-crops occur in, and at the east contact of a narrow belt of sericite schist which is closely pressed by quartz diorite on the east, against Bradshaw granite on the West, basic dikes of diabase and diorite traverse and conform to the strike and dip of all of the veins.

The ore bodies occur between well defined foot and hanging walls, in shoots of irregular form, as in the form of a series of lenses, overlapping, or lie alongside of each other, being separated by schistose, sericitic gangue material.

Gold-bearing iron sulphides are distributed through the quartz, very small quantities of lead and zinc sulphides are also present.

The oxidized zone reaches to about 150'; present water level 250 ft.

Ore shoots up to 300' lateral alternate with barren schistose zone, but they are strong and continuous downward with a N. W. rake.

LELAN, ORE TONNAGE AND VALUES: In the Lelan the ore shoots have been followed to the 461' level; the rock in this level shows more sulphides and better values than the upper ores.

One hundred and seventy-five (175) mine samples taken during development of the Lelan gives an average of .63 oz. Au., p.t. ($12.60 p.t.)

1,600 tons of average ore from various levels of the mine, milled in the Lelan stamp mill gave the following results:

Bullion by amalgamation ----------$13,562.30
Concentrates ---------- 4,900.00
Net total ----------$18,462.30, giving an average of $11.54 p.t.

This saving by the methods used could not have exceeded 80% of the values.

"Silicious Ores" under contract to run 90% Si 02 were shipped as follows:

1911 - Humboldt ----- 1,400 tons .41 oz. Au., .05 oz Ag., 91.1 Si 02
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461'	"	W.,	"	"	120' x 100' - 6'	"	5,538	"
							28,909	tons
					Less ore extracted ----		7,000	"
					TOTAL AVAILABLE ORE ----------		21,909	tons

21,909 tons at $12.00 per ton gives a gross total value of $262,908.00

The most prominent other veinsknown as the Union, Independence, Ticonderoga and Galena are strong and well defined, closely paralleling the Lelan-Dividend vein and have the same general mineral characteristics.

Considerable work has been performed upon these veins, but there are no authentic records available as to ore tonnages and values, yet it is commonly known that a large tonnage of both milling and shipping ore was mined in past years from these properties.

The possibilities throughout the veins compare most favorably with that of the Lelan.

SUMMARY: While, as first stated, the data herein contained (on account of the present inaccessibility of the workings) is compiled largely from old records and reports, the same is of such a positive nature, that it warrants due credence.

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Present equipment, including electric-driven mine machinery, shop, tools, houses, etc., are all in good condition, ready for immediate use. The mine equipment is of sufficient size to develop the property fully.

After the main shaft and lower levels have been rehabilitated, at a maximum cost of $15,000, the main shaft should be sunk another 200'; drift west along the vein and cross cuts run, as it is highly probable by cross-cutting, the other main veins will be encountered within a short distance, also

there are other possibilities throughout this area; in fact it is the writer's opinion the heart of the mine and where the "real ore bodies" lie, is approximately 700 feet west from the Lelan shaft. The property has unquestioned merit and proper development should prove it a profitable mine.

T. J. Sparkes.

Prescott Ariz. Sept 22/23

Lelan Lleirdand

near

Humboldt

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(signed) T. J. Sparkes.

Prescott, Arizona - Sept. 22/23

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NOTES ON PRELIMINARY EXAMINATION OF THE
LELAN-DIVIDEND GROUP OF MINES, YAVAPAI COUNTY, ARIZ.

GENERAL DESCRIPTION

The Lelan-Dividend Group comprises 20 contiguous claims; 14 of these are patented.

The Group is situated about 12 miles southeast of Prescott on the headwaters of Galena and Ticonderoga Gulch, Yavapai County, Arizona. The camp lies at an altitude of 5500 ft; it is connected by a five mile wagon road with Humboldt (elevation 4500') on the Prescott Line, in Agua Fria Valley, another four mile down grade road leads to Huron Station, south of Humboldt, on the same railroad. The main transmission line of the Arizona Power Co. passes over the property; the Lelan Hoist is connected therewith.

GEOLOGY AND MINERALIZATION

The Group covers a large mineral area, approximately 325 acres, characterized by prominent quartz outcroppings of four main veins, the Galena, the Lelan-Dividend-Independence, the Ticonderoga, and the Union Vein, as well as by several other less pronounced quartz croppings in the western portion of the Group. The main veins, which have a lateral extent of several thousand feet, converge in southwesterly direct on toward each other, in the western half of Galena, Claim, and all of them dip more or less steeply to the south.

The average width of the main veins is about five feet, they vary two to ten feet. Their outcrop occurs in, and at the east contact of, a narrow belt of the sericite schist formation, which have is wedged or closely pressed by quartz diorite on the east, against massive Bradshaw granite on the west. Several narrow basic dikes traverse schist and quartz diorite alike, conforming in strike to the trend of the veins. Geologically, the group presents rather complex but interesting features and considerable field and exploration work remains to be done, to clear up details sufficiently so as to form positive conclusions regarding the value of the group.

There is a great similarity, not only between the different veincroppings, but also in respect to the vein contents and mineraliza-

tion underground. The ore bodies occur between well defined foot and hanging wall in shoots of irregular form, or in the form of a series of lenses which overlap each other, or lie alongside of eachhother, being separated by schistose, sericitic gangue material. Gold bearing iron sulphides are irregularly distributed through the quartz lenses, and very small amounts of lead and zinc sulphides are also present.

THE LELAN MINE

The ore shoots, which are up to 300 ft. lateral extent, alternate with barren schistose zones, but they are continuous in their downward northwest pitch. On the Lelan, which is in operation and open for inspection to the 400 ft. level, they have been followed from the surface down to the 500 ft. level. Oxidation has proceeded to about 100 ft. below the surface. The water level stands at about 350 ft. in the Lelan. The cementation zone between these horizons shows some local enrichment of the sulphides.

The average value of the Lelan ores, according to 175 mine samples, taken during the course of development, is .63 ozs. Au p. t My own sampling in the open workings is indicated by Nos. 1073-1078 on attached assay plan and section. 1600 tons of average mine ore from various levels are milled several years ago in the Lelan 10 stamp mill, with a recovery of

Bullion by amalgamation-------$13,562.30 or $8.48 per ton
49 tons concentrates 4,900.00 or 3.06 per ton.

The Lelan shipped also the following amounts of 90% Si02 ore under contract to neighboring smelters.

In 1911 to Humboldt 1,400 tons, .41 oz. Au, 0.5 oz. Ag, 91.1 Si02
In 1911 to Jerome 3,000 tons, .35 " " 0.5 " " 89.1 "
3% Fe, 0.2 Pb, 1.5 S.

In 1914 there were shipped seven tons smelting ore of 2. oz. Au. p. t.

Attached hereto is sketch of plan and section of Lelan workings

HISTORY AND OPERATION

The claims were located a number of years ago. From 1900, 1909, a part of the group was operated by the Dividend Gold Mining Co. who accomplished most of the development work on the Galena, Dividend, Ticonderoga, until litigation ensued with Lelan, which finally resulted in consolidating the individual enterprises into the present boundaries of the Lelan Dividend Group , now controlled and largely owned by

Judge B. W. Wells, of Prescott, Arizona, At present, a crew of about ten men is employed, prospecting on the lower levels of the Lelan Mine. The owner fully realizes that it is beyond his province to inaugurate a mining and milling enterprise on a scale large enough to insure successful results, and he therefore prefers to sell the group at a price of $200,000.00

SUMMARY:

On the whole, the district has impressed me rather favorably I believe that it has merit and warrants further investigation.

THE OLDER WORKINGS: On the Galena-Dividend- Ticonderoga veins were found to be inaccessible, most of them being under water. Attached hereto, are sketches of the extent of prospecting done, according to reliable sources. Two small stamp mills which are now out of commission have operated intermittently on the output of the mines.

THE GALENA SHAFT is 300 feet deep, following a quartz orebody from 30" to 60" wide, the bottom of shaft is said to contain 10" of $4.50 ozs. Au ore. The ground above the 65 ft. level has largely been stoped, the face is 240 ft. west of shaft and said to contain 40" of ore of 1.50 ozs. Au. p. t.

The 165 ft. level extends 140 ft. east on 24" of gold-bearing quartz.

The 265 level extends 370 ft. west on 48" low grade gold bearing quartz.

The croppings of the vein are large; they extend for about 500 ft. west of shaft, and can be traced throughout the Dividend Ground on the east. The Lelan crew is engaged at present in crosscutttin from their 400 ft. level towards the Galena Vein, a distance of approximately 400 ft. The collar of Galena Shaft is 35 ftl below Lelan Shaft.

THE DIVIDEND SHAFT has reached a depth of 700 ft. The outcrop of vein is 24" wide. On the 300 ft. level, it is said to be 10 ft. wide, containing shipping and milling ore. On the 5th level, it is 48" wide, with fairly good values, 250 ft. of work has been done on 7th level east and west on strong quartz vein, with fairly good values and bunches of some very good ore.

A little stoping has been done. During a seventeen months

period, in 1900 and 1901.

there were treated in the Dividend 5 stamp mill a total of

665 tons of ore with a recovery of

Bullion, by Amalgamation	$22,919.32	or $34.46 p. t.
by Concentration	3,748.74	or 5.64 p. t.
	$26,668.06	$40.10

THE TICONDEROGA SHAFT is 200 ft. deep. The 55 foot level extends on vein 255 feet west, with considerable stoping on good ore.

The 200 ft. level extends 702 ft. west, with two stopes, one 60 ft. long by 80 ft. high, said to show 18" of 2.00 oz. Au in back; the other 100' long by 35' high. At 327 ft. a crosscut south was run from bottom level for the purpose of intersecting the Dividend and Galena Veins. It appeared that two branches of the Dividend were cut, and several hundred feet of drifting was done on ore containing good values, up to 1.00 oz. Au. per ton . The Ticonderoga Shaft is approximately 300' below the Delan Dividend Shaft, and also more centrally located for advantageous prospecting.

THE INDEPENDENCE VEIN shows very large croppings, from four to fifteen feet wide. It is prospected by two shafts 50 ft. and 90' deep, respectively, The Jones Tunnel, at320 feet from protal, intersects the vein about 100' below the surface and a drift of 95 ft. east was run on quartz which contains fairly good values.

THE UNION VEIN is prospected by several shallow shafts in the east portion of Dona Anna Claim. The croppings are large and persistent. especially on the adjoining Union Claim, where mining and 5 stamp milling operations have been successfully carried on for about 15 years. The ore shoot is 500' long and extends from surface down to Union Tunnell, a distance of 185'. Most of the ground above the tunnel is stoped, and very little prospecting has been done below. The vein averages about five feet in width and is accompanied by a basic dike.

Respectfully submitted

Sgd. Max Stockder

Tucson, Arizona Feb. 29, 1916.