

Independent Quicksilver Mine

Mercury

NAME

OLD NAMES

PRINCIPAL ORE

MINOR MINERALS

14 S

20 E

17-20-21

PUBLISHED REFERENCES

T

R

S

Bull 4. page 99

Crook

COUNTY

Ochoco

AREA

5700

ELEVATION

Hi-way 28 from Prineville for

28 miles. (. miles. Forest road ROAD OR HIGHWAY

MISCELLANEOUS RECORDS

37 miles to Prineville

DISTANCE TO SHIPPING POINT

PRESENT LEGAL OWNER (S) .. Independent Quicksilver Co..

George Drais, Secy

Address

625 PARK BLDG. PORTLAND, ORE

~~718 Swatland Bldg. Portland, Oregon~~

OPERATOR

Name of claims

Area

Pat.

Unpat.

22 lode claims

(named in Geo Hogg report)

Name of claims

Area

Pat.

Unpat.

EQUIPMENT ON PROPERTY

This report must be properly executed and filed with the Corporation Commissioner on or before July 1, 1930, in order to entitle a corporation mining for any of the precious metals, coal, or prospecting or operating for oil, or operating an oil well, to pay a license fee of only \$10. If not so filed, such corporation must pay the same license fees as are required to be paid by other corporations for gain.—Section 6390, Oregon Laws.

Annual Report to the Corporation Department

FOR THE YEAR ENDING JUNE 30, ~~1930~~ 1937

Of THE INDEPENDENT QUICK SILVER COMPANY
(Give legal name in full)

a corporation organized and existing under and pursuant to the laws of the State of Oregon.

The location of its principal office is at No. 2104 N.E. 37th Ave. Street,
in the city of Portland, in the state of Oregon.

The names and addresses of principal officers, with the postoffice address of each, are as follows:

NAMES	OFFICE	BUSINESS ADDRESS
<u>Wm. Cavanagh</u>	<u>President</u>	<u>Medical Arts Bldg., Portland, Oregon</u>
<u>Geo. J. Dreis</u>	<u>Secretary</u>	<u>2104 NE 37th Ave. do</u>
	<u>Treasurer</u>	<u>do</u>

The date of the annual election of officers is 2d Monday in February

The date of the annual election of directors is do

	Common With Par Value	Common No Par Value	Preferred
Amount of authorized capital stock	<u>\$50,000.00</u>	<u>Shares</u>	<u>\$</u>
Number of shares of authorized capital stock	<u>50,000</u>		
Par value of each share	<u>\$1.00</u>	<u>xxxxxx</u>	<u>\$</u>
Amount of capital stock subscribed	<u>\$48,177.00</u>	<u>Shares</u>	<u>\$</u>
Amount of capital stock issued	<u>\$48,177.00</u>	<u>Shares</u>	<u>\$</u>
Amount of capital stock paid up	<u>\$48,177.00</u>	<u>Shares</u>	<u>\$</u>
Price at which no par value stock issued	<u>xxxxxx</u>	<u>\$</u>	<u>xxxxxx</u>

State amount of capital, represented by stock of no par value, with which
the corporation began business \$ 0

Total amount of its properties in Oregon (name of claims, lodes, or placers) 22 claims: Happy Chance, Prospect, Crystal, Pioneer, Ruby, Bonanza, Zero, Grub Stake, Good Luck, New Era, Lost Claim, Greenback, Columbia, Eastern Star, Cosmopolitan, Princess, Commodore, Aetna, Ajax, Aztec, Cornicopia, Jewel - in Crook County, Oregon

The location of its properties Ochoco Natl. Forest, Lookout Mountain

The amount of work done thereon and improvements made thereon since the time of filing
last report Corporation spent and indebted for \$1824.88, year 1936 to 7/1/37

The amount of output or products of the mines or wells of such corporation from January 1,
¹⁹³⁶ 1929, to December 31, ¹⁹³⁶ 1936, inclusive, None

The value of output or products of the mines or wells of such corporation from January 1,
¹⁹³⁶ 1929, to December 31, ¹⁹³⁶ 1936, \$ None

IN WITNESS WHEREOF, I, Geo. J. Dreis, Sec. - Treas.

of said corporation, have signed this report, this

[CORPORATE SEAL]

28th day of June, A. D. 1937.

(signed) Geo. J. Dreis

STATE OF OREGON,

County of _____ } ss.

I, _____

LOCATION, ACREAGE AND CLIMATE

The Independent Quicksilver Company's property consists of 22 lode mineral claims, held by location, situated in Sec. 17, 20 and 21, T. 14 S, R 20 E. Willamette Meridian, Ochoco Mining District, Ochoco National Forest Reserve, Lookout Mountain, Crook County, Oregon. The mineral holdings consist of the following lode claims, and are shown on Plate I:

Princess	Eastern Star
Commodore	Greenback
Bonanza	Happy Chance
Zero	Grub Stake
Cornucopia	Aztec
Jewel	Crystal
Ajax	Ruby
Good Luck	Pioneer
New Era	Prospect
Lost Mine	Aetna
Cosmopolitan	Columbia

These claims, comprising approximately 440 acres, adjoin the Mother Lode Mine Claims on the north, and are located in the northwest portion of the Round Mountain Quadrangle on the steep rugged north slope of Lookout Mountain at an approximate elevation of 5700 to 5200 feet above sea level, about three miles north of Lookout Mountain Forest Ranger's Observation Station.

Prineville, a town of about three thousand inhabitants, on the City of Prineville railroad, a connecting branch line to the

Southern Pacific's main line at Redmond, nineteen miles distant, is the nearest railroad point and postoffice thirty-seven miles west of the property.

The property is reached from Prineville over the Prineville-Mitchell Highway No. 28 by means of automobile or motor truck to the Ochoco Forest Rangers' Station and CCC Camp, a distance of twenty-eight miles, thence over an easy grade, good Forest-Service road, a distance of nine miles, the last mile of which the grade is quite steep. This road is and can be negotiated the entire year if the snow is kept plowed off during the winter months.

The climate is delightful in summer and fall, days are warm and nights cool, the winters are not too severe, the temperature ranging this year (1939-40) from 36 degrees above zero to zero for the months of November, December, January and February.

Rainfall is limited in the summer months, there being frequent rains during the early spring and occasional rain in early fall.

The first snow generally falls around the first of October but does not last long. Snowfall is more or less excessive and comes to stay about December fifteenth. It lies on the ground until about April fifteenth, except in drifts, where it lasts until May fifteenth or later. The depth of snow this year was three and a half feet. This is a lighter fall than normal; however, it is believed that substantial operations can be carried on continuously the entire year with only minor handicap on account of snow and cold weather.

The present mine camp consists of two (fully equipped, running water, etc.) 15' x 30' cabins, which can accommodate ten men. One of these cabins at the present time is used for a mess-hall, in conjunction with sleeping quarters; also, there are several sheds and

a 15' x 8' workshop.

Abundant water for domestic purposes is available at the present mine campsite from springs on the property. Additional water necessary to operate a reduction plant can be easily developed from these springs (which are amply protected by water rights) and seepage from mine workings. Also, sufficient water can be developed on either Canyon or Johnson Creeks to install a small power plant to generate electricity for power and lights for mine and plant operations as well as camp purposes, if thought desirable.

GEOLOGY AND ORE GENESIS

The Independent Quicksilver Company's property is located in the northwest portion of the Round Mountain Quadrangle and, since the geology of this district has been so ably and graphically described by W. D. Wilkinson in the State of Oregon Department of Geology and Mineral Industries' recently published bulletin (a copy of which is hereto attached to this report), no attempt will be made to go into the geology of the district other than to bring about the significance of the salient points which are pertinent to the Company's holdings.

Quicksilver occurrences are definitely associated with volcanism.

The geologic history of the region is one of volcanic origin, beginning with the Clarno formation (basalts and andesites) of the Eocene, in which the cinnabar deposits of the district most uniformly occur, and continuing until late Pliocene or early Pleistocene period.

This volcanic activity produced stresses and strains, causing the faults and folds found in the older formation, and resulted in a wide variety of igneous rocks being distributed throughout the district. Intrusive rocks are not uncommon since the older formations are cut by dikes and plugs of younger rocks.

One of the major zones of mineralization of the district extends from the base of Lookout Mountain, approximately N 60 degrees E to Johnson Creek, traversing the Mother Lode, Independent, Devilsfood, Homestake, Mercury, Number I, Central Oregon and Wesserling properties.

In this zone there are a series of faults striking approximately N 62 degrees E, N 45 degrees E, N 20 degrees E and N 10 degrees E. Movement along these faults produced shear zones along which mineralization is concentrated at these fault intersections and in the gouge oc-

curing at these intersections.

In the early Tertiary period, the intrusions, closely following the Clarno lavas, were heavily charged with mineralized solutions, which, under favorable conditions, resulted in the precipitation of cinnabar in the Clarno formation.

The mineralization encountered to date at the Independent Quicksilver Company's property appears to be in the Clarno andesites. The few places that basalt has been observed, the andesite has been so tightly fused with the basalt that the point of contact has been hard to determine, thus permitting no chance for mineralization along this contact, and indicating that only a short period of time elapsed between the two lava flows.

The most important fracturing of the older country rock is along a line approximately N 62 degrees E. These fractures occur in a parallel series, spaced from a few feet to hundreds of feet apart. For the most part they are filled with igneous material and can be termed dikes. These dikes are andesite and can be distinguished from the older country rock through which they penetrated as they are more crystalline. In width they vary from a few inches to a hundred feet or more.

There seems to be contact metamorphism, for beyond the walls of the dike for many feet the andesite country rock is considerably altered, the original components of which it was composed have been altered chemically, by the heat from the intruding material of the dike and other agencies. The altered andesite near the dike walls by reason of this alteration is, therefore, susceptible for mineral impregnation or for leaching by acid solutions, and the consequent replacement of basic material by mineral held in the attacking solutions.

Had there been no further activity in the district by chemical or igneous agencies no ore bodies would have been formed. Later, however, in the early Tertiary period, the crust of the earth surface was again broken along an axis north and south (approximately N 10 degrees E). These fissures are represented by dikes running north and south. It is very probable that these north and south fractures are the channels through which quicksilver minerals in vapor or solution sought to reach the surface from a deep seated source. Where these fissures are filled with intruded lavas, there is evidence of contact metamorphism along the walls of the dike extending a few to many feet into the country rock, gradually fading out into unaltered materials as distances increase from the dike. The evidence seems to indicate that aqueous solutions carrying quicksilver rising through North and South vents, impregnated the altered andesite adjacent to the dikes and where these dikes intersected other dikes running N 62 E, and solutions worked along their walls impregnating the altered andesite country rock.

NEIGHBORING PROPERTIES

The MOTHER LODE Mine, which adjoins the Independent Quicksilver Company's property on the south, was located as early as 1906. It was upon this property that the first discovery of quicksilver was made in the Ochoco District. The mine has been operated by several different companies, and has been known as the American Almedan, Consolidated Quicksilver, Gram Incorporated, and is now being operated by the Champion Mining Company.

The development at the property consists of several old tunnels, the Gram Swamp, Champion and Adit tunnels and cross-cuts, drifts, raises and stopes off these tunnels, all of which are now caved. Tunnel No. 4 and the workings of this tunnel, most of which were driven during operations by the Gram Incorporated Company, are still open and accessible. In all an excess of 5,000 feet of development work has been performed on the property, and approximately 5,000 tons of ore mined, from which possibly 500 flasks of quicksilver has been recovered.

During the regime of the Consolidated Quicksilver Company, under this name it is described in U. S. G. S. Bulletin 846A, what is known as the Swamp and Champion veins were discovered and opened up by the Champion and Adit tunnels, and it is from these veins that the major portion of the ore to date has been mined.

The deposition of the ore in the Champion vein or mineralized zone is mostly in the nature of stock work; seamlets of high-grade cinnabar from the thickness of a knife blade to one or two inches or more, at various intervals, in places closely associated and at others one to two feet apart, occurring along and in fractures approximately N 10° to 20° E, in the highly oxidized andesites in the upper workings

and on the Adit and No. 4 tunnel levels in the hard unaltered Clarno andesites.

The Swamp vein more or less parallel and 100 feet East of the Champion vein is a highly altered clay gouge; in fractures in the altered andesite country rock, the cinnabar occurring in concentrated bunches, impregnated in the gouge in places and as small seamlets in others. Both of these veins or mineralized zone extend to and traverse the Independent Quicksilver Company's holdings.

During the operations of the Consolidated Quicksilver Company, the Champion vein was mined from the Adit tunnel level to the surface, the width of the commercial ore varied but averaged about one set wide, and while some of the ore was high grade, 25 pounds or better, the average was about 10 pounds per ton.

The Swamp vein was mined from the Swamp tunnel to the surface, an approximate distance of 15 feet and from the Adit tunnel, 150 feet below the Swamp tunnel to 5 or 6 sets above said tunnel, when the stope was lost by a cave. This vein varied in width from two to fourteen feet, and in value from 2 to 30 pounds per ton (200 tons of which averaged 25 pounds per ton). However, the bulk of the tonnage mined before the stope caved in 1930, was of considerable lower grade.

When the Cram Incorporated took over the property, tunnel No. 4 (which has been started before the Consolidated Quicksilver Company discontinued operations in 1951) was continued and encountered the Champion vein on this level, 105 feet below the Adit tunnel, 431 feet from the portal of the tunnel. Stopping operations were subsequently started, one of which reached a height of six sets above the tunnel level when it caved, being 8 sets in length and one to two sets wide on the first floor. Some high grade was encountered in this stope,

as is evidenced by ore of such grade being left along the hanging wall of the vein on the sill floor of the stope. The ore mined from this level was treated in the 15 ton Gould Rotary Furnace on the property, then as now, located below tunnel No. 4. No record is available as to the tonnage treated but judging from the slag dump and the stope maps believe in excess of 2,000 tons must have been mined. Reliable source informs me that more than 150 flasks of quicksilver were produced from the ore treated.

During the operations of both the Consolidated Quicksilver and Cram Incorporated companies, the reduction plant was very inefficient and doubt exists if more than 50% of the values in the ore were recovered.

In the spring of 1939, the Champion Mining Company took over the property and opened up both the Champion and the Swamp veins on the surface, several hundred feet north of the workings by previous companies, by dozer excavations to depth of 10 to 15 feet below the surface. Subsequently, a series of tunnels were driven to cut the veins exposed in the surface cuts, first 20 to 30 feet below the dozer excavations and then alternately, 20 to 30 feet below each successive tunnel. Very favorable results have been obtained to date in most instances by this procedure. Ore of as high grade as 40 pounds has been mined. However, Mr. Champion advises me that the ore treated in the reduction plant averages 15 pounds to the ton.

Tunnel No. 4, which was caved in a few places, was cleaned out and retimbered, and the tunnel was being advanced to get beneath the good ore encountered in the old Adit tunnel in the Swamp vein. The property is equipped with a 15 ton Gould Rotary Furnace, having cast-iron and tile pipe condenser. It is operated by a 15 HP Fairbank

Morse engine. The plant, which was very inefficient, was remodeled under Mr. Champion's supervision, a sirocco dust precipitator and an additional tile condenser were installed so that the plant now operates very efficiently.

Production the first of the year 1940 was at the rate of 2 flasks per day. This property should become a steady producer of quicksilver.

The Devil's Food Mine is a prospect, located on Johnson Creek about one mile northeast of the Independent Quicksilver Company's holdings.

The workings consist of a drift and cross-cut 150 feet, and 35 feet in length, respectively. A raise has been driven on the vein from the drift to the surface, a distance of 50 feet.

The vein occurs in and along a fault zone or fracture, which varies from 2 to 3 feet in width, striking approximately N eighty degrees E and dipping 70 degrees to 78 degrees South. The fault zone passes through both the coarse conglomerate and the fairly coarse grained basaltic country rock. Ore is found in both. The owner, W. Endicott, reports some ore of a very good grade has been encountered.

The Homestake Mercury Mine, which has been known as the Paulsen and Sayler, International Incorporated and Johnson Creek Mine, was located by W. Wesserling in 1929, and is located on Johnson Creek about 1½ miles northeast of the Independent Quicksilver Company's property.

The development consists of a glory-hole, open cuts, three tunnels, 125, 150 and 300 feet in length, respectively; and a shaft or winze sunk on the vein from the 300 foot tunnel to a depth of about 20 feet. A sample was taken by the writer at the bottom of the winze in 1931, which assayed 40.6 pounds per ton. All of the above mentioned

workings are now caved and inaccessible.

The winze or shaft and old caved workings were for the most part driven along one of the major fault fractures of the district, trending N 62 degrees E and the ore occurs along fault fractures and fissures on both the hanging and the foot walls of the vein in a highly altered andesite or maybe rhyolite of the Clarno formation.

Some high grade and considerable ore of a very good grade was mined in 1930 and treated in a small 2- or 3-ton experimental external fired vertical furnace. This furnace proved a dismal failure, only 17 flasks being recovered from several hundred tons of ore treated. In 1931, 8 large D retorts were installed and operated during 1931-32, and with them, the production was brought up to 250 flasks.

Since 1933 there has been no production, though a cross-cut tunnel is now being driven in a coarse grained basaltic rock, which shows no mineralization and little or no alteration, to cut the ore encountered in the winze, 80 feet below the bottom of the winze.

This mine has made a good showing for the amount of development performed. If amply financed and efficiently managed, this prospect should make a mine.

The Number One Mine is located about two miles northeast of the Independent Quicksilver Company's property, and adjoins the Homestake Mercury Mine on the east.

The development consists of a shaft 100 feet deep and several hundred feet of drifts and cross-cuts off this shaft at different levels. Considerable ore of good grade is reported to have been mined from this development. The ore was treated in a D retort with which the mine is equipped. About 50 flasks of quicksilver were recovered. These workings are now inaccessible, due to the fact that the shaft and workings are filled with water.

Recent work consists of a cross-cut tunnel cutting the major

fault zone, trending N 60 degrees to 65 degrees E dipping 70 degrees S and a drift along this fault zone, in all about 300 feet of exploratory work. Ore of a good grade was found in places in the drift, particularly where the major fault was intersected by cross fractures trending N 12 degrees E. Also, a portion of the company's holdings have been prospected by core-drill holes, the number of which and the grade of ore encountered are not known. It has been reported that the results of this work were very satisfactory. No operations are being carried on at this property at the present.

The Blue Ridge mine, discovered by W. Wasserling, is located about $2\frac{1}{2}$ miles northeast of the Independent Quicksilver Company's holdings, and adjoins the Number One Mine on the West.

This property was formerly known as the Blue Ridge Mercury Company, Western Resources Incorporated, and at present the Central Oregon Quicksilver Company.

The development at the property consists of a large open cut, 100 feet or more in length, which is now partly filled with water and surface sluff, from which the ore was mined by a steam shovel during the first operations at the property. The ore occurred in a highly altered clay gouge in the altered andesite country rock. It is of much the same character ore as that which occurs in the Swamp vein at the Mother Lode about three miles southwest of this mine.

This vein is most likely in the same major fault fracture N 62 degrees E of the district as the Mother Lode, Independent Quicksilver, Johnson Creek, and Number one mines' deposits occur. Operations were discontinued for a period, and later a shaft was sunk to the 100 foot level, and several hundred feet of drifts have been driven. Mining

operations are now being carried on underground. It has been reported that very high grade ore has been encountered.

The first ore was treated in a 4 x 40 Allis Chalmers Rotary kiln, fed by a screw-feeder and driven by a 20 HP Fairbanks Morse oil engine. Owing possibly to a too small cyclone dust precipitator and a very skimpy and inadequate tile pipe-condenser, the results were very unsatisfactory. Later two ten-pipe banks of retorts were installed, and the ore now mined is treated in one series of these retorts. Production in the early part of last December was at the rate of one flask per day.

The Wesserling Prospect lies in a flat on Johnson Creek, a short distance southeast of the Blue Ridge Mine. No underground work has been performed, but the occurrence of cinnabar on the property has been traced in a northeast-southwest direction by panning and drilling. Mr. Wesserling reports the cinnabar showing, thus obtained, very good.

The above described properties all lie in the major fault fracture trending N 82 degrees E in the Clarno formation, from which the production (850 to 1,000 flasks) to date has been gained.

The Independent Quicksilver Company's property lies in the south central portion of this productive zone.

Numerous other properties in the district are described in the State of Oregon Department of Geology and Mineral Industries' Bulletin, hereto attached.

HISTORY AND DEVELOPMENT

In 1929 Richards and Conlin located ten claims which adjoin the Mother Lode Mine on the north, and in 1930 the Independent Quicksilver Company took over their holdings, and subsequently have added to them by location; so that at present, the holdings consist of twenty-two claims and substantial water rights.

Prior to the location of these claims by Richards and Conlin, and the Independent Quicksilver Company, some of the claims were evidently previously located, as is evidenced by old tunnels, pits and cuts, which are now caved and filled, thus making inspection or examination impossible for this report.

In 1931, the Company carried on an extensive campaign of development, which consisted of numerous surface cuts, pits and trenches on many of the Company's claims, all of which are now either entirely or partly filled and caved. The report states that ore of a low grade was encountered in places. Also a tunnel was started on the Greenback Claim, the location of which is designated on Plate 1. This tunnel was subsequently continued in the succeeding years, until 1936, when it was discontinued, being 204 feet in length. This tunnel was started and has been driven for most of its length in a slightly altered to unaltered andesite of the Clarno variety, and three veins of 2, 4 and 1 feet width, 36, 76, 126 feet from the portal of the tunnel, respectively, were encountered, samples from all of which assayed by the Oregon State Department of Geology and Mineral Industries showed trace of cinnabar. These veins will be prospected in depth with the Calox drill owned by the Company at a future date.

The face of the tunnel is a hard black basalt, the contact

of which with the unaltered andesite occurred 187 feet from the portal of the tunnel.

In 1937, the Company decided to diamond drill their holdings by angle or cross-cut holes, with the idea of determining the mineralized area.

A contract was let to Jantsen Bros., of Beaverton, and seven holes (5 on the Bonanza and 2 on the Zero) for a total footage of 831 feet were drilled. The greatest vertical depth obtained was 148.3 ft. The records show commercial ore of low grade was encountered in two holes.

In 1938, the Company purchased an Ingersoll Rand Calox drill. Four shallow holes, the location of which are shown on Plate 1, 38, 35, 31, and 92 feet in depth, respectively, for a total depth of 196 feet were drilled. The greatest vertical depth obtained was 55.0 feet. Commercial ore of low grade in two of the holes is on record in the logs. This is the extent of the development prior to 1939.

In June 1939, what is known locally as the Champion and Swamp veins, from which the major production of the Mother Lode Mine has been derived, as well as a major fault fracture trending N 62 degrees E, in which the productive vein of the Johnson Creek Mine lies, were traced to the Independent Quicksilver Company's property. Surface cuts were excavated and pits sunk at various places and intervals on these mineralized fractures or zones on the Greenback, Bonanza, New Era and

Happy Chance Claims, which, it was found, these veins or fractures traverse.

The Johnson Creek mineralized fractures trending N 62 degrees E were further opened up by dozer cuts A, C, D and F on the Bonanza, G on the New Era and E on the Happy Chance Claim, as shown on Plates 1 and 2.

The surface soil was removed and the highly oxidized andesite country rock of the Glarno formation was penetrated to a depth of 5 to 8 ft.

Cut A, length 350 feet, width 10 to 11 feet, and depth 5 to 12 feet, was driven N 15 degrees E across the major fault fracture trending N 62 degrees E (as shown on Plate 1), exposing 25 feet of cinnabar bearing rock of commercial grade. The location of the samples taken and the estimated value of which were arrived at by careful panning are shown on assay map, Plate 2.

Cut C, length 350 feet, width 10 to 11 feet, and depth 3 to 12 feet, was driven N 20 degrees W across the same fault fracture, 110 feet S 62 degrees W of Cut A (as shown on Plates 1 and 2), exposing 20 feet of commercial ore. The location and value of samples taken are shown on Plate 2.

Cut F, length 550 feet, width 10 to 11 feet and depth 2 to 12 feet, was driven N 15 degrees W across the same fault fracture 75 feet S 62 degrees W of Cut C, and about 100 feet N 62 degrees E of the south boundary of the Company's holdings, exposing 15 feet of commercial ore. The location and values of samples taken are shown on Plate 2.

Cut D, 250 feet in length, 37 to 38 feet in width, 3 to 14 feet in depth, was excavated along the major fault fracture N 62 degrees E from Cut C to 140 feet N 62 degrees E of Cut A, exposing commercial ore from Cut C to 100 feet N 62 degrees E of Cut A. The location and value of samples taken are shown on Plate 2. These 4 cuts, A, C, F and D,

tend to prove the continuity of an ore zone on the surface at least 15 to 25 feet in width and 285 feet in length, the distance between cut F and a point 100 feet E of Cut A. Pits 1 and 4, the location of which is shown on Plate 2, were sunk 3.5 feet below Cut D, the bottoms of both of which are still in the oxidized zone. Panning estimates of samples taken in the bottom of these pits were six pounds per ton. Pits 2 and 3, (location shown on Plate 2), were sunk 4 and 3.5 feet, respectively, below Cut D. Samples were taken in the bottom of these pits which are in an oxidized, highly altered bluish gray andesite, the value of which was six and four pounds per ton, respectively.

Drill holes 18, 19, 20, the location of which is shown on Plate 2, the depth being 52.3, 140 and 130 feet with inclinations, of 45, 60 and 75, from the horizontal, respectively, were drilled S 8° E across Cut D, passing directly under the east end of Pit 2-15, 35 and 75 feet, respectively, vertically below the south side of said pit. All of these holes showed mineralization to the extent of 4 to 7 pounds per ton for a width of 15 feet to a depth of 75 feet; vertically below bottom of Cut D in hole 20, the location and values of samples taken are shown on Plate 3.

Drill holes 21 and 22, located 25 feet N 12 degrees E of hole No. 20, as shown on Plate 2, the depth of which are 124.3 and 90.3 feet, with inclinations of 64 degrees and 49 degrees from the horizontal, respectively, were drilled S 23 degrees E across Cut D, passing under the center of Pit No. 1 and vertically below the south side of said pit. Both of the holes show mineralization to the extent of 2 to 5 pounds for a width of 15 feet to a depth of 85 feet, vertically below floor of Cut D. These two series of holes prove a body of low grade commercial ore 25 feet, the distance between the two series, in length, 15 feet in width and 80 feet in depth in one instance, as shown on Plates 4 and 5.

A tunnel will be driven as soon as weather permits to get beneath these ore zones at approximately 100 feet below the present floor of Cut D.

Drill holes 23 and 24, shown on Plate 2, are located 32 feet N 20 degrees E from hole 22, and were drilled at inclinations of 45 degrees and 60 degrees from the horizontal, respectively, S 55 degrees E across Cut D. While no commercial ore was encountered, the strong indications of cinnabar by the values of the samples panned, indicate that the mineralized zone is persistent, but barren of commercial ore, at this point along the line the holes cross-sectioned. However, the surface samples taken in Cut D showed low grade commercial ore vertically above these holes.

Holes 15, 16 and 17 were drilled, the location, direction, inclinations and depths of which are shown on Plate 2. None of these holes encountered cinnabar due to the fact that it has since been proven the ore bearing fractures dip in a northerly direction, and as the holes were driven in a northeast to northwest direction, the holes passed under the mineralized zones.

Angle holes will be drilled to cut mineralization exposed in Pit 4 and the mineralized area in Cut F. Also, holes will be drilled along a line N 62 degrees E from Hole No. 24 every 100 feet with the view of proving the continuity length of commercial ore to be greater than has been proven by the holes drilled to date.

Cut G, length 550 feet, width 10 to 11 feet, depth 5 to 22 feet, located 500 feet N 62 degrees E of Cut D on the New Era Claim, was driven N 40 degrees W (as shown on Plate 1), across the same fault fracture as encountered in Cut D, upon which all of the development described has been done. Another more or less parallel fracture 100 feet in width was cut 50 feet S 40 degrees E from the main N 62 degrees E fracture,

separated from it by a dark gray andesitic dike. Commercial ore was encountered in both of these fractures, the location and value of which is shown on Plate 1. One five-foot sample of a greyish clay gouge, showing cinnabar in the last mentioned fracture, assayed 8.4 pounds per ton. This development seems to prove the continuity of the mineralized fracture 500 feet further east than Cut A. Both of these mineralized fractures in Cut G will be drilled as soon as the drill-hole development is completed in Cut D.

Cut E, length 200 feet, width 10 to 11 feet, depth 2 to 3 feet, was driven S 40 degrees W about 350 feet N 62 degrees E of Cut G. On account of excessive water the rock in place was not reached. Therefore, it is not positively known whether the mineralized zone encountered in Cuts F, C, A and G extends this far east or not. A shaft will be sunk in this cut as soon as weather permits, to prove or disprove the existence of the major fault fracture as far East as this cut.

This is the extent of the development on the Johnson Creek Mine Fracture trending N 62 degrees E.

Cut B, length 350 feet, width 10 to 11 feet, depth 3 to 12 ft., 250 feet S 50 degrees E of Cut D on the Bonanza Claim, the location of which is shown on ^{Plate 1,} ~~Plate 1,~~ was driven S 35 degrees E across a fracture parallel to the one previously discussed. This cut penetrated the oxidized andesite country rock about 3 feet, while traces of cinnabar were indicated in the pannings at various places, no cinnabar of commercial grade was encountered.

The Northerly extension of the Swamp Vein of the Mother Lode Mine is most likely what is known as the Greenback Vein on the Consolidated Quicksilver Company's holdings. This vein trending N 12 degrees E and dipping about 80 degrees S was opened up by surface (5) trenches for a distance of 600 feet, thus proving the continuity of the vein on the

surface for at least that distance from the development to date. The vein varied in width from 3 to 5 feet in value from 2 to 10.6 pounds per ton, the location and value of which are shown on Plate 1, the cinnabar being impregnated in a yellowish-white to bluish-clay gouge in a fracture in the highly altered oxidized andesite country rock. This vein will be prospected in depth by drill holes, particularly beneath the sample which assayed 10.6 pounds per ton.

Pits have been sunk on what is presumed to be the Champion vein on the Company's holdings in various places, but no development has yet been performed.

S U M M A R Y

Cut A - 350 ft. in length	Bonanza Claim	600 cu. yds.
" B - 350 " " "	" "	450 " "
" C - 350 " " "	" "	350 " "
" D - 250 " " "	" "	3,100 " "
" E - 200 " " "	Happy Chance	100 " "
" F - 550 " " "	Bonanza Claim	550 " "
" G - 350 " " "	New Era	2,500 " "
		7,650 " "
TOTAL		

DRILL HOLES

DEPTH

14	102 ft.
15	145.5 "
16	69.0 "
17	152.5 "
18	53.3 "
19	139.0 "
20	130.5 "
21	124.3 "
22	90.3 "
23	167.2 "
24	180.0 "
25	63.9 "
26	81.0 "

TOTAL 1,498.7 "

(Continued on Page 20 B

SUMMARY - continued

<u>TRENCH</u>	<u>GREENBACK</u>	<u>LENGTH</u>
1	"	15 ft.
2	"	10 "
3	"	30 "
4	"	35 "
5	"	75 "
6	"	30 "
		50 "

	TOTAL	245 "

35 pits and postholes average depth 6 feet equal 210 feet on Greenback, Commodore and Bonanza claims.

The previously described work is the extent of the development to date.

RECOMMENDED DEVELOPMENT

While the probable ore developed by the exploratory work to date is sufficient for a year's operation of a 50-ton reduction plant, the following exploratory work is necessary to be performed to assure the continuous operation of the property:

<u>Location</u>	<u>No. Drill Holes</u>	<u>Total Footage</u>	<u>Cost per foot</u>	<u>Total Amt.</u>
Pit No. 4	3	300	\$ 2.50	\$ 750.00
Cut F	3	300	2.50	750.00
100 ft. east Hole No. 23	3	300	2.50	750.00
Cut G	6	600	2.50	1,500.00
100 ft. West Cut G	3	300	2.50	750.00
200 ft. West Cut G	3	300	2.50	750.00
100 ft. East Cut G	3	300	2.50	750.00
200 ft. East Cut G	3	300	2.50	750.00
Greenback Claim	<u>10</u>	<u>1,000</u>	<u>2.50</u>	<u>2,500.00</u>
TOTAL	40	4,000	\$ 25.00	\$ 10,000.00

One thousand feet Mine Development @ \$10.00 per ft. 10,000.00

Bulldozer excavations for 24 days @ \$32.00 per day 768.00

Equipment, Compressor, Jack-hammers, etc. 4,232.00

TOTAL \$ 25,000.00

This program of drilling and tunnel exploratory work, drifts, cross-cuts, raises, etc., is subject to change as work progresses, depending upon results obtained. The cost of mining and plant operation should not exceed \$4.00 per ton.

SAMPLING

Samples were taken in the dozer cuts A, C, F and G, by cutting a trench 2 to 3 inches in width and depth, respectively, in the center of the bottom of the cut, at 5-foot intervals. In Cut D, the trenches were cut across and up and down the cut at the same intervals. The location and values of samples taken are shown on Plates 2 and 5. These samples were panned, and values listed are panning estimates. Check assays were made frequently to ascertain and assure accuracy of these pannings.

In sampling the drill-holes, the wash water or sludge was saved and combined with the cuttings recovered in the upside down core barrel; the samples thus obtained from each run were panned to determine the value of the material passed through.

The lengths of the runs vary and the location and values of samples taken are shown on Plates 3 and 4. Portions of some of the sludge samples have been bottled and kept to be assayed. The core recovered has been carefully arranged in core-boxes and racked for future reference.

ORE RESERVES

The results of the development obtained to date by the dozer-cuts and drill-holes have proved a probably block of ore, shown on Plate 5, 285 feet in length on the surface (the distance between Cut F and a point 100 feet East of Cut A), and 25 feet in length (the distance between the bottom of the two series of holes 18, 19, 20, 21 and 22, for an average length of 155 feet, 18 feet in width (the average width of commercial ore 20 feet on the surface, 16 feet at the bottom of holes 20, 21, and 80 feet depth (average depths of commercial ore encountered by holes 20 and 21, 75 and 85 feet, respectively).

Thus a block of ore $\frac{155 \times 18 \times 80}{12} = 18,600$ tons, having a value of 5.2 pounds per ton (the average value of the samples taken).

The cubical contents of one ton of ore has been considered 12 cubic feet for this calculation.

SUMMARY AND CONCLUSIONS

The following facts are to be considered:

Climatic and economic conditions are favorable for continuous operation the entire year and for low operating cost.

The geologic conditions are favorable for the deposition of quicksilver. The Company's holdings are located in a recognized mineralized area, in one of the major fault fractures trending N 62 degrees E from which an appreciable amount of quicksilver has been produced. Furthermore, the property is situated between the Mother Lode and Johnson Creek Mines, which have been the most productive mines along this fault fracture.

At least 3 mineralized (cinnabar bearing) veins or fractures are known to traverse the property. Two of these, the Swamp and Champion veins from which the major productions of the Mother Lode Mine has been derived, have to date only been prospected by surface trenches, cuts, pits and short tunnel (a sample from which assayed 10.6 pounds per ton), to prove the existence of these veins on this property.

A meagre amount of development (dozer-cuts and drill-hole exploration) on the third or Johnson Creek Mine Fracture has resulted in the development to date of a probable tonnage of 18,600 tons, having a value of 5.2 pounds per ton. While to date, only ore of a low commercial grade has been encountered, the history of the other mines in the district has been, where this main fracture is intersected by cross-fractures, particularly those trending N 12 degrees E, a good grade of and even high grade ore has been encountered. It is to be

expected when the tunnel to be driven gets beneath the area reached by drill-holes 18, 19, 20, 21 and 22, that such inte sections will have been encountered, which will open up ore of a much higher grade than heretofore has been exposed.

In view of the above facts, further development of the property to the extent recommended in body of report is warranted, with the confident expectation that positive ore of sufficient tonnage will be developed to keep the property in continuous operation.

Very respectfully submitted,

(Signed): GEORGE HOGG.