

HELENA MINE

BOHEMIA DIST

LOUIS

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

ASSAY LABORATORIES

Baker

SAMPLE INFORMATION REQUESTED

Grants Pass

The law passed by the Legislature, governing the free assaying and analyzing of samples sent to the State Assay Laboratories, provides that certain information be furnished the Laboratory regarding samples sent for assay, etc. A copy of this law will be found on the back of this blank. Please read the law carefully. Will you please fill in the information called for on the following blank, as far as possible and return the same to the nearest State Assay Laboratory along with your sample? If you have made out a blank, this copy is for your future use. Keep a copy of the information on each sample for your own reference.

Your name in full . . . Kenneth O. Watkins

Postoffice address . . . Disston, Oregon

Are you a citizen of Oregon? Yes . . . Date on which sample is sent May 24, 1946

Name (or names) of owners of the property . . . L. M. Capps

Name of particular claim and date of location . . . Helena

Location of property or source of sample (describe as accurately as possible below):

(1) County Lane . . . (2) Mining district Bohemia

(3) Township 23 S. (4) Range 2 E. (5) Section 18. (6) Quarter Section. . . .

How far from passable road? . . . On road

For what minerals or elements do you wish the sample analyzed? . . . Au & Ag.

(Unless other minerals or elements are specifically named this sample will be assayed for gold and silver only.)

Type of sampling: Channel (length) 44" . . . Grab . . . Pipe

Report mailed . . . X Called for

IMPORTANT: A sample, to be of value, should be taken in an even channel across the vein from wall to wall. Its position in the workings should be marked and the width measured. Assays of unlocated samples, without widths, are of little value; they create little interest in the minds of experienced investors and engineers.

(signed)

DO NOT WRITE BELOW THIS LINE--FOR OFFICE USE ONLY -- USE OTHER SIDE IF DESIRED

Description

Sample Number	GOLD		SILVER		Percent	Percent	Total
	oz./ T	Value	oz./ T	Value			
P-4705	0.255	\$8.93	0.98	\$0.89			\$9.82

Report issued() Card filed()

HELENA

Galice District.—Bert Pankey hydraulicked the Maloney mine from February 15 to April 15, 1949; 700 cubic yards of gravel washed yielded 5 ounces of gold.

Illinois River District.—Ben B. Baker and J. E. Hamlen operated the Onion Falls mine from May 1 to September 15, 1949; 46 tons of copper ore shipped to a smelter contained 2 ounces of gold, 22 ounces of silver, and 6,021 pounds of copper.

Waldo District.—Earle N. Young leased the Rainbow mine from July to December 1949 and recovered 3 ounces of gold and 1 ounce of silver from 7 tons of ore cyanided.

LANE COUNTY

1949

Bohemia District.—Bartels Bros. Mining Co. operated the Champion mine and flotation mill during 1949. Copper concentrate (containing values in gold, silver, and lead) recovered from the gold ore milled was shipped to a smelter. In addition, gold ore was shipped for direct smelting. Helena Mines, Inc., and Harold Barton, lessee, worked the Helena mine from August to November 1949; 18 tons of zinc-lead concentrate, containing 15 ounces of gold, 102 ounces of silver, 888 pounds of copper, 2,863 pounds of lead, and 7,358 pounds of zinc produced from 130 tons of gold ore milled at the Champion mine and 34 tons of gold ore containing 20 ounces of gold, 68 ounces of silver, 1,173 pounds of copper, 1,978 pounds of lead, and 1,500 pounds of zinc, were shipped to smelters. Helena Mines, Inc., leasing the Musick mine from the Tar Baby Mining Co., shipped 485 tons of dump ore to the Champion mill during 1949. The zinc-lead concentrate produced (28 tons containing 25 ounces of gold, 145 ounces of silver, 1,163 pounds of copper, 5,258 pounds of lead, and 8,632 pounds of zinc) was shipped to a smelter. Data on mines and prospects in this district were published.¹

H-401A →
HB

MALHEUR COUNTY

Mormon Basin District.—Frank E. Deem recovered 5 ounces of gold and 1 ounce of silver by ground-sluicing and dry-washing 75 cubic yards of gravel at the Bam Tree group of claims in 1949.

¹ Taber, John W.. A Reconnaissance of Lode Mines and Prospects in the Bohemia Mining District, Lane and Douglas Counties, Oreg.: Bureau of Mines Inf. Circ. 7512, 1949, 50 pp.

ounces of gold, 129 ounces of silver, and 80 pounds of copper.

LANE COUNTY

1950

Bohemia District.—The Champion Lease (Kenneth O. Watkins, partner) operated the Champion flotation mill from July 1 through December 31, 1950; 1,948 tons of ore from the Champion mine yielded 85 tons of flotation copper concentrate containing in gross metal 363 ounces of gold, 1,778 ounces of silver, 13,455 pounds of copper, 5,919 pounds of lead, and 4,239 pounds of zinc; 102 tons of flotation zinc-copper concentrate containing in gross metal 243 ounces of gold, 1,991 ounces of silver, 19,824 pounds of copper, 2,831 pounds of lead, and 13,833 pounds of zinc; and 9 tons of gravity lead concentrate containing in gross metal 132 ounces of gold, 134 ounces of silver, 644 pounds of copper, 2,111 pounds of lead, and 1,037 pounds of zinc. Ores from the Musick mine, Tar Baby Mining Co. (115 tons, yielding 22 tons of flotation zinc-lead-copper concentrate containing in gross metal 32 ounces of gold, 256 ounces of silver, 2,380 pounds of copper, 6,595 pounds of lead, and 11,920 pounds of zinc and an undetermined tonnage of zinc concentrate), and the Helena mine, Helena Mines, Inc. (145 tons, yielding 10 tons of zinc-lead-copper flotation concentrate containing in gross metal 34 ounces of gold, 194 ounces of silver, 1,380 pounds of copper, 4,303 pounds of lead, and 15,340 pounds of zinc and an undetermined tonnage of zinc concentrate), also were milled. Concentrates (zinc concentrate excepted) were shipped to smelters.

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HELENA MINE

BOHEMIA DIST.

LANE COUNTY

The Helena mine in the Bohemia district at Disston, Oregon, is being prepared for resumption of operations. The property is held by George S. Barton, 69 West Broadway, Eugene, Oregon, and F. Dale Wyatt of Eugene is in charge of the work. Ore values are in gold, silver, lead, zinc, and copper.

Wyatt

From MINING WORLD
September, 1946
Page 35

Shipments of gold ore from the Helena mine in the Bohemia district near Disston are being made by Kenneth O. Watkins of Disston, who is purchasing the property from the L. M. Capps estate. The ore also carries values in lead, silver, zinc, and copper.

Emil

BLANK B—ANNUAL REPORT

This report must be properly executed and filed with the Corporation Commissioner on or before July 1, 1933, 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 25-244, Oregon Code 1930.

ANNUAL REPORT TO THE CORPORATION DEPARTMENT

FOR THE YEAR ENDING JUNE 30, ~~1933~~ 1937

Of THE VESUVIUS MINES 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. 22 East 8th Street,
in the city of Eugene, 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
Franc Lucile Hard, Opt. D.	President	690 So. 5th St., San Jose, Calif.
Almira L. Hard-	Secretary	do
do	Treasurer	do

The date of the annual election of officers is 1st Monday in each year.

The date of the annual election of directors is do.

	Common With Par Value	Common No Par Value	Preferred
Amount of authorized capital stock	\$ 6,000,000	Shares	\$
Number of shares of authorized capital stock	6,000,000		
Par value of each share	\$ 1.00	x x x x x x	\$
Amount of capital stock subscribed	\$ 6,000,000	Shares	\$
Amount of capital stock issued	\$ 6,000,000	Shares	\$
Amount of capital stock paid up	\$ 6,000,000	Shares	\$
Price at which no par value stock issued	x x x x x x	\$	x x x x x x

State amount of capital, represented by stock of no par value, with which Parties organizing the corporation began business company have long been dead and records gone

Total amount of its properties in Oregon (name of claims, lodes, or placers)
Newton, Fawn, Jasper, lode claims U.S. Pat. Survey #814. Vesuvius, German, Nightengale, Wild Hog, William Tell, Charles, Dixie Queen, lode claims of U.S. Pat survey #486. Story lode claim U.S. Pat survey #815. Dora, Sampson, Holy Smoke, Watson, Confidence lode claims U.S. Patent Survey #453. Dewy, Marie, lode claims U.S. Pat. Sur. #455. Pasedena, Hobart, McKinley lode claims of U.S. Pat. survey #819. All situated in the Bohemia mining district.

The amount of work done thereon and improvements made thereon since the time of filing last report none.

The amount of output or products of the mines or wells of such corporation from January 1, 1932, to December 31, 1932, inclusive, none.

The value of output or products of the mines or wells of such corporation from January 1, 1932, to December 31, 1932, \$ none.

IN WITNESS WHEREOF, I, Franc Lucile Hard, Opt. D. President
of said corporation, have signed this report, this
[CORPORATE SEAL] ninth day of June, A. D. 1937
(signed) Franc Lucile Hard, Opt. D.

STATE OF OREGON, }
County of _____ } ss.

I, _____, being first duly sworn, depose and say, upon oath, that I am _____ of the foregoing corporation; that said corporation is not engaged in or transacting any other business except that of locating, prospecting, developing or operating mines for any of the precious metals, coal, or prospecting or operating for oil, or operating an oil well; that the value of the output or products of the mines or wells of said corporation from January 1, 1932,

Helena Mine

Mining Jour.(Phoenix) v. 21, # 9, p. 49, Sept. 30, 1937.

"A crew of 14 men is employed at the Helena mine in the Bohemia district of Lane Co. near Cottage Grove, Oreg. The mine has been a more or less consistent producer during the past few years. Present work is under the direction of W. J. Reeves, Cottage Grove."

HELENA

MINES

INC.

1. THE SHARES BEING OFFERED ARE ASSESSABLE AND THEREFORE SUBJECT TO SUCH PAYMENTS IN ADDITION TO THE OFFERING PRICE, AS SHALL BE LEVIED BY THE ISSUER'S BOARD OF DIRECTORS.

THESE SHARES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. THEY ARE OFFERED UNDER THE EXEMPTION FROM REGISTRATION PROVIDED BY RULE 240 OF REGULATION A-M UNDER THE ACT. THE SECURITIES AND EXCHANGE COMMISSION HAS NEITHER APPROVED NOR DISAPPROVED THESE SHARES AND HAS NOT PASSED UPON THE ACCURACY OR COMPLETENESS OF THE STATEMENTS IN THIS PROSPECTUS.

2. PROSPECTUS WAS FILED WITH THE SEATTLE, WASHINGTON OFFICE OF SECURITIES AND EXCHANGE COMMISSION ON MAY 26TH, 1947.

3. THE NAME OF THE ISSUER IS HELENA MINES, INC. THE PRINCIPAL PLACE OF BUSINESS IS ROOM 212 MINER BUILDING, EUGENE, OREGON. ORGANIZATION IS UNDER THE LAWS OF THE STATE OF NEVADA.

4. DIRECTORS OF THE ISSUER ARE:

DR. WILLIAM ELMER CALDWELL	342 N. 29TH STREET	CORVALLIS, OREGON
KENNETH ORAL WATKINS	1153 TAYLOR STREET	CORVALLIS, OREGON
SOL ASHLEY CUDEBACK	2496 PORTLAND STREET	EUGENE, OREGON
ALYN BAUGHMAN CROCKER	R F D #1	EUGENE, OREGON
THOMAS G. DONACA	444 N.W. MAYWOOD DR.	PORTLAND, OREGON

OFFICERS OF THE ISSUER ARE:

DR. WILLIAM ELMER CALDWELL	PRESIDENT
KENNETH ORAL WATKINS	VICE-PRESIDENT AND GENERAL MANAGER
ALYN BAUGHMAN CROCKER	SECRETARY
SOL ASHLEY CUDEBACK	TREASURER

THESE PARTIES ARE THE PROMOTERS OF THIS ISSUE. LETTERS IN TRIPLICATE, GIVING THE NAMES OF ALL UNDERWRITERS OR SALESMEN WHO MAY BE EMPLOYED TO SELL THIS ISSUE, WILL BE MAILED TO THE SEATTLE OFFICE OF THE SECURITIES & EXCHANGE COMMISSION.

5. AUTHORIZED CAPITALIZATION IS \$30,000.00 DIVIDED INTO 3,000,000 SHARES OF A PAR VALUE OF ONE CENT (1¢) TO BE ISSUED AS FULLY PAID AND ASSESSABLE.

6. 1,799,680 SHARES ARE UNISSUED. 1,000,000 SHARES HAVE BEEN ISSUED TO KENNETH O. WATKINS IN FULL PAYMENT FOR ASSIGNMENT OF HIS CONTRACT ON THE HELENA MINE AND HIS PURCHASE CONTRACT ON MILL MACHINERY. 200,000 SHARES HAVE BEEN ISSUED TO BERYL TOM OF ALSEA, OREGON FOR TITLE TO THE OREGON-COLORADO MINE.

THE OTHER DIRECTORS, NAMELY DR. WM. E. CALDWELL, S. A. CUDEBACK, ALYN S. CROCKER AND T. G. DONACA HAVE EACH SUBSCRIBED FOR ONE \$10.00 BOND AND 80 SHARES OF THE COMMON ASSESSABLE STOCK HAVE BEEN ISSUED TO EACH, MAKING A TOTAL OF 320 SHARES ISSUED TO THE DIRECTORS OTHER THAN KENNETH O. WATKINS.

7. THE FOLLOWING EXCERPTS FROM THE NEVADA CORPORATE LAW ARE APPLICABLE UPON STOCK ISSUED AS FULLY PAID AND PROVIDED AS ASSESSABLE IN THE ORIGINAL CHARTER. "THE TRUSTEES (DIRECTORS) SHALL ALSO HAVE POWER AT SUCH TIMES AND IN SUCH AMOUNTS, AS THEY MAY FROM TIME TO TIME DEEM THE INTEREST OF THE CORPORATION TO REQUIRE, TO LEVY AND COLLECT ASSESSMENTS UPON THE CAPITAL STOCK OF THE CORPORATION AS HEREIN PROVIDED.

'NOTICE OF EACH ASSESSMENT SHALL BE GIVEN THE STOCKHOLDER PERSONALLY OR BY PUBLICATION ONCE A WEEK FOR AT LEAST FOUR WEEKS, IN SOME NEWSPAPER PUBLISHED IN THE COUNTY IN WHICH THE PRINCIPAL OFFICE OR PLACE OF BUSINESS OF THE COMPANY IS LOCATED, AND IN A NEWSPAPER PUBLISHED IN THE COUNTY WHEREIN THE PROPERTY OF THE COMPANY OR CORPORATION IS SITUATED, IF IN THIS STATE... IF AFTER SUCH NOTICE, ANY STOCKHOLDER SHALL MAKE DEFAULT IN THE PAYMENT OF THE ASSESSMENT UPON THE SHARES HELD BY HIM, SO MANY OF SUCH SHARES MAY BE SOLD AS SHALL BE NECESSARY FOR THE PAYMENT OF THE ASSESSMENT UPON ALL THE SHARES HELD BY HIM, HER OR THEM, TOGETHER WITH ALL THE COSTS OF ADVERTISING AND EXPENSE OF SALE. THE SALE OF SAID SHARES SHALL BE MADE AT THE OFFICE OF THE COMPANY AT PUBLIC AUCTION TO THE HIGHEST BIDDER, AFTER A NOTICE THEREOF PUBLISHED FOR FOUR WEEKS AS ABOVE IN THIS SECTION DIRECTED, AND A COPY OF SUCH NOTICE MAILED TO EACH DELINQUENT STOCKHOLDER IF HIS ADDRESS IS KNOWN FOUR WEEKS BEFORE SUCH SALE, AND AT SUCH SALE THE PERSON WHO SHALL PAY THE ASSESSMENT SO DUE, TOGETHER WITH THE EXPENSE OF ADVERTISING AND SALE, FOR THE

EVERY CORPORATION IN THIS STATE SHALL ALSO HAVE THE POWER, WHENEVER, AT ANY ASSESSMENT SALE OF THE STOCK OF SAID CORPORATION, NO PERSON WILL TAKE THE STOCK AND PAY THE ASSESSMENT, OR AMOUNT UNPAID AND DUE THEREON AND COSTS, TO PURCHASE SUCH STOCK AND HOLD THE SAME FOR THE BENEFIT OF THE CORPORATION." THERE ARE NO PROVISIONS IN THE ARTICLES OR BY-LAWS OF HELENA MINES, INC., TO VARY THE CORPORATE LAW OF NEVADA.

8. THE ISSUER HAS NO PRESENT INTENTION TO LEVY ANY ASSESSMENTS DURING THE FIRST YEAR OR AT ANY KNOWN DATE.

9. THE ISSUER, HELENA MINES, INC., IS OFFERING TO THE PUBLIC \$90,000.00 WORTH OF FIRST MORTGAGE AND COLLATERAL TRUST BONDS IN DENOMINATIONS OF \$10.00, \$100.00 AND \$1000.00. THESE BONDS ARE TEN YEAR BONDS BEARING 4% INTEREST. FIRST INTEREST DUE DATE IS AUGUST 1ST, 1948 AND THE BONDS ARE CALLABLE AT ANY TIME AFTER THAT DATE.

EACH BOND PURCHASER WILL BE GIVEN THE OPTION TO BUY AT PAR EIGHT SHARES OF THE COMMON ASSESSABLE STOCK FOR EACH \$1.00 WORTH OF BONDS PURCHASED. IT IS ASSUMED THAT ALL BOND HOLDERS WILL ELECT TO PURCHASE STOCK AND THEREFORE THE ENTIRE VALUE OF THE STOCK OFFERED UNDER THIS OPTION, NAMELY \$7,200.00, WILL BE SOLD WITH THE BONDS.

THESE BONDS ARE BEING OFFERED UNDER THE EXEMPTION PROVISIONS OF REGULATION A AND LETTER OF NOTIFICATION IS BEING FILED WITH THE SEATTLE OFFICE OF THE SECURITIES & EXCHANGE COMMISSION. THESE BONDS ARE SECURED BY FIRST MORTGAGE ON THE OWNED PROPERTY OF THE ISSUER, INCLUDING THE OREGON-COLORADO MINE, THE ISSUER'S EQUITY IN MACHINERY PURCHASED ON CONTRACT AND THE ISSUER'S EQUITY IN THE CHAMPION AND HELENA MINES WHICH ARE BEING PURCHASED ON A CONTRACT BASIS. INASMUCH AS A GOOD PROPORTION OF THE MONEY RECEIVED FROM THE SALE OF THESE BONDS WILL BE USED TO COMPLETE PAYMENTS ON MACHINERY, THE SECURITY COVERING THE BONDS WILL BE PROPORTIONATELY INCREASED.

AT THE PRESENT TIME KENNETH O. WATKINS HOLDS A LARGE PROPORTION OF THE ISSUED STOCK AND INASMUCH AS HE DOES NOT WISH AN UNFAIR ADVANTAGE TO HIMSELF OVER THE OTHER INVESTORS AND INASMUCH AS IT IS HIS OPINION THAT A PROFIT WILL BE DERIVED FROM THIS OPERATION, HE HAS ENTERED INTO A CONTRACT WITH THE BOARD OF DIRECTORS OF THE HELENA MINES, INC. WHEREBY 720,000 SHARES OF HIS STOCK WILL NOT PARTICIPATE IN DIVIDENDS UNTIL 5% ANNUALLY HAS BEEN PAID ON THE PAR VALUE OF ALL OTHER ISSUED STOCK. THIS PROVISION WILL TERMINATE WHEN ALL BONDS HAVE BEEN REDEEMED IN FULL.

KENNETH O. WATKINS INTENDS TO USE THE 280,000 SHARES OF HIS STOCK NOT COVERED BY THESE DIVIDEND RESTRICTIONS, TO FURTHER THE SALE OF STOCK BY GIVING IT AS A STOCK BONUS TO STOCK SALESMEN OR STOCK PURCHASERS AND BY GIVING SOME OF IT TO DIFFERENT PARTIES WHO HAVE LOANED HIM MONEY TO HELP ACQUIRE THE TITLES AND CONTRACTS ASSIGNED TO THE ISSUER.

TOTAL VALUE OF ASSESSABLE SHARES OF COMMON STOCK OFFERED BY THIS PROSPECTUS IS \$10,000.00 INCLUDING THE 720,000 SHARES OFFERED TO BOND PURCHASERS AND 280,000 SHARES OF KENNETH O. WATKINS' STOCK TO BE GIVEN TO SALESMEN, INVESTORS AND OTHERS AS HE SEES FIT. \$90,000.00 WORTH OF HELENA MINES, INC. BONDS ARE BEING OFFERED BY FILING UNDER EXEMPTION PROVISIONS OF REGULATION A AND ARE BEING OFFERED BY THIS SAME PROSPECTUS.

10. NAMES OF KNOWN SALESMEN OR UNDERWRITERS ARE GIVEN IN PARAGRAPH NO. 4. NO SALARIED EMPLOYEE OR OFFICER OF THE COMPANY SHALL BE PAID A COMMISSION FOR SALE OF STOCK OR BONDS. SUCH PERSONS INCLUDING KENNETH O. WATKINS WHO DRAWS A SALARY AS GENERAL MANAGER, WILL CONSIDER IT A DUTY OF THEIR EMPLOYMENT AS PAID OFFICERS OR EMPLOYEES OF THE COMPANY, TO FURTHER THE SALE OF THIS OFFERING. COMMISSIONS SHALL BE PAID TO OTHERS, BUT IN NO CASE SHALL COMMISSIONS PAID EXCEED 25%.

11. ALL THE MINING PROPERTY OWNED OR CONTROLLED BY THE ISSUER AT THE PRESENT TIME IS LOCATED IN THE BOHEMIA MINING DISTRICT, LANE COUNTY, OREGON.

KENNETH O. WATKINS HAS ASSIGNED HIS PURCHASE CONTRACT ON THE HELENA MINE TO THE ISSUER.

ISSUER HOLDS TITLE TO THE OREGON-COLORADO MINE CONSISTING OF FOUR (4) PATENTED MINING CLAIMS WITH ABOUT 2,000 FEET OF UNDERGROUND DEVELOPMENT.

ISSUER HOLDS A ROYALTY LEASE ON THE MUBICK MINE. THIS LEASE CALLS FOR NO FIXED PAYMENTS BUT IS HELD IN FORCE BY ANNUAL WORK PROVISION.

ISSUER HOLDS CONTRACT ON CHAMPION MINE WITH OPTION TO BUY ALL OR PART OF THE MINE. THIS INCLUDES PURCHASE OF THE CHAMPION MILL AND CAMP BUILDINGS LISTED UNDER BUILDINGS AND EQUIPMENT.

ALREADY INSTALLED AT THE CHAMPION MINE FOR \$15,000.00; \$500.00 OF WHICH HAS ALREADY BEEN PAID.

IT IS THE ISSUER'S INTENT TO OPERATE THIS MILL FOR THE BENEFIT OF THE ISSUER'S MINES, AND AS A CUSTOM MILL TO HANDLE ORE FROM OTHER MINES IN THE DISTRICT IF AT ANY TIME ISSUER'S MINES FAIL TO PRODUCE FULL TONNAGE FOR THE MILL.

IN THE FOLLOWING DESCRIPTION OF THE ISSUER'S MINES AND OTHER MINES IN THE DISTRICT, CONSIDERABLE INFORMATION IS QUOTED DIRECT FROM REPORT ON BOHEMIA DISTRICT WRITTEN IN FEBRUARY, 1946, BY KENNETH O. WATKINS. THESE DIRECT QUOTATIONS ARE SHOWN BY QUOTATION MARKS IN THE BALANCE OF THE DESCRIPTIVE PART OF THIS PROSPECTUS.

LOCATION

THE BOHEMIA MINING DISTRICT COVERS ABOUT FIFTY SQUARE MILES LYING ON BOTH SIDES OF THE CALAPOOYA RANGE IN LANE COUNTY, OREGON.

THE CHAMPION MINE WHERE THE ISSUER PROPOSES TO OPERATE THE MILL FOR THE ORES FROM ALL OF THE ISSUER'S HOLDINGS IN THE DISTRICT, IS LOCATED ALMOST IN THE CENTER OF THE DISTRICT AND IS FOURTEEN MILES FROM DISSTON POST OFFICE AND IS THIRTY-SIX MILES FROM COTTAGE GROVE, OREGON. COTTAGE GROVE IS A TOWN OF ABOUT 4,000 PEOPLE IN THE UPPER END OF THE WILLAMETTE VALLEY AND IS ON THE U.S. HIGHWAY NO. 99 AND THE SOUTHERN PACIFIC RAILROAD. DISSTON LIES ABOUT TWENTY-TWO MILES SOUTHEAST OF COTTAGE GROVE AT THE END OF THE O.P. & E. RAILROAD. DISSTON IS A SHIPPING POINT FOR ORES AND CONCENTRATES FROM THE DISTRICT. ISSUER'S MINES AND OTHER DEVELOPED MINES IN THE DISTRICT ARE FROM TWO TO FOUR MILES BY GOOD ROAD FROM THE CHAMPION MINE.

GENERAL ECONOMIC AND PHYSICAL CONDITIONS

"THE RELIEF IN THE BOHEMIA DISTRICT IS QUITE MARKED. THE LOWEST MINERALIZED POINTS DEVELOPED BEING AT AN ELEVATION OF APPROXIMATELY 2,000 FEET AND THE HIGHEST NEARLY 6,000 FEET. THE WHOLE AREA IS QUITE STEEP, AND IS CUT BY DEEP RAVINES, ALL OF WHICH CARRY GOOD SIZED STREAMS.

THE DISTRICT IS COVERED WITH HEAVY TIMBER, MOSTLY DOUGLAS FIR, BRUSH AND OVERBURDEN MAKES SURFACE PROSPECTING VERY EXPENSE AND DIFFICULT.

THE PRECIPITATION IS APPROXIMATELY 50 INCHES PER YEAR. VERY LITTLE RAIN FALLS DURING THE SUMMER MONTHS, BUT THERE IS CONSIDERABLE PRECIPITATION FROM OCTOBER TO MAY, PART OF IT IN THE FORM OF SNOW.

THERE IS A SURPLUS OF WATER FOR MILLING AND CAMP USE ALL OVER THE DISTRICT.

THE R.E.A. HAVE BUILT A POWER LINE, CARRYING BONNEVILLE POWER AS FAR AS DISSTON. IT WILL BE POSSIBLE TO EXTEND THIS POWER TO THE DISTRICT, BUT I DO NOT THINK IT ADVISABLE AT THIS TIME, AS IT WOULD BE NECESSARY TO CUT A RIGHT-OF-WAY 400 FEET WIDE THROUGH THE NATIONAL FOREST, AND PAY FOR ALL THE TIMBER CUT. THE COST OF THIS TIMBER WOULD BE MANY TIMES GREATER THAN THE ACTUAL COST OF THE CONSTRUCTION OF THE POWER LINE. DIESEL FUEL, DELIVERED IN THE DISTRICT, ONLY COST 10¢ PER GALLON. SO, FOR THE TIME BEING DIESEL POWER IS ADVISED.

THE LABOR SUPPLY IN THIS AREA CONSISTS MOSTLY OF LOGGERS AND FARMERS, THERE BEING VERY FEW EXPERIENCED MINERS IN THE AREA, EXCEPT THOSE FORMER FARMERS AND LOGGERS WHOM I TRAINED TO BE MINERS. IT HAS BEEN MY OBSERVATION THAT THESE MEN WILL PRODUCE MORE WORK THAN THE AVERAGE CALIFORNIA, NEVADA OR ARIZONA MINERS.

IT IS TRUE THAT THE WAGE SCALE AT THE PRESENT TIME FOR MINERS IN THAT AREA IS SOMEWHAT HIGHER THAN IN CALIFORNIA AND ARIZONA MINES, DUE TO THE FACT THAT AT THE PRESENT TIME THE LOGGING INDUSTRY IS PAYING A VERY HIGH WAGE."

GEOLOGY

"THE CALAPOOYA RANGE IS AN EAST-WEST RANGE CONNECTING THE CASCADES TO THE COAST RANGE. IT FORMS A WATER DIVIDE BETWEEN THE UMPQUA AND WILLAMETTE RIVER WATERSHEDS. AT A POINT ABOUT 25 MILES WEST OF THE SUMMIT OF THE CASCADES ARE FOUR PEAKS ABOUT 6,000 FEET HIGH. THESE FOUR PEAKS LIE IN A SEMI-CIRCLE AND ARE IN THE VERY HEART OF THE BOHEMIA DISTRICT.

THE BOHEMIA DISTRICT HAS NO RELATION GEOLOGICALLY OR OTHERWISE WITH THE MUCH PUBLI-

DIKES. THESE DIKES APPARENTLY FORM THE FISSURES FOR THE VEINS.

THE AVERAGE STRIKE OF THE MAJOR VEINS - ABOUT 75 IN NUMBER - IS NORTH 70° WEST. THE VEINS HAVE A WIDTH OF FROM 16 INCHES TO 20 FEET, BUT MOST OF THE ORE PRODUCING VEINS ARE AROUND FOUR FEET IN WIDTH. THE DEVELOPED ORE SHOOTS IN THE DISTRICT VARY IN LENGTH FROM 40 TO 400 FEET. THE DIP OF THE VEINS VARY FROM VERTICAL TO 60 DEGREES.

THE METAL CONTENT OF THE VEINS CONSISTS OF GOLD IN THE FREE STATE AND COMBINED WITH SULPHIDES, SILVER, CHALCOPYRITE, PYRITE, GALENA, AND SPHALERITE, THE LATTER FOUR BEING THE SULPHIDES OF COPPER, IRON, LEAD AND ZINC.

I SEE NO EVIDENCE OF SECONDARY ENRICHMENT. I THINK ALL THE SULPHIDES PRESENT ARE PRIMARY AND THE COUNTRY ROCK BEING THE SAME 4,000 FEET OR MORE IN DEPTH, THERE IS NO REASON TO ANTICIPATE A SUDDEN CHANGE IN CHARACTER OR VALUE OF THE ORE. IN FACT, ORE EXPOSED ON BOTH SIDES OF THE MOUNTAIN RANGE, IN VEINS SUCH AS THE HELENA, SHOW THE SAME TYPE OF ORE IN THE CANYONS AS ON THE TOP OF THE MOUNTAIN THRU A VERTICAL RANGE OF 2,300 FEET."

HISTORY

"THE BOHEMIA DISTRICT WAS DISCOVERED IN 1858, AND THE FIRST ORGANIZATION MEETING WAS HELD ON OCTOBER 20TH OF THAT YEAR. THE RECORDS OF THIS MEETING IN THE OFFICE OF THE LAKE COUNTY RECORDER, INDICATE THAT ONLY SIX VEINS WERE FOUND AT THAT TIME. APPARENTLY VERY LITTLE WAS DONE FOR SOME YEARS AFTER THAT.

IN 1875, A FIVE-STAMP MILL WAS BUILT ON THE KNOTT CLAIM, NOW A PART OF THE CHAMPION MINE. I AM TOLD THAT IT TOOK TWO YEARS TO BUILD A ROAD OF SORTS ALONG THE RIDGES TO GET THIS MILL TO ITS LOCATION. THIS MILL WAS OPERATED UNTIL 1877, THE ORE COMING FROM THE SHAFT AT THE VERY TOP OF GROUSE MOUNTAIN.

IN 1887, THE ANNIE MINE, NOW CALLED THE NOONDAY, WAS DISCOVERED AND ORE SLEDDED TO THE KNOTT MILL.

IN 1891 AND 1892, LARGE NUMBERS OF PROSPECTORS CAME TO THE DISTRICT, AND MANY CLAIMS WERE LOCATED. AT THIS TIME THE CHAMPION AND THE MUSICK WERE DISCOVERED AND STAMP MILLS BUILT ON BOTH OF THEM. A BETTER ROAD WAS BUILT UP SHARP'S CREEK, A CANYON TO THE WEST OF CHAMPION CREEK, FOR TRANSPORTATION OF THE MACHINERY. THIS ROAD STILL EXISTS AND IS PASSABLE, BUT IS VERY STEEP.

IN 1898, AFTER A REPORTED PRODUCTION AT THE ANNIE MINE, NOW THE NOONDAY, OF \$700,000.00, FROM A SMALL FIVE-STAMP MILL, THE NOONDAY COMPANY BUILT ANOTHER ROAD ON THE NORTHEAST SIDE OF THE DISTRICT TO THE NOONDAY MINE, AND BUILT A THIRTY-STAMP MILL. BY THE TIME THIS MILL WAS READY FOR OPERATION, THE OXIDIZED ORE WAS ABOUT GONE. THE MINE WAS SHUT DOWN ABOUT 1899.

THE HELENA MINE, WHICH LIES A SHORT DISTANCE NORTH OF THE NOONDAY WAS OPERATED BY THE THREE JENNINGS BROTHERS, STARTING ABOUT 1902. THEY TOOK OUT VERY RICH ORE, PRODUCING ACCORDING TO UNVERIFIED REPORTS, ONE ONE AND ONE-HALF MILLION DOLLARS IN A FEW YEARS. THEY PROCEEDED TO ORGANIZE THE OREGON SECURITIES CORPORATION, AND ACQUIRED THE CHAMPION AND MUSICK MINES AS WELL. THE OREGON SECURITIES CORPORATION BUILT A THIRTY-STAMP MILL ON THE CHAMPION PROPERTY, A HYDRO-ELECTRIC POWER PLANT ABOUT EIGHT MILES FROM THE MINE, AND STARTED TO OPERATE ON A GRAND SCALE. REALIZING THAT THE OXIDIZED ORE WAS ABOUT GONE, THE JENNINGS BROTHERS VERY WISELY SOLD OUT THEIR INTEREST IN THE COMPANY.

FROM 1906 ON, NO WORK WAS DONE AT THE MUSICK OR THE HELENA, BUT THE CHAMPION WAS OPERATED INTERMITTENTLY UNTIL 1917. THE PRODUCTION FROM THESE OLD OPERATIONS IS IMPOSSIBLE TO DETERMINE EXACTLY, DUE TO THE SCARCITY OF RECORDS, BUT EX-SENATOR ROBERT N. STANFIELD OF OREGON EXAMINED THE GOVERNMENT RECORDS AT REQUEST OF INTERESTED PARTIES, AND HE REPORTED THAT THE PRODUCTION OF THE DISTRICT WAS IN EXCESS OF NINE MILLION DOLLARS.

THE BUREAU OF MINES DOES NOT GIVE THIS HIGH A FIGURE FROM THEIR RECORDS, BUT THEY ADMIT THERE WAS CONSIDERABLE PRODUCTION BEFORE APPROPRIATE RECORDS WERE KEPT. IN FACT, THE HEAVY PRODUCTION FROM THE NOONDAY, MUSICK AND HELENA WAS ALL BEFORE 1904.

IN 1932 I VISITED THE DISTRICT AND OBSERVED THAT THERE WAS A CONSIDERABLE AMOUNT OF SULPHIDE ORES IN THE VARIOUS MINES. IN THE SUMMER OF 1933 I OPERATED A COMMERCIAL ASSAY OFFICE IN EUGENE, OREGON, AND MADE A GOOD MANY ASSAYS FROM VARIOUS MINES IN THE DISTRICT. I WAS EMPLOYED BY ONE PARTY TO MAKE A COMPLETE ASSAY MAP OF THE LEAD-CRYSTAL.

IN THE EARLY SPRING OF 1934 I SAMPLED THE NOONDAY MINE FOR A GROUP OF EUGENE BUSINESSMEN, WHO ORGANIZED A COMPANY KNOWN AS THE GROUSE MOUNTAIN MINING COMPANY, TO OPERATE THE NOONDAY MINE, FORMERLY KNOWN AS THE ANNIE MINE. I BUILT A 25-TON FLOTATION MILL FOR THIS COMPANY AND OPERATED IT FOR A SHORT TIME, BUT THEY BECAME INVOLVED IN LITIGATION AND EVENTUALLY LOST ALL THEIR RIGHTS TO THE MINE.

IN 1935 I BUILT A MILL ON THE MUSICK MINE FOR THE MINERALS EXPLORATION COMPANY AND HAD CHARGE OF THE OPERATION OF BOTH THE MINE AND THE MILL FOR TWO YEARS. WE WERE ONLY ABLE TO HANDLE 22 TONS PER DAY IN THIS SMALL MILL, BUT WE MADE A PROFIT OF \$18,000.00 ON A PRODUCTION OF \$101,000.00 NET SMELTER AND MINT RETURNS. THIS MINE WAS SHUT DOWN BY THE PRESIDENT OF THE COMPANY IN THE FALL OF 1937, AS HE WAS NOT WILLING TO SPEND ANY MONEY ON DEVELOPMENT.

IN 1935 A GROUP OF PEOPLE OPERATING UNDER THE NAME OF EVENING STAR MINES CO., BUILT A FIFTY-TON FLOTATION MILL ON THE CHAMPION MINE. DUE TO POOR MANAGEMENT AND EXCESSIVE EXPENDITURES THIS COMPANY FOLDED UP VERY SHORTLY AFTER PRODUCTION STARTED.

IN 1934, F. DALE WYATT AND ASSOCIATES STARTED WORK ON THE HELENA MINE. WITHOUT ANY DEVELOPMENT THEY WALKED INTO THIS MINE, WHICH HAD LAID IDLE SINCE 1906 AND SHIPPED ORE DIRECT TO THE U.S. SMELTING & REFINING COMPANY, WHICH NETTED THEM \$21,187.27 AFTER FREIGHT AND TREATMENT. THEY THEN FORMED A CORPORATION AND BUILT A FORTY-TON MILL ON THE PROPERTY. DISPUTES AROSE AMONG THE STOCKHOLDERS AND NOT HAVING PROPER UNDERGROUND MANAGEMENT, THEY SOON FOUND THEMSELVES OUT OF ORE.

IN 1937 MR. WILLIAM REEVES, A MINE LESSEE FROM THE COUER-DE-ALENE DISTRICT, TOOK A LEASE ON THE HELENA MINE AND MILL, AND IN 100 DAYS OF OPERATION PRODUCED CONCENTRATES WHICH YIELDED A NET SMELTER RETURN OF ABOUT \$50,000.00.

BESIDES THE PRODUCTION FROM THE OLD OPERATIONS OF THE OXIDIZED ZONE, THE RECENT PRODUCTION IN TERMS OF NET SMELTER RETURNS, HAS BEEN APPROXIMATELY \$101,000.00 FROM THE MUSICK MINE, \$200,000.00 FROM THE HELENA MINE, AND \$12,000.00 FROM THE NOONDAY MINE. I DO NOT HAVE THE FIGURES ON THE RECENT PRODUCTION FROM THE CHAMPION MINE, BUT IT IS PROBABLY CONSIDERABLY IN EXCESS OF \$100,000.00.

IN 1939 THE H & H MINES COMPANY TOOK A LEASE AND OPTION TO PURCHASE ON THE CHAMPION, MUSICK AND NOONDAY MINES. I ASSISTED IN THIS COMPANY DEVELOPMENT WORK IN SEVERAL PLACES IN THE MUSICK AND NOONDAY MINES. I DID THIS WORK ON A CONTRACT BASIS AND FOUND COMMERCIAL ORE FOR THE COMPANY IN SEVEN OF THE NINE PROPOSED HEADINGS.

DURING 1940 AND 1941, THE H & H COMPANY CONCENTRATED ALL THEIR DEVELOPMENT ON THE CHAMPION MINE. FROM THE AMOUNT OF WORK DONE, I WOULD ESTIMATE THAT THE H & H COMPANY SPENT OVER \$500,000.00 ON THESE THREE MINES.

IN 1942 THEY BUILT A SELECTICE FLOTATION MILL ON THE CHAMPION MINE. AFTER MILLING 12,775 TONS, THEY CEASED OPERATION IN AUGUST OF 1942, DUE TO THE FACT THAT IT WAS IMPOSSIBLE TO GET LABOR DURING THE WAR AND WHAT LABOR THEY HAD DID NOT PRODUCE BUT A VERY SMALL PROPORTION OF THE AMOUNT NORMALLY EXPECTED PER MAN SHIFT.

IN DECEMBER 1944, I RETURNED TO THE DISTRICT, AFTER SPENDING THREE YEARS MINING TUNGSTON AND ANTIMONY IN SOUTHERN CALIFORNIA. I DID A LITTLE PREPARATION WORK AT THE NOONDAY AND MUSICK MINES LAST SUMMER (1945) FOR THE PRESENT LEASEHOLDERS."

SINCE THE COMPLETION OF THE REPORT QUOTED, THE H & H MINES COMPANY ABANDONED THEIR LEASE AND OPTION ON THE CHAMPION MINE AND MR. F. J. BARTELS, THE OWNER, DURING THE YEAR 1946, SHIPPED TO THE TACOMA SMELTER 202.77 TON OF ORE WHICH YIELDED A RETURN BEFORE COSTS, OF \$15,065.37 WHICH IS \$74.30 PER TON.

KENNETH O. WATKINS TOOK A LEASE AND OPTION TO PURCHASE ON THE HELENA MINE FROM THE OWNER, WHICH LEASE AND OPTION HAS BEEN ASSIGNED TO THE ISSUER. IN THE YEAR 1946 WATKINS DROVE THE LOWER LEVEL OF THE HELENA MINE UNDER ORE SHOOTS FROM WHICH WILLIAM REEVES TOOK HIS ORE IN 1937. ORE FROM THIS DEVELOPMENT DRIFT WAS SHIPPED TO THE SMELTER. THE 106.88 TON IN THIS SHIPMENT HAD A GROSS PAID FOR VALUE OF \$3,890.10 OR \$31.22 PER TON. AFTER DEDUCTING FREIGHT AND SMELTING CHARGES, THIS ORE YIELDED \$2,421.39 OR \$22.65 PER TON. OTHER MINES IN THE DISTRICT HAVE BEEN IDLE, EXCEPT FOR A SMALL AMOUNT OF DEVELOPMENT WORK.

BUT I BELIEVE THERE ARE LESS THAN 300 ACTIVE LEGITIMATE LOCATIONS AT THE PRESENT TIME. I KNOW OF OVER 400 ADITS OF VARYING LENGTHS AND THERE ARE UNDOUBTEDLY MANY HIDDEN PORTALS WHICH I HAVE NEVER SEEN.

I SHALL NOT TAKE THE TIME OR SPACE TO DISCUSS ALL OF THE DEVELOPMENTS IN THE DISTRICT, BUT WILL BRIEFLY MENTION THE DEVELOPMENT AT SOME OF THE MORE IMPORTANT MINES.

IN ROUND FIGURES THERE IS 14,000 FEET OF UNDERGROUND DEVELOPMENT AT THE CHAMPION MINE. MOST OF THIS IS IN EXCELLENT CONDITION, WITH AIR LINE AND TRACK IN GOOD SHAPE.

THERE IS 5,000 FEET OF UNDERGROUND DEVELOPMENT AT THE MUSICK, BUT THE UPPER LEVELS ARE MINED OUT AND ABANDONED. THE MAIN, OR CROSSCUT LEVEL IS IN GOOD CONDITION FOR MOST OF ITS LENGTH. ALL OF THE ORE IN THE MUSICK LIES BELOW THIS LEVEL, AND IS DEVELOPED BY A DRIFT FROM A 65-FOOT WINZE. THERE ARE TWO ORE SHOOTS, EACH 200 FEET LONG, AND AVERAGING 4 TO 4-1/2 FEET WIDE, DEVELOPED ON THIS WINZE LEVEL.

THERE IS APPROXIMATELY 3,000 FEET OF UNDERGROUND DEVELOPMENT CONSISTING OF 7 LEVELS, ALL DRIFTS INTO THE HILL ON THE VEIN AT THE HELENA MINE. THE 4 AND 7 LEVELS ARE THE MAIN WORKING LEVELS, AND BOTH HAVE TRACKS IN FAIR CONDITION. I PREPARED THE HELENA MINE FOR PRODUCTION LAST NOVEMBER (1945) JUST BEFORE THE SNOWS CAME.

THERE ARE THREE LEVELS, APPROXIMATELY 2500 FEET, DEVELOPED IN THE NOONDAY MINE. THE UPPER LEVEL IS STOPED OUT AND ABANDONED; THE OTHER TWO LEVELS ARE BOTH OPEN AND IN GOOD SHAPE. THE NOONDAY HAS SOME VERY GOOD ORE EXPOSED, BUT THE ORE SHOOTS ARE SHORTER THAN IN SOME OF THE OTHER MINES. THERE IS A CROSSCUT FROM THE No. 3 LEVEL OF THE NOONDAY TO A PARALLEL VEIN ON THE SAME PROPERTY KNOWN AS THE MAGGIE VEIN. THIS SHOWS AN ORE SHOOT THE LENGTH OF WHICH HAS NOT BEEN DETERMINED, WHICH HAS 312 FEET OF BACKS TO THE SURFACE. SAMPLES TAKEN ON THE SURFACE AVERAGE $\frac{1}{2}$ OZ. GOLD AND SAMPLES TAKEN IN THE VEIN AT THIS DEVELOPED LEVEL HAVE AN AVERAGE GOLD VALUE OF .54 OZ. THIS ORE IS STILL ALMOST COMPLETELY OXIDIZED. THIS ORE SHOOT LIES UNDER THE FLAT TOP OF GROUSE MOUNTAIN, WHERE OXIDATION GOES MUCH DEEPER THAN IN MOST PARTS OF THE DISTRICT.

THERE IS OVER 2,000 FEET OF DEVELOPMENT WORK AT THE RIVERSIDE MINE. THIS IS MOSTLY ONE LONG DRIFT ON THE VEIN WHICH ATTAINS A DEPTH IN EXCESS OF 1,000 FEET. THE PORTAL OF THIS MINE HAS BEEN CAVED SINCE 1923. IT IS APPARENT FROM THE DUMP THAT THERE IS CONSIDERABLE COPPER-ZINC ORE IN THIS MINE. I HAVE TALKED WITH SEVERAL OLD MINERS WHO WORKED IN THIS TUNNEL, AND THEY ALL STATE THAT THERE IS ONE ORE SHOOT OVER 400 FEET LONG AND WIDER THAN THE DRIFT IN THIS MINE. THIS ORE BEING BASE AND CARRYING VERY LITTLE GOLD, NO ATTEMPT WAS MADE TO WORK IT IN THE EARLY DAYS.

THE OREGON-COLORADO MINE HAS DEVELOPMENT ALMOST IDENTICAL AS FAR AS LENGTH OF DRIFT AND DEPTH ATTAINED, AS THE RIVERSIDE. THE ORE SHOOTS ARE SHORTER BUT THERE ARE SEVERAL OF THEM. THE CHIEF VALUE OF THE OREGON-COLORADO ORE IS COPPER AND SILVER, WHICH MAKES IT DIFFERENT THAN ANY OTHER MINE IN THE DISTRICT.

THE SUNSET MINE HAS ABOUT 3,000 FEET OF DEVELOPMENT, CONSISTING OF A NUMBER OF DRIFTS ON THREE DIFFERENT PARALLEL VEINS.

THE COSMOS MINE HAS ABOUT 2,000 FEET CONSISTING OF A NUMBER OF SHORT CROSSCUTS AND DRIFTS.

I HAVE NOT BEEN IN THE WORKINGS AT THE MAYFLOWER MINE, BUT FROM THE SIZE OF THE DUMPS I SHOULD GUESS THERE IS OVER 1,000 FEET OF UNDERGROUND WORKINGS.

THERE IS ABOUT 600 FEET OF CROSSCUT AND DRIFT ON THE GOLD CROSS MINE, AND ABOUT 400 FEET ON THE EL CAPITAN.

DEVELOPMENT ON OTHER MINES SHOWING SOME COMMERCIAL ORE, IS IN EXCESS OF 10,000 FEET, BUT I WILL NOT TAKE THE SPACE TO DISCUSS THEM HERE."

NO WORK HAS BEEN DONE BY THE ISSUER. THE VALUE OF THE HELENA MINE HAS BEEN GREATLY INCREASED BY WORK DONE IN 1946 BY KENNETH O. WATKINS BEFORE ASSIGNMENT TO THE ISSUER. THIS WORK CONSISTED OF DRIVING No. 7 LEVEL AHEAD AND PROVING THE DOWNWARD EXTENSION OF THE RICH ORE BODY ON THE No. 4 LEVEL 268 FEET ABOVE.

BUILDINGS AND EQUIPMENT

THERE IS A 20-MAN BUNK HOUSE AND COOK HOUSE IN FIRST CLASS CONDITION AT THE HELENA MINE. A SHOP AND ORE BIN ARE LOCATED AT THE PORTAL OF THE 700 LEVEL, WHICH IS THE LEVEL FROM WHICH ORE WAS PRODUCED THIS PAST YEAR. THE MINE IS EQUIPPED WITH A 200 CUBIC FOOT COMPRESSOR, AIR DRILLS, MINE CARS, ETC.

THE MUSICK MINE HAS A 30-MAN BUNK HOUSE AND COOK HOUSE WHICH NEEDS SOME REPAIR, DUE TO THE FACT IT HAS NOT BEEN USED FOR FOUR YEARS. THE MINE IS EQUIPPED WITH TRACK AND AIR LINES, BUT THERE IS NO MACHINERY ON THE PROPERTY.

THE CHAMPION MINE HAS AIR LINE AND TRACK IN FAIR CONDITION IN ALL THE MAIN WORKING LEVELS. THE BUILDINGS LISTED BELOW ARE LOCATED AT THE CHAMPION MINE AND USE OF ALL OF THESE BUILDINGS ARE INCLUDED IN THE PURCHASE CONTRACT:

ONE LARGE BUNK HOUSE AND COOK HOUSE COMBINED, CONTAINING A VERY LARGE MODERN KITCHEN WITH OIL BURNING TWO OVEN RANGE, LARGE DINING ROOM, OFFICE, MAP ROOM, 32 2-MAN BEDROOMS AND 1 20-MAN BEDROOM. THIS BUILDING IS VERY WELL CONSTRUCTED.

SEVEN PRIVATE HOUSES OF VARIOUS SIZES.

A TUNNEL HOUSE AT THE 1200 LEVEL PORTAL, CONTAINING A NUMBER OF STORAGE ROOMS, MINE OFFICE, SHOWERS AND LARGE CHANGE ROOM.

A WELL CONSTRUCTED SNOW SHED CONNECTING THE TUNNEL HOUSE TO THE POWER HOUSE AND THE MILL.

A MILL BUILDING HOUSING A 100-TON SELECTIVE FLOTATION MILL. THIS MILL BUILDING WAS BUILT IN 1935 AND IS IN EXCELLENT CONDITION.

IN THE MILL BUILDING BUT NOT A PART OF THE LEASE FROM MR. BARTELS, OWNER OF THE CHAMPION MINE, IS THE 100-TON SELECTIVE FLOTATION MILL WHERE THE ISSUER EXPECTS TO MILL ORE FROM ALL THE MINES OWNED AND LEASED.

THE MACHINERY MAKING UP THIS MILL WILL NOT BE LISTED AS IT TAKES TOO MUCH SPACE, BUT IT CAN BE STATED THAT THE MILL IS FULLY CAPABLE OF HANDLING 100 TON PER DAY, IS WELL DESIGNED AND OPERATED SUCCESSFULLY FOR A FEW MONTHS BEFORE THE SHUTDOWN IN 1942 DUE TO THE WAR.

THE MACHINERY IN THIS MILL AND A 170x40 FOOT SHOP BUILDING SITUATED BETWEEN THE MILL AND THE TUNNEL HOUSE ARE BEING PURCHASED BY THE ISSUER FROM MR. JOHN C. HIGGINS, WHO OPERATED THE CHAMPION MINE IN 1942 UNDER THE NAME OF H & H MINES CO.

TONNAGE DEVELOPED AND INDICATED

THERE IS A CONSIDERABLE DIFFERENCE OF OPINION AMONG ENGINEERS REGARDING WHAT CONSTITUTES TRULY BLOCKED OUT ORE. IN ORDER TO AVOID ANY MISUNDERSTANDING ON THIS POINT, THE ORE DEVELOPED, AND DISCUSSED BELOW, WILL BE CONSIDERED AS HIGHLY PROBABLE OR INDICATED ORE AND IT WILL BE STATED WHETHER THIS ORE IS OPENED UP ON ONE, TWO OR THREE SIDES.

INDICATED ORE AS FAR AS THIS DISCUSSION IS CONCERNED, IS CONSIDERED AS ORE THAT HAS BEEN OPENED UP, MEASURED AND SAMPLED ON AT LEAST ONE SIDE; POSSIBLE ORE IS THAT WHICH IS NOT PROVEN ON ANY SIDE EXCEPT ON THE SURFACE OR ON AN UNDERGROUND LEVEL OVER 100 FEET FROM THE ASSUMED PROBABLE ORE BODY.

A GOOD PROPORTION OF THE DEVELOPMENT DRIFT IN THE MAJOR MINES HAS BEEN IN ORE. THE FOLLOWING LIST GIVES THE PERCENTAGE OF DRIFT WHICH WAS IN ORE IN THESE MINES:

CHAMPION 44% -- MUSICK 50% -- NOONDAY 30%
HELENA 33% -- LEAD CRYSTAL 80% -- OREGON-COLORADO 36%

NO ATTEMPT IS MADE TO ASSIGN A VALUE TO THE POSSIBLE ORE AS IT HAS NOT BEEN THOROUGHLY SAMPLED.

HELENA MINE

BETWEEN THE No. 4 AND No. 7 LEVELS PROVEN FOR ITS ENTIRE LENGTH ON THE No. 4 LEVEL, BUT ONLY OPENED UP FOR 80 FEET ON THE 700 LEVEL BY LAST YEAR'S WORK, IS AN ORE BODY WITH THE FOLLOWING APPROXIMATE DIMENSIONS.

250' LONG X 160' VERTICAL X 4' WIDE

THIS TYPE OF SULPHIDE ORE RUNS ABOUT 11 CUBIC FEET TO THE TON. THIS BLOCK OF ORE AND ANOTHER BLOCK BETWEEN THE No. 6 AND No. 4 LEVEL ARE NOT POSITIVE, BUT ARE ALMOST CERTAIN ORE. NO RAISE HAS BEEN RUN THROUGH THESE ORE BODIES TO PROVE THEIR VERTICAL CONTINUITY SO THEY ARE CLASSED AS HIGHLY PROBABLE.

CHAMPION MINE

ORE DEVELOPED IN THE CHAMPION, MUSICK, AND OREGON-COLORADO MINES IS LISTED BELOW BY DIRECT QUOTATION FROM THE REPORT MADE IN 1946 BY KENNETH O. WATKINS.

"BLOCKED ON THREE SIDES (SAMPLED AT 5' INTERVALS)

WEST OF TERRY RAISE, BETWEEN 900-FOOT AND 1050-FOOT LEVELS.
(TERRY RAISE IS INCLINE RAISE ON THE VEIN WEST OF THE 1200-FOOT CROSSCUT AND ALSO WEST OF THE VERTICAL RAISE.)

290' LONG X 170' VERTICAL X 2-1/4' WIDE * 11 CU. FT. PER TON 10,084 TONS

EAST OF TERRY RAISE, BETWEEN 900 AND 1,000 FOOT LEVELS

208' LONG X 110' VERTICAL X 2-1/2' WIDE * 11

5,175 TONS
15,259

BLOCKED ON TWO SIDES (BOTH SIDES SAMPLED AT 5' INTERVALS)

900 EAST No. 2 ORE BODY BETWEEN 800 AND 900 FOOT LEVELS

~~140' LONG BY 95' VERTICAL X 2.2' WIDE~~

1050 EAST

152' LONG X 170' VERTICAL X 2' WIDE

INDICATED ORE (ONE SIDE SAMPLED)

900 WEST

283' LONG X 100' VERTICAL X 3-1/2' WIDE

1050 WEST

290' LONG X 100' VERTICAL X 2-1/4' WIDE

1050 EAST

125' LONG X 100' VERTICAL X 1-1/2' WIDE

900 EAST -- ORE BODIES No. 1 TO 8 INCLUSIVE

1,179' LONG X 100' VERTICAL X 2' WIDE

REFER TO
STATEMENT
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POSSIBLE ORE

THERE IS NO GEOLOGICAL REASON FOR NOT EXPECTING THESE ORE BODIES TO EXTEND DOWN TO THE UNDEVELOPED PART OF THE 1200 LEVEL AND EVEN LOWER, AS ORE HAS BEEN FOUND IN THAT SMALL PART OF THE MINE THAT HAS BEEN OPENED UP ON THE 1200 LEVEL.

SURFACE WORK HAS PROVEN EXISTENCE OF ORE BODIES ON THE UNDEVELOPED MAELE, EXCELSIOR AND OTHER VEINS ON THE CHAMPION PROPERTY.

MUSICK MINE

BLOCKED ON TWO SIDES (BOTH SIDES SAMPLED)

BETWEEN WINZE LEVEL AND FLOOR OF MAIN DRIFT

400' LONG X 60' VERTICAL X 4' WIDE

INDICATED ORE, (ONE SIDE SAMPLED)

BETWEEN WINZE LEVEL AND FLOOR OF 600 LEVEL, BUT NOT REACHED YET BY THE WINZE LEVEL DRIFT

150' LONG X 60' VERTICAL X 6' WIDE

POSSIBLE ORE

EXTENSION OF 3 ORE BODIES FROM THE WINZE LEVEL DOWN TO THE CHAMPION 1200' LEVEL

500' LONG X 480' VERTICAL X 4-1/2' WIDE

OREGON-COLORADO MINE

BLOCKED ON TWO SIDES

I HAVE NEVER BEEN IN THIS MINE AS THE PORTAL IS CAVED, BUT I TAKE THE FIGURES BELOW FROM THE REPORT OF MR. W. W. ELMER, WELL KNOWN CONSULTING MINING ENGINEER.

THE ORE IN THE SHOOTS LISTED BELOW IS CUT ON THE MAIN DRIFT WHICH GOES IN 2,000 FEET. A DRIFT AT A HIGHER LEVEL CALLED THE CONFIDENCE TUNNEL CUTS SOME OF THESE ORE SHOOTS AND THE ORE GOES TO THE SURFACE AND IS EXPOSED IN OPEN CUTS SO I THINK WE ARE SAFE IN CALLING THIS BLOCKED ON TWO SIDES. ACCORDING TO MR. ELMER'S REPORT, THE FOLLOWING FOUR ORE BODIES ARE ENCOUNTERED IN THE FIRST 1100 FEET OF DRIFT.

50' LONG X 75' AVERAGE DISTANCE TO SURFACE X 2-1/2' WIDE

137' " X 250' " " " " X 2-1/2' "

50' " X 350' " " " " X 2-1/2' "

140' " X 550' " " " " X 2-1/2' "

INDICATED ORE

ACCORDING TO OLIVER GILBERTSON, WHO HAD CHARGE OF THE LATER WORK ON THE PROPERTY, THREE MORE ORE BODIES WERE ENCOUNTERED BETWEEN THE 1100-FOOT POINT AND THE FACE WHICH IS IN 2,000 FEET. IF WE GIVE THESE ORE BODIES THE SAME WIDTH AND THE LENGTH REPORTED BY GILBERTSON, WE WILL GET THE FOLLOWING ADDITIONAL TONNAGE:

360' LONG X 750' AVERAGE DISTANCE TO SURFACE X 2-1/2' WIDE

OTHER MINES

MEASURED AND CALCULATED TONNAGES ARE DEVELOPED AND SAMPLED IN THE NOONDAY, LEAD CRYSTAL, SUNSET AND OTHER MINES IN THE DISTRICT, ALL OF WHICH ARE POTENTIAL MILL FEED FOR THE ISSUER'S MILL.

METALLURGY

"FROM 1875 TO 1917 ALL ORE MILLED IN THE DISTRICT WAS PUT THROUGH STAMP MILLS. EVEN-THO SOME OF THIS ORE WAS ALMOST COMPLETELY OXIDIZED, I AM TOLD THAT THE AVERAGE RECOVERY WAS FROM 45% TO 55% OF THE GOLD VALUE. THIS IS PROBABLY DUE TO THE FACT THAT THE GOLD IN NEARLY ALL OF THE BOWENIA ORES IS VERY FINE AND STAMP MILLS DO NOT AS A RULE RECOVER THIS

AS THE BASE ORES WERE ENCOUNTERED DURING THESE OLD OPERATIONS, SOME EFFORT WAS MADE TO SAVE THEM BY GRAVITY CONCENTRATION ON TABLES. ONLY IN A FEW CASES WERE THESE CONCENTRATES RICH ENOUGH TO SHOW A PROFIT BECAUSE THEY HAD TO BE HAULED LONG DISTANCES BY TEAM AND WAGON AND WHEN THEY REACHED A SMELTER THERE WAS A CONSIDERABLE ZINC PENALTY, AS IT WAS NEARLY IMPOSSIBLE TO COMPLETELY SEPARATE THE ZINC FROM THE LEAD AND COPPER UNDER THE METHODS USED.

THE FIRST ATTEMPT TO USE MODERN MILLING METHODS WAS AT THE NOONDAY MILL IN 1934. WE USED BULK FLOTATION, MAKING ONE CONCENTRATE CONTAINING ALL THE SULPHIDE MINERALS. OUR RECOVERY OF THE GOLD WAS QUITE HIGH AFTER WE WORKED OUT THE CORRECT REAGENTS.

MOST OF THE ORE MILLED AT THE MUSICK WAS ALSO CONCENTRATED INTO ONE CONCENTRATE CONTAINING ALL THE SULPHIDES. SHORTLY BEFORE THE MILL WAS SHUT DOWN, WE CHANGED TO SELECTIVE FLOTATION, WHICH WORKED VERY WELL.

THE H & H MILL, BUILT ON THE CHAMPION MINE, IS CONSTRUCTED TO MAKE TWO OR THREE FLOTATION PRODUCTS.

VERY EXTENSIVE FLOTATION TESTS HAVE BEEN MADE ON VARIOUS BOHEMIA ORES BY MINERALS SEPARATION COMPANY, U.S. SMELTING, REFINING & MINING COMPANY, AND GENERAL ENGINEERING COMPANY OF SALT LAKE CITY. THE MOST RECENT AND EXHAUSTIVE WORK WAS DONE BY THE GENERAL ENGINEERING COMPANY."

LISTED BELOW ARE THE AVERAGE RECOVERIES OF THE VARIOUS METALS MADE BY MANY GENERAL ENGINEERING COMPANY TESTS ON THE CHAMPION ORE, GENERAL ENGINEERING AND U.S. SMELTING TESTS ON THE MUSICK ORE, AND U.S. SMELTING TESTS ON HELENA ORE.

	<u>CHAMPION</u>	<u>MUSICK</u>	<u>HELENA</u>	<u>AVERAGE RECOVERY</u>
GOLD	89.4%	90.5%	93.8%	91.2%
SILVER	87.7	85.4	88.9	87.3
COPPER	90.6	87.8	83.7	87.7
LEAD	81.5	96.9	92.6	90.3
ZINC	86.8	81.8	83.2	83.6

EXPERIENCE IN THE NOONDAY, MUSICK AND CHAMPION MILLS IN RECENT YEARS HAS PROVEN THAT A BETTER RECOVERY CAN BE OBTAINED IN DAY BY DAY OPERATION THAN IN THESE MILL TESTS, THE REASON BEING THAT MILL TESTS ARE MADE ON RELATIVELY SMALL LOTS OF ORE AND THERE IS NOT ENOUGH TIME TO MAKE ACCURATE ADJUSTMENT OF THE AMOUNT OF REAGENT FED.

TITLES AND CONTRACT TERMS

THE HELENA MINE CONSISTING OF THREE PATENTED AND SEVEN UNPATENTED MINING CLAIMS HAS BEEN CONSIDERED AS A UNIT FOR MANY YEARS. L. M. CAPPS OF BLACKFOOT, IDAHO HAS BEEN THE OWNER FOR OVER TWENTY YEARS. ON APRIL 10, 1945 HE ENTERED INTO A CONTRACT TO SELL TO F. DALE WYATT OF SPRINGFIELD, OREGON. ON NOVEMBER 1, 1945 MR. WYATT SOLD ALL HIS RIGHTS UNDER THIS CONTRACT TO KENNETH O. WATKINS. DEEDS FROM BOTH MR. CAPPS AND MR. WYATT ARE NOW HELD IN ESCROW AT THE U.S. NATIONAL BANK OF PORTLAND, EUGENE BRANCH, AND MR. WATKINS HAS TRANSFERRED ALL HIS RIGHTS UNDER THIS ESCROW AND CONTRACT TO THE ISSUER.

THIS CONTRACT CALLS FOR COMPLETE PURCHASE OF THE MINE ON 10% OF NET RETURN ROYALTY BASIS, WITH FIXED MONTHLY PAYMENTS OF \$100.00 PER MONTH UNTIL APRIL 10, 1948, WITH FIXED ANNUAL PAYMENTS OF \$4,500.00 APRIL 10, 1948 AND \$2,000.00 EACH APRIL 10 THEREAFTER UNTIL THE FULL PRICE HAS BEEN PAID. ALL ROYALTIES ARE TO APPLY ON NEXT DUE ANNUAL PAYMENT. TOTAL PURCHASE PRICE OF MINE IS \$38,150.00 OF WHICH \$8,050.00 HAS BEEN PAID BY KENNETH O WATKINS BEFORE ASSIGNMENT.

IN 1940 JOHN BREEDING LOCATED A NUMBER OF MINING CLAIMS IN THE DISTRICT WHICH HE LATER BEHEADED TO OTHERS. SOME OF THESE CLAIMS OVERLAP PARTS OF THE WESTERN CLAIMS IN THE HELENA GROUP. THERE IS NO OTHER CLOUD ON THE TITLE OF THE HELENA CLAIMS AND INASMUCH AS THE HELENA LOCATIONS ARE NEARLY THIRTY YEARS OLDER AND HAVE BEEN HELD AS A UNIT ALL THAT TIME, THESE LOCATIONS BY JOHN BREEDING ARE PROBABLY OF NO SERIOUS THREAT TO THE TITLE. IN ANY EVENT, THE BREEDING LOCATIONS DO NOT OVERLAP ANY PART OF THE MINE FROM WHICH ORE

THE CHAMPION MINE CONSISTING OF ONE PATENTED AND 26 UNPATENTED CLAIMS HAS BEEN HELD UNDER THE SAME OWNERSHIP FOR OVER TWENTY YEARS WITH THE EXCEPTION THAT IT WAS ORIGINALLY HELD UNDER THE NAME OF THE BARTELS MINING COMPANY OF WHICH MR. FRED J. BARTELS WAS THE PRINCIPAL STOCKHOLDER. IN MORE RECENT YEARS MR. BARTELS BOUGHT OUT ALL THE OTHER STOCKHOLDERS AND CLOSED THE CORPORATION.

THE ISSUER HOLDS A CONTRACT TO PURCHASE ALL THAT PART OF THE CHAMPION MINE BELOW THE 900 FOOT LEVEL AND THE BUILDINGS AND IMPROVEMENTS ON THE PROPERTY FOR \$75,000.00. 15% ROYALTY ON DEVELOPED ORE AND 10% ROYALTY ON UNDEVELOPED ORE WILL APPLY ON NEXT DUE MONTHLY INSTALLMENT AND FULL PURCHASE PRICE. MONTHLY PAYMENTS START AT \$300.00 PER MONTH AND INCREASE TO \$1,000.00 PER MONTH BY FEBRUARY 10, 1948. ADDITIONAL PAYMENTS OF \$5,000.00 EACH ARE DUE AUGUST 10, 1947 AND JANUARY 10, 1948. ISSUER HOLDS OPTION TO PURCHASE BALANCE OF CHAMPION MINE FOR AN ADDITIONAL \$75,000.00 WITHIN THREE YEARS TIME.

THE BUILDINGS ON THE CHAMPION GROUND ARE INCLUDED IN THE PURCHASE CONTRACT FROM MR. BARTELS. THE MACHINERY WHICH THE ISSUER IS BUYING FROM H & H MINES CO. RESTS IN THE BUILDINGS OWNED BY MR. BARTELS BY VIRTUE OF AN AGREEMENT BETWEEN BARTELS AND H & H MINES CO. THE PRESENT AGREEMENT BETWEEN THE ISSUER AND MR. BARTELS RECOGNIZES THE COMPLETE OWNERSHIP OF THE MACHINERY BY JOHN C. HIGGINS AND THE ISSUER AND THE RIGHT TO REMOVE THE SAME AT ANY TIME. THIS MACHINERY MAKING UP THE 100 TON SELECTIVE FLOTATION MILL AND CONSIDERABLE MINE EQUIPMENT AS WELL AS MILL SUPPLIES ON HAND IS BEING PURCHASED FROM JOHN C. HIGGINS FOR \$15,000.00, \$500.00 OF WHICH HAS BEEN PAID; BALANCE DUE JULY 1ST, 1947.

PURCHASE CONTRACTS ON HELENA AND CHAMPION MINES AND MILL MACHINERY ALL HAVE FORFEITURE CLAUSES CALLING FOR LOSS OF CONTRACT RIGHTS IF PAYMENTS ARE NOT MADE AFTER NOTICE OF DEFAULT.

THE FOURTEEN CLAIMS MAKING UP THE MUSICK MINE HAVE BEEN CONSIDERED AS A UNIT FOR MANY YEARS. ORIGINAL LOCATIONS ARE ABOUT 50 YEARS OLD. THE TAR BABY MINING COMPANY OF SALT LAKE CITY, UTAH, HOLDS COMPLETE TITLE, HAVING BOUGHT OUT IN FULL ALL THE EQUITY OF L. M. CAPPS, H. S. CLINE, H & H MINES COMPANY AND KENNETH O. WATKINS. THE ISSUER HOLDS A 15% NET ROYALTY TEN YEAR LEASE DIRECT FROM THE TAR BABY MINING COMPANY AS LONG AS THE ISSUER WORKS THE MINE.

THE OREGON-COLORADO MINE HAS BEEN PATENTED SINCE 1927 AND THE ISSUER HOLDS A WARRANTY DEED FROM BERYL TOM OF ALSEA, OREGON FOR THREE AND A FRACTION CLAIMS, BEING ALL OF PATENT SURVEY NO. 453 EXCEPT THE SAMPSON AND A SMALL FRACTION OF THE DORA CLAIM, AND COVERING ALL THE DEVELOPED PART OF THE MINE.

12. THE ISSUER HAS HAD NO FUNDS FROM THE SALE OF SECURITIES, THE LEVY OF ASSESSMENTS, OR FROM OTHER SOURCES IN THE PAST TWO YEARS WITH EXCEPTION OF \$3.20 FROM THE SALE OF QUALIFYING SHARES OF STOCK TO THE DIRECTORS OTHER THAN KENNETH O. WATKINS.

13. NO EXPENDITURES HAVE BEEN MADE BY THE ISSUER IN THE PAST TWO YEARS, BUT \$4,000.00 HAS BEEN ADVANCED BY KENNETH O. WATKINS DURING MARCH AND APRIL, 1947 TO MAKE PROPERTY AND MACHINERY PAYMENTS AND TO PAY ORGANIZATION EXPENSES.

14. THE ONLY TRANSFER OF STOCK, SECURITIES OR ANYTHING ELSE OF VALUE, MADE TO ANY OFFICER, DIRECTOR OR PROMOTER, HAS BEEN THE ISSUANCE TO KENNETH O. WATKINS OF 1,000,000 SHARES FOR ASSIGNMENT OF HIS HELENA CONTRACT, HIS OPTION TO PURCHASE H & H MACHINERY AND HIS EFFORTS IN GETTING ALL THE OTHER LEASES AND OPTIONS FOR THE BENEFIT OF THE ISSUER; AND THE INSURANCE OF 200,000 SHARES OF STOCK TO BERYL TOM FOR WARRANTY DEED TO THE OREGON-COLORADO MINE. ONE \$10.00 BOND AND 80 SHARES OF COMMON STOCK HAVE BEEN SUBSCRIBED FOR AND THE STOCK ISSUED TO THE OTHER FOUR DIRECTORS.

15. THIS OFFERING OF ASSESSABLE SHARES OF COMMON STOCK OFFERED UNDER REGULATION A-M, TOGETHER WITH THE OFFERING OF BONDS UNDER REGULATION A, WILL YIELD \$97,200.00 BEFORE PAYMENT OF BROKERAGE. IF FULL BROKERAGE OF 25% IS PAID ON THIS AMOUNT, THE NET RETURN TO THE ISSUER'S TREASURY WILL BE \$72,900.00. ACTUALLY THE NET RETURN TO THE ISSUER'S TREASURY WILL BE A SOMEWHAT LARGER SUM AS KENNETH O. WATKINS WILL ACTIVELY ENGAGE IN SALE OF SECURITIES UNTIL ENOUGH FUNDS ARE IN THE TREASURY TO START PRODUCTION. NO COMMISSION WILL BE PAID ON STOCK SOLD BY WATKINS SO NET INCOME TO ISSUER'S TREASURY WILL BE LARGER THAN THE AMOUNT CALCULATED. ALTHO 25% IS SET AS THE MAXIMUM COMMISSION TO BE PAID BROKERS FOR SALE OF STOCK, IT IS THE ISSUER'S INTENT TO PAY 15% COMMISSION UNLESS IT IS FOUND NECESSARY TO PAY HIGHER COMMISSION TO COMPLETE THE SALE OF THIS ISSUE.

THE ESTIMATE GIVEN BELOW SHOWS THE ANTICIPATED USE OF THE TOTAL PROCEEDS REALIZED FROM THE SALE OF BOTH STOCKS AND BONDS. THIS ESTIMATE IS CORRECT AS FAR AS CAN BE ASCERTAINED, BUT THE DIRECTORS WILL MAKE VARIATIONS IN THESE EXPENDITURES IF IT SEEMS TO BE TO THE BEST INTERESTS OF THE ISSUER.

RETURN OF WATKINS ADVANCE	\$ 4,000.00
LEGAL EXPENSE ESTIMATE	500.00
ACCOUNTING EXPENSE ESTIMATE	500.00
PRINTING, STENOGRAPHIC WORK ESTIMATE	350.00
BROKERAGE ESTIMATE	12,000.00
VALUE WATKINS STOCK TO BE GIVEN AS SALES BONUS, ETC.	2,800.00
CHAMPION MINE & BUILDING (PAYMENT DUE AUGUST 1ST)	5,000.00
H & H MILL MACHINERY (BALANCE DUE)	14,500.00
POWER PLANT (DOWN PAYMENT)	5,568.25
CRUSHER	850.00
CONVEYOR BELT, FILTER COVERS, SAMPLERS AND SMALL ITEMS FOR MILL	3,500.00
ADDITIONAL BUNK HOUSE & COOK HOUSE EQUIPMENT	450.00
TRUCK (DOWN PAYMENT)	885.00
315 CU. FT. AIR COMPRESSOR (DOWN PAYMENT)	2,270.00
ADDITIONAL DRILLS, TOOLS, ETC.	2,500.00
3 MONTHS INSTALLMENT PAYMENTS ON MACHINERY	5,067.89
WATKINS SALARY (5 MONTHS)	2,500.00
WATKINS TRAVEL EXPENSES ESTIMATE	1,500.00
PAYMENTS ON HELENA CONTRACT (3 MONTHS)	300.00
PAYMENTS ON CHAMPION CONTRACT (3 MONTHS)	900.00
OPERATING CAPITAL	35,058.86
	<hr/>
	100,000.00

ADDITIONAL MATERIAL INFORMATION AND SUMMARY OF PROFIT
POSSIBILITIES OF HELENA MINES, INC.

ALTHOUGH ALL MINE INVESTMENTS MUST BE CLASSED AS SPECULATIVE, THE GAMBLE HAS BEEN LARGELY REMOVED FROM THE OPERATIONS OF THE HELENA MINES, INC. AS ORE HAS BEEN BLOCKED OUT AND IS READY TO MINE. OVER 2,000 SAMPLES HAVE BEEN TAKEN TO PROVE THE VALUE OF THE ORE, AND EXTENSIVE MILL TESTS HAVE BEEN MADE WHICH PROVE A HIGH RECOVERY OF THE VALUES.

THE VALUE OF THE ORE PROVEN AND INDICATED IS HIGH ENOUGH TO SHOW A SUBSTANTIAL PROFIT AFTER COSTS OF MINING AND MILLING ARE DEDUCTED. ANY OPERATION STARTING AT THE PRESENT TIME WOULD HAVE CONSIDERABLE DIFFICULTY IN ACQUIRING THE NECESSARY MACHINERY TO BUILD A MODERN MILL, IT BEING PARTICULARLY DIFFICULT TO ACQUIRE ELECTRIC MOTORS, STARTING SWITCHES, ETC. IN THE CASE OF HELENA MINES, INC. WHERE THE MILL IS BEING PURCHASED, COMPLETELY BUILT AND INSTALLED, FROM THE H & H MINES CO., THIS DIFFICULTY IS ELIMINATED AND WE HAVE THE ADDED ADVANTAGE OF BEING ABLE TO BEGIN PRODUCTION WHICH WILL ALLOW US TO GET THE PRESENT HIGH METAL PRICES FOR LEAD, ZINC AND COPPER. IT IS THE OPINION OF MOST MINING EXPERTS THAT THE METAL PRICES WILL CONTINUE HIGH FOR SOME YEARS, DUE TO THE FACT THAT WE HAVE A MARKED SHORTAGE OF LEAD AND COPPER AT THE PRESENT TIME IN THIS COUNTRY WITH NO INDICATION THAT THIS SHORTAGE CAN BE ALLEVIATED SOON.

THERE IS MUCH DISCUSSION REGARDING THE RISE IN THE GOVERNMENT PRICE OF GOLD. WE HAVE NO MORE KNOWLEDGE THAN OTHERS REGARDING THIS MATTER AND DO NOT PROPOSE TO CAPITALIZE ON THE PERSISTENT RUMOR AND OPINION THAT THE PRICE OF GOLD WILL BE INCREASED SOONER OR LATER. IF THE PRICE OF GOLD IS RAISED, WE WILL NATURALLY BENEFIT THEREBY AS 20% TO 50% OF THE PAID FOR VALUE OF BOHEMIA ORES IS ACCOUNTED FOR BY THE GOLD CONTENT.

DURING THE YEARS 1936 AND 1937 THE MINERALS EXPLORATION COMPANY SHIPPED 804.459 TONS OF CONCENTRATES TO THE UNITED STATES SMELTING, REFINING & MINING COMPANY, MIDVALE, UTAH. NET PAYMENT FOR THESE CONCENTRATES, AFTER DEDUCTION OF FREIGHT AND TREATMENT CHARGES, WAS \$45,738.54. THE METAL CONTENT OF THESE SAME CONCENTRATES AT PRESENT PRICES WOULD BE AS FOLLOWS:

1,449.4 OZ.	GOLD	\$ 46,109.91
6,665 "	SILVER	5,999.50
51,620 LBS.	COPPER	8,826.20
286,842 "	LEAD	28,787.77
308,752 "	ZINC	25,319.14
		<u>115,042.52</u>

IF TREATED BY SELECTIVE FLOTATION WITH THE SAME RECOVERY OF EACH METAL AND SENT TO TACOMA, U.S., AND SULLIVAN SMELTERS, THE FREIGHT AND TREATMENT CHARGES WOULD BE (ASSUMING 20% COPPER CONCENTRATE, 50% ZINC CONCENTRATE AND 60% LEAD CONCENTRATE) \$18,086.63. THIS WOULD LEAVE A NET OF \$96,955.89 OR \$51,217.35 MORE THAN WAS RECEIVED FROM THE SHIPMENTS IN 1936 AND 1937. THESE FIGURES ARE GIVEN TO SHOW SOME RELATIVE IDEA OF THE ADDITIONAL PROFITS THAT WILL BE REALIZED SINCE THE PRICE OF BASE METALS HAS INCREASED.

IT WILL BE NOTED THAT THE COPPER, LEAD AND ZINC CONTENT PER TON OF ORIGINAL ORE WAS NOT SO VERY HIGH. A GOOD PROPORTION OF THE ORE MILLED IN 1936 AND 1937 CAME FROM THE OXIDIZED ZONE OF THE MINE WHERE THE BASE METAL CONTENT WAS NOT VERY HIGH. THE LEAD, ZINC AND COPPER CONTENT OF THE ORE NOW DEVELOPED IN THE MINE IS MUCH GREATER THAN THAT PRESENT IN THE OXIDIZED ORE.

THIS OPERATION WILL BE IN THE HANDS OF COMPETENT AND EXPERIENCED MEN, THE DIRECTORS OF WHICH ARE:

DR. WM. E. CALDWELL, PROFESSOR OF MINING AT OREGON STATE COLLEGE, FORMERLY INSTRUCTOR OF MINE SURVEYING, MONTANA SCHOOL OF MINES, ASSOCIATE PROFESSOR OF CHEMISTRY AT OREGON STATE COLLEGE AND DURING THE WAR LT. COL. IN THE CHEMICAL WARFARE SERVICE.

KENNETH O. WATKINS, GENERAL MANAGER OF THE COMPANY, WHO HAS HAD MANY YEARS EXPERIENCE IN THE MINING BUSINESS AND HAS BEEN SUPERINTENDENT OF A NUMBER OF MINES PRODUCING GOLD, SILVER, LEAD, COPPER, TUNGSTEN, ANTIMONY AND MERCURY IN OREGON, CALIFORNIA, ARIZONA AND UTAH. HE HAS DESIGNED AND CONSTRUCTED A NUMBER OF PLANTS INCLUDING TWO FLOTATION MILLS.

MR. ALYN CROCKER, EXPERIENCED MINER AND MILL OPERATOR PRESENTLY ENGAGED IN FARMING NEAR EUGENE, OREGON.

MR. T. G. DONACA, REAL ESTATE DEVELOPER, WHO IS INTERESTED IN A NUMBER OF MINING ENTERPRISES.

ATTORNEY FOR THE ISSUER IS MR. EDWARD A. BUTLER OF THE FIRM OF HARRIS, BRYSON, RIDDESBARGER & BUTLER, 201-210 MINER BUILDING, EUGENE, OREGON.

ACCOUNTANTS FOR THE ISSUER ARE PIQUET, LEE & CO., CERTIFIED PUBLIC ACCOUNTANTS, 212 MINER BUILDING, EUGENE, OREGON.

TRUSTEE FOR THE BONDHOLDERS IS MR. LLOYD DENSLOW WHO WAS ASSOCIATED WITH THE FIRST NATIONAL BANK OF EUGENE FOR 18 YEARS WHERE HE HAD CHARGE OF EXCHANGE AND COLLECTIONS. HE HAD CHARGE OF THE TRUST DEPARTMENT OF OREGON SETTLEMENT ASSOCIATION FOR THREE YEARS.

FOR COMPUTING ANTICIPATED PROFITS ON A REASONABLE BASIS, WE SHOW VALUE OF AND CALCULATED RETURNS ON THE ORE FROM THE ORE BODIES WHICH WILL BE MINED FIRST AND MILLED AS SOON AS POWER PLANT IS INSTALLED IN THE MILL.

THE AVERAGE VALUE OF THE HELENA ORE HAS BEEN CALCULATED FROM THE FOUR LOTS OF UNSORTED ORE SHIPPED LAST SUMMER TO TACOMA SMELTER. THIS ORE CAME FROM THE LOWER LEVEL DEVELOPMENT DRIFT AND SHOULD BE REPRESENTATIVE OF THE ORE PROVEN, ESPECIALLY AS ORE MINED IN 1934 AND 1935 ON THE NEXT LEVEL (260 FEET ABOVE) AND SHIPPED TO THE U.S. SMELTING, REFINING & MINING COMPANY SHOWS AN EVEN HIGHER VALUE.

THE MUSICK ORE WAS DEVELOPED BY KENNETH O. WATKINS FOR THE H & H MINING COMPANY IN 1939 AND EACH ROUND WAS SAMPLED AT THAT TIME. THE VALUE USED BELOW WAS THE AVERAGE SAMPLE OF THIS ORE TAKEN FOR GENERAL ENGINEERING MILL TESTS AND IS A LITTLE LOWER THAN THE DAY BY DAY DRIFT SAMPLES.

THE CHAMPION ORE HAS BEEN THOROUGHLY SAMPLED SEVERAL TIMES. THE H & H MINING COMPANY'S SAMPLING WAS MOST COMPLETE AND THEIR RESULTS ARE USED FOR THIS COMPUTATION.

IT IS PLANNED TO START OPERATIONS BY TAKING ORE FROM FOUR STOPES AT ABOUT THE FOLLOWING RATE PER DAY:

25 TONS FROM THE NO. 7 LEVEL OF THE HELENA MINE, 30 TONS FROM THE WINZE LEVEL OF MUSICK MINE, 15 TONS FROM THE EAST 1050 LEVEL OF THE CHAMPION MINE AND 30 TONS FROM THE WEST 1050 LEVEL OF THE CHAMPION MINE. THESE FOUR ORE BODIES HAVE ENOUGH TONNAGE TO FULLY SUPPLY THE MILL FOR ABOUT ONE AND ONE-QUARTER YEARS. DURING THIS TIME SOME MORE OF THE MANY ORE BODIES IN THESE AND OTHER MINES WILL BE PREPARED FOR STOPING.

THE FIRST MILL FEED WILL COME FROM THE FOUR ORE BODIES MENTIONED. TAKING A BALANCED AVERAGE OF THE VALUE IN PROPORTION TO THE TONNAGE MINED FROM EACH ORE BODY WILL GIVE AN ORE VALUE AS FOLLOWS:

GOLD	.424 OZ.
SILVER	2.945 OZ.
COPPER	1.628%
LEAD	5.745%
ZINC	4.665%

IT IS IMPOSSIBLE TO PREVENT SOME DILUTION BY WALL ROCK WHEN THE ORE IS MINED, BUT MOST OF THE WALLS IN THE BOHEMIA DISTRICT STAND VERY WELL. IF A DILUTION OF 10% IS ALLOWED, THE GROSS VALUE OF THIS AVERAGE MILL FEED WILL BE \$47.08 PER TON.

HOWEVER, SMELTERS DO NOT PAY THE FULL QUOTED VALUE OF BASE METALS OR THE FULL GOVERNMENT PRICE OF GOLD. TAILING LOSSES MUST ALSO BE CONSIDERED. THE COMPUTATION BELOW GIVES AS NEAR AS CAN BE CALCULATED, THE ACTUAL SMELTER PAYMENTS FOR THE RECOVERED VALUE FROM THIS ORE.

GOLD	.38 OZ. X 85% REC. X \$31.82 PER OZ.	\$ 10.28
SILVER	2.47 OZ. X 85% REC. X .90 PER OZ.	1.90
COPPER	29.2 LBS. X 85% REC. (LESS 5%) X 19¢ PER LB.	4.54
LEAD	103.4 LBS. X 85% REC. X 90% @ 13¢ PER LB.	10.68
ZINC	84 LBS. X 85% REC. X 80% @ 10¢ PER LB.	5.85
		<u>33.25</u>

CAREFUL CALCULATION OF TRUCKING, RAILROAD, FREIGHT AND TREATMENT CHARGES ON THE CONCENTRATES PRODUCED SHOWS \$5.63 FOR EACH TON OF ORIGINAL ORE BASED ON EXISTING RATES.

THIS LEAVES AN ESTIMATED NET RETURN PER TON OF ORE, OF \$27.62.

HELENA AND MUSICK ORE MUST BE TRUCKED TO THE MILL. AVERAGE TRUCKING COSTS FOR THE WHOLE TONNAGE CONSIDERED ABOVE WILL BE UNDER \$1.00 PER TON. ALSO, THERE MUST BE DEDUCTED, UNTIL THE PROPERTIES ARE PAID FOR, A ROYALTY OF \$2.76 PER TON. MINING AND MILLING COSTS HAVE BEEN CALCULATED IN GREAT DETAIL AND THIS COST WILL BE ABOUT \$10.00 PER TON.

TO SUMMARIZE:

GROSS VALUE AVERAGE ORE		\$ 47.08
PAYMENT FOR RECOVERED METALS		33.25
MINING & MILLING COSTS	\$10.00	
TRUCKING OF ORE TO MILL	1.00	
FREIGHT & TREATMENT CHARGES ON CONCENTRATES PRODUCED	5.63	
ROYALTY	<u>2.76</u>	<u>19.39</u>
ACTUAL PROFIT PER TON		13.86

ASSUMING MINING AND MILLING OF 100 TONS PER DAY FOR 300 DAYS PER YEAR, WE HAVE A CALCULATED PROFIT BEFORE TAXES, OF BETTER THAN \$400,000.00 ANNUALLY.

THE OREGON-COLORADO MINE HAS A LARGE MEASURED AND SAMPLED TONNAGE OF ORE IN WHICH THE CHIEF VALUE IS COPPER AND SILVER. THIS ORE IS NOT AS RICH AS THAT CONSIDERED ABOVE IN SOME OF THE OTHER MINES, BUT BASED ON ASSAYS FOUND IN OLD COMPANY RECORDS, ASSAYS TAKEN FROM MR. W. W. ELMER'S REPORT ON THE PROPERTY WRITTEN IN 1927, FROM VALUE OF ORE SENT TO MINERALS SEPARATION COMPANY FOR MILL TESTS, AND FROM SAMPLES TAKEN FROM THE ORE DUMP BY KENNETH O. WATKINS, IT APPEARS THAT THE AVERAGE ORE OF THIS MINE WILL ASSAY 4 OZ. OF SILVER AND 3-1/2% COPPER WITH A LITTLE GOLD AND ZINC CONTENT.

WITH THE LARGE TONNAGE AND THE GOOD WALLS IN THIS MINE, AND CONSIDERING THE FACT THE MILL TESTS SHOW AN EXTREMELY HIGH RECOVERY OF THIS ORE, A CONSIDERABLE PROFIT CAN BE MADE FROM MINING AND MILLING OREGON-COLORADO ORE AS LONG AS THE PRESENT HIGH PRICE OF COPPER HOLDS.

IT IS IMPOSSIBLE TO BE COMPLETELY ACCURATE IN CALCULATING A PROFIT FROM A MINING INVESTMENT BUT IN THE CASE OF THIS OPERATION, THE PROVEN TONNAGE OF ORE IS SO LARGE, THE VALUE PER TON SO HIGH AND THE CAPITALIZATION SO LOW, THAT EACH STOCKHOLDER CAN REASONABLY EXPECT A SUBSTANTIAL DIVIDEND. METAL PRICES ARE HIGH AND SHOULD CONTINUE SO FOR SOME TIME AND IT IS PROBABLE THAT OPERATING COSTS (PARTICULARLY LABOR COSTS) HAVE REACHED THEIR MAXIMUM.

IT IS SELDOM THAT SUCH A LARGE PERCENTAGE OF PROFIT CAN BE CALCULATED FROM A MINING VENTURE, ESPECIALLY WHEN THIS PROFIT IS CALCULATED ON KNOWN ORE. IT IS ALSO UNUSUAL TO HAVE AN OPERATION OF THIS SIZE IN A POSITION TO START PRODUCTION SO QUICKLY AFTER THE INVESTOR PUTS IN HIS CAPITAL.

17. THE ISSUER AGREES TO MAIL TO THE LAST KNOWN ADDRESS OR DELIVER TO EACH HOLDER OF THE CLASS OF SECURITY BEING OFFERED, WITH EACH ASSESSMENT NOTICE FOLLOWING THE COMMENCEMENT OF THE OFFERING, A STATEMENT CONTAINING THE INFORMATION REQUIRED UNDER (PARAGRAPH G) OF RULE 240, AS FOLLOWS:

(1) THE APPROXIMATE DATE THE STATEMENT IS FILED PURSUANT TO PARAGRAPH (H).

(2) THE FULL NAME AND HOME ADDRESS OF EACH OFFICER OR DIRECTOR OF THE ISSUER ELECTED SUBSEQUENT TO THE FILING DATE OF THE PROSPECTUS REQUIRED BY PARAGRAPH (3) OR SUBSEQUENT TO THE LAST ASSESSMENT NOTICE, WHICHEVER IS THE LATER.

(3) A STATEMENT SHOWING RESPECTIVELY THE AMOUNT OF FUNDS RECEIVED BY THE ISSUER FROM THE SALE OF SECURITIES, ASSESSMENTS, AND OTHER SOURCES FOR A PERIOD OF TWO YEARS IMMEDIATELY PRECEDING THE FILING DATE OF THE STATEMENT REQUIRED BY THIS PARAGRAPH (G). STATE ALSO THE AMOUNT OF ASSESSMENTS LEVIED DURING SUCH PERIOD.

(4) A STATEMENT SHOWING THE PRINCIPAL PURPOSES FOR WHICH THE FUNDS REFERRED TO IN SUBPARAGRAPH (g) (3) WERE USED, AND THE AMOUNT EXPENDED FOR EACH SUCH PURPOSE. SUCH STATEMENT SHALL INCLUDE A DESCRIPTION OF THE AMOUNT AND NATURE OF THE WORK DONE AND OF THE IMPROVEMENTS MADE AT THE MINING PROPERTY THROUGH USE OF SUCH FUNDS. SHOW SEPARATELY THE AMOUNT OF SUCH FUNDS PAID TO EACH PROMOTER, OFFICER, AND DIRECTOR OF THE ISSUER IN HIS OFFICIAL CAPACITY OR OTHERWISE AND THE CONSIDERATION FOR SUCH PAYMENTS.

(5) A STATEMENT SHOWING WHETHER THE PROPERTY IS ESSENTIALLY IN THE EXPLORATORY STAGE WITHOUT IMPORTANT ORE RESERVES AND, IF NOT IN THIS STAGE, A STATEMENT SHOWING THE ORE RESERVE POSITION OF THE PROPERTY.

(6) A BRIEF STATEMENT SHOWING THE CONSIDERATION RECEIVED FOR SHARES ISSUED FOR OTHER THAN CASH SINCE THE FILING OF THE LAST PROSPECTUS REQUIRED BY PARAGRAPH (3) OR THE LAST STATEMENT REQUIRED BY THIS PARAGRAPH (g), WHICHEVER IS THE LATER.

(7) A STATEMENT OF THE AGGREGATE AMOUNT OF THE CURRENT ASSESSMENT AND THE ISSUER'S INTENTION WITH RESPECT TO THE PRINCIPAL USES THEREOF AND OF ANY OTHER AVAILABLE FUNDS. SHOW SEPARATELY THE AGGREGATE AMOUNT OF THE AFOREMENTIONED FUNDS INTENDED TO BE PAID TO EACH PROMOTER, OFFICER AND DIRECTOR IN HIS OFFICIAL CAPACITY OR OTHERWISE AND THE CONSIDERATION THEREFOR.

(8) A STATEMENT OF THE ISSUER'S PRESENT INTENTION WITH RESPECT TO FURTHER ASSESSMENTS DURING THE PERIOD OF ONE YEAR FOLLOWING THE FILING DATE OF THE STATEMENT REQUIRED BY THIS PARAGRAPH (g).

(9) A STATEMENT OF ANY MATERIAL PROVISIONS, WHETHER STATUTORY OR OTHERWISE, APPLICABLE TO ASSESSMENTS ON THE SHARES BEING OFFERED, INCLUDING PROVISIONS DEALING WITH THE FAILURE OF THE STOCKHOLDER TO MEET AN ASSESSMENT.

(10) A STATEMENT SHOWING ANY INFORMATION NECESSARY TO MAKE THE INFORMATION GIVEN IN THE STATEMENT REQUIRED BY THIS PARAGRAPH (g) NOT MISLEADING IN MATERIAL RESPECTS, AND SHOWING ANY OTHER INFORMATION CONCERNING THE ISSUER AND ITS PROPERTY (UNLESS ALREADY SENT TO ALL HOLDERS OF THE ISSUER'S ASSESSABLE SHARES) WHICH THE ISSUER IN GOOD FAITH BELIEVES MATERIAL IN FORMING A JUDGMENT AS TO THE PAYMENT OF THE ASSESSMENT.

AS STATED BEFORE IN THIS PROSPECTUS, THE ISSUER HAS NO INTENT TO ASSESS IN THE FOLLOWING YEAR OR AT ANY KNOWN DATE.

FOR ADDITIONAL AND VERIFYING DATA, PLEASE REFER TO PUBLIC INFORMATION AND REPORTS OF THE OREGON STATE DEPARTMENT OF GEOLOGY AND MINERAL RESOURCES, WOODLARK BUILDING, PORTLAND, OREGON, AND TO UNITED STATES GEOLOGICAL SURVEY BULLETIN #895.

SURFACE MAPS, CLAIM MAPS, UNDERGROUND PLAN MAPS, ASSAY MAPS AND METALLURGICAL DATA ARE AT THE MINE OFFICE AND AVAILABLE FOR INSPECTION BY STOCKHOLDERS OR THEIR REPRESENTATIVES.

STATEMENT BY KENNETH O. WATKINS

I HAVE BEEN SUPERINTENDENT OF NINE PRODUCING MINES AND HAVE MADE MANY MINE EXAMINATIONS, BUT I AM NOT A GRADUATE MINING ENGINEER. I ATTENDED OREGON STATE COLLEGE SCHOOL OF MINES FOR TWO YEARS.

I TAKE FULL RESPONSIBILITY FOR TONNAGE CALCULATIONS AND ASSIGNMENT OF VALUE TO THE ORE BODIES DISCUSSED IN THIS PROSPECTUS. TONNAGE CALCULATIONS OF THE PROVEN AND PROBABLE ORE IN THE CHAMPION MINE HAVE BEEN MADE RECENTLY BY THREE FULLY QUALIFIED ENGINEERS. THEIR ESTIMATES OF TONNAGE ARE ALL HIGHER THAN MINE.

I HAVE CHECKED THE ASSAY MAP COMPILED BY MR. HERBERT JOHNSON, E.M., BY PERSONALLY MEASURING AND SAMPLING ALL THE ORE BODIES DISCUSSED ON PAGES 8 AND 9, WITH EXCEPTION OF THOSE IN THE OREGON-COLORADO MINE. NONE OF THE MEASURED ORE BODIES LISTED HAVE BEEN INCLUDED EXCEPT THOSE IN WHICH THE VALUE OF THE ORE HAS BEEN HIGH ENOUGH TO INDICATE A SUBSTANTIAL PROFIT.

(SIGNED) Kenneth O. Watkins
KENNETH O. WATKINS

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CONCLUSIONS AND RECOMMENDATIONS

The Vesuvius Mines Company has performed the outstanding development of the Bohemia District, Lane County, Oregon. The district at large has given substantial net returns during its early history when surface ores were worked in the simplest type of free-milling plants.

From comparatively shallow and from strictly surface diggings, the Vesuvius Group gave a considerable tonnage in early day operation. In the years prior to 1921, by which time upper levels had been worked out, the construction of a long adit had not reached the downward extension of two shoots which had been worked on and probably exhausted in the upper working levels.

The unfortunate demise of the directing individual of the Vesuvius Mines Company in 1921 left the enterprise without an active head, since which date all operations have been discontinued and the property has lain dormant.

A regrettable fact due to the death of Mr. Hard, the secretary and manager, was the loss of all mine and mill records excepting maps dated 1908 and certain detached assay slips and bullion receipts which are referred to in the following pages. There are no data now in existence, it is believed, to show what tonnage has been treated or returns gained.

A total expenditure of not less than \$250,000 was made on this group during the operating period.

This resulted in the construction of no less than 6,000 feet of underground workings and complete mill, tramway and camp equipment and buildings. The workings of value at this date for further development of the property are in good condition, equipped with track and with mechanical ventilation which will require little expenditure to make it up to date in efficiency.

Through long years and many trials, F.J. Hard fostered

operations here and at three other groups with an abiding faith in ultimate success of the entire holdings. Criticism may be voiced that if more of the funds that were used on the other groups, aggregating not less than \$400,000 on all the properties, had been spent on the Vesuvius Group, it could have been proven in spite of the difficult times of the great war.

It is to the credit of the past that although the work done in Wild Hog adit (which is discussed in detail later in these pages) did not reach the known ore shoots, it was so left as to reach them with no great further expenditure of money.

It is equally to the credit of the integrity of the officers of the past and present that the property is free of obligations, that title is by patent from the United States, and that the company is in good standing in every respect.

The president and secretary-treasurer of the company have, since the death of Mr. Hard, been his daughter, Dr. Franc Lucile Hard, and his wife, Almir L. Hard, both of San Jose, California.

It being neither within the powers nor the inclinations of these ladies to carry on a campaign of development by the sale of company shares, the recent examination has been made and this report written to present the property for sale to qualified mining people.

This report is, for this reason, a seller's report, made as is stated in the letter of transmission, by an independent engineer who has no interest, real or anticipated, in the shares of the company nor in a commission from its sale.

There is no common sense nor geological reason why the downward extension of the shoot worked out above will not be out by Wild Hog adit with an expenditure well in keeping with its possibilities and fully justified by existing conditions.

Vesuvius Group topography is such that one-third of the expected ore above Wild Hog adit will probably be semi-free milling and the remainder mixed, massive sulfide and semi-free milling. Below that elevation the ores may be expected to be entirely sulfide and it is to ores of that type that the district at large will owe its greater future profits.

An expenditure of \$25,000 will develop to a depth of 600 to 650 feet two shoots known and exhausted above.

The length of one of these shoots is 120 feet at the lowest workings above. The other has a length unknown to the writer.

Ahead of this adit is nearly 2,000 feet of owned ground unprospected except for surface drifts on the Story lode, where formation is good but values are not of milling grade at the surface.

Were it practicable for the company to continue operations it would be recommended and urged that the company do the projected development as shown under proper caption.

This is not practicable, indeed it may be considered impossible, due to lapse of time, the death or advanced years of the shareholders.

The recommendation is, for this reason, made as covering the most direct route to attain profit from the operation of the property by proposing purchasers.

The directors of the company are empowered to sell this group without a shareholder vote for it is only one asset of the three owned by the corporation. That it must be sold for much less than the past expenditure is regrettable, but this condition, like others of the past, must be faced as a detail of business administration which falls to the lot of the officers of the company.

The investigation made by the writer was conducted with

every care to get all the information practicable and the findings are set forth in the following pages.

Respectfully submitted

(Signed)


Wm. E. Elmer
Consulting Mining Engineer

Portland, Oregon
August 20, 1927

DERIVATION OF DATA

Data upon which this report is based were gained by the writer in his operations in the district from December 1915 to December 1916 and in a personal examination conducted on Vesuvius Ground early in June and from July 20th to August 15th, 1927.

The work done in June resulted in finding it impossible to enter Vesuvius Main Adit beyond the air raise because of a cave at that point and to enter Wild Hog Adit beyond 300 feet because of foul air.

In July and August Vesuvius cave was cleared and Wild Hog Ventilation system rehabilitated, permitting a complete examination and instrument survey of both workings.

They were readily accessible for inspection and examination as late as 1935.

Forty-three samples were taken in the two examinations and resulted in showing that all ore available had been worked out prior to the death of the former president, F.J. Hard. These are not listed but are referred to where significant under proper caption.

Precise surveys were made of Wild Hog tunnel, which was tied to Cor. No.1 of the claim of that name. This agreed with equal precision with maps dated 1908, so far as old maps were extended.

Using the old maps and notes Vesuvius Main Adit survey was checked from the cross-out to the point where the old survey closed.

Precise agreement was found to exist and the survey was extended to the breasts of drifts on Vesuvius Vein and on

Jasper-Vesuvius Vein east of the contact.

All survey stations underground were established in the back or roof and properly marked.

The geology of the district and the conditions of vein formation and oxidized and sulfide zone elevations was studied in detail by the writer in 1915-16 and the results are included herein.

HISTORICAL DATA

of

BOHEMIA MINING DISTRICT

Gold was first discovered in Bohemia district in 1858. In 1875 a five-stamp mill was built on the Knott Claim and was run till 1877 on free-milling surface ores. From 1877 to 1891 little was done in the district. Beginning the latter year prospectors again entered the field and many locations were made.

These resulted in opening the Helena, Champion and Musick groups where operations were carried on at a profit until the free milling ores then developed had been worked down to sulfide ores.

During this operating period gold-silver ores of high values were worked in each of the properties named but when the sulfide ores were met at depth, no profit could be made from their treatment in the free-milling plants and the individual operators sold to a single holding company.

This was in 1900 and between that date and 1908 a considerable sum was spent for equipment at the Champion Group. A hydro-electric plant was constructed seven miles below on Frank Brice Creek and various detached units from the other properties were assembled into one thirty-stamp mill at the Champion.

Electric haulage was installed underground at Champion, a surface gravity plane connected that mine with the mill and a surface tramway with electric motor handled ore from Musick Mine to Champion Mine.

It is common knowledge that these operations were conducted by men with little prior training in mining.

Howly developed free-milling ores were treated in the Champion plant, no provision was made for the treatment of the complex sulphides which were opened there and at Musick, and

after an expenditure of more than \$300,000. and recovery of less than two-thirds that amount the combined properties were closed down. The Helena has been worked during the past few years and is known to have produced a considerable tonnage of sulfide ore of good width and fair value. That property is now in production according to mining press report September 15, 1937.

From 1912 to 1918 limited surficial development work was done at the Champion and Musick and free-milling ores resulting were treated at the Champion Mill.

The property during this period was held under lease and bond by two individuals, one of whom (the man of means) died suddenly in 1917, and operations ceased a few months later.

Southerly from the Champion Mine the Evening Star group was in constant, though small operation, for several years, prior to 1934 with results unknown to the writer. In 1934 the Champion and Evening Star were taken over by Robert Betts, now deceased, who performed development work and put a plant on the property. This plant was operated for a short time with results not known to the writer.

In 1925 the Musick group was sold to Mr. L.K. Capps of Blackfoot, Idaho, who subsequently sold to an operating company, name not known to the writer. If information received is correct that company or its successors in interest are developing at this time, (August 1937) and are, or have been milling ore at the property.

For many years Jenks, Klopfenstein, Ostrander and McQueen have developed the North Fairview, Crystal, and Grizzly Groups.

The writer has no personal knowledge of these holdings other than that they are favorably situated, are reported to have ore developed in considerable quantity and that there never has

been nor is now any question as to title.

The Vesuvius Group which is the subject of this report is treated in detail under the proper caption and all that need be said here is that its development has been the most outstanding feature of the district, that no question of title has ever arisen and that title flows direct from the government as evidenced by patents of various dates.

Various other claims and groups are held by men of long residence in the district but the writer has no personal information regarding them.

Federal reports credit the district with an output of \$300,000. to \$400,000. to the year 1913 inclusive. Unofficial reports credit an output of \$300,000. to \$1,200,000. and it is the opinion of the writer that \$800,000. is about the amount of the combined output.

(1938)
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There has been little if any crude ore shipped and ninety five percent of the recovery has been from leached ores with a saving which probably did not recover better than 70 per cent of contained values which were gold and silver.

Since 1913 no data are available to the writer to definitely show what the output has been nor is it possible to determine what total profit has been gained from any past operations:

monumental

War and post-war conditions made refinancing a monumental task but the past 10 years have so far as this district is concerned, cured this in great measure and considerable attention is now being given to the district. Roads have been built and the district is now easily accessible for nine months of the year. This attention is eminently deserved and is based, as it must be, on the plan of developing and treating complex sulfide ore.

This plan is fully justified and if carried to conclusion in the hands of trained men will result in commensurate, and may result in very high, returns on the investments required.

THE VESUVIUS MINES COMPANY

The Vesuvius Mines Company is an Oregon corporation,
incorporated December 12, 1903.

The officers and directors are:

President and Director - Franc L. Hard, San Jose, Calif.

Secretary-Treasurer and Director - Almira L. Hard, San Jose, Calif.

Director - L.E. Bean, Eugene, Oregon. Deceased.

Capitalization is 5,000,000 shares, par value \$1.00, fully
paid and non-assessable. All stock is common.

The company is a standard Oregon mining corporation fully
empowered to act in all departments of mining.

All corporation and property taxes are paid to date and
the company is in full enjoyment of its corporate powers.

HISTORY AND DEVELOPMENT OF PROPERTY

of

THE VESUVIUS MINES COMPANY.

The Vesuvius Mines Company was founded by the late F.J. Hard, a Colorado mining man who first came to the district in 1894.

Becoming assured of its possibilities, he kept in touch with developments there and in 1899 closed up his affairs in Cripple Creek and moved to Bohemia.

Transportation was at that time by wagon road 21 miles from the railroad at Cottage Grove, by way of what is now Disston on Oregon Pacific and Eastern R.R., thence 16 miles by trail to Bohemia, or 25 miles by a roundabout mountain road to the Musick Mine.

Only bullion had been taken out from the Helena, Musick and Champion mines and no provision had been made for saving concentrates because of cost of transportation.

With a fixed confidence in the future of the district, which confidence did not change during the succeeding years, Mr. Hard, by 1903, had purchased upward of thirty lode claims and had located nearly as many more. Ultimately these were combined in four groups, the Utopian, Vesuvius, Oregon-Colorado and Riverside, of which the three last named groups were patented in due season, with the exclusion of areas not required, and are now owned by the Vesuvius Mines Company.

An extended campaign of development was carried on including about 10 miles of well constructed mountain road, which is now a part of the principal haulage-way to the district.

The death of Charles Hard, son and valued assistant to Mr. Hard in 1920, after heavy struggles due to wartime conditions, had put a great burden on both men; was a contributing factor

in the demise of Mr. Hard who died in 1921.

At the time of the demise of that gentleman the most important records were filed in two receptacles in an office in Eugene. Due to the disruption following the speedy and unfortunate taking off of Mr. Hard and the dismantling of his office by alien hands, the mine operating records were lost and have not since been found.

This statement is made to account for the lack of pertinent data in a recital of the company history.

The book of minutes of the company shows that the company was formed in December 1908, but that prior to that time extended development underground had been concluded and that at the Vesuvius group by 1908 buildings had been erected, a postoffice established and a ten-stamp mill with concentrating tables had been put on the ground. This mill was connected with Vesuvius' lower workings by a single-rope tramway 1800 feet long operated by gravity.

A lighting-plant, assay office, and saw-mill were in use and development to the amount of at least 3,000 feet had been completed on the group at the time of incorporation of Vesuvius Mines Company.

The assay record book cannot be found.

The mill was operated for an unknown period prior to 1908.

All milling records have been lost, except certain duplicate U.S. Mint memoranda (which will be listed under caption of Available Records of Past Output) and a few detached slips showing mill heads and mine cars of ore treated during a part of 1914.

These were found in the personal effects of the late F.J. Hard, to whom they had probably been mailed from the mine.

There are no data to show what, if any, concentrates were ever shipped.

In 1915 the writer discussed general conditions on the ground with Mr. F.J. Hard, who stated that mill recovery had been inefficient and that in the development which was to follow after conclusion of the Great War, it was planned to extend Wild Hog tunnel to open Vesuvius ores and to add proper equipment to the mill. Extended tests for ore treatment were made by Minerals Separation Co. in 1916. >

After the death of Mr. Hard, a watchman was kept on the ground and annual labor was done on the remaining unpatented claims of Vesuvius Group until 1922, at which time patent surveys were made and patent issued in due course.

Since that date the property has laid idle and funds available have been used for patenting the Riverside Group and for current expenses of corporation and property taxes.

LOCATION

The Vesuvius Group of mines is situate in Lane County, Oregon, in T. 23S., R.1 E., Willamette Meridian, in the center of the Bohemia Mining District.

During the operating period of the property a postoffice was maintained at the company office. This was discontinued in 1922, but can be re-established upon a proper showing.

The nearest postoffice is a cross-roads star route office at Culp Creek, Oregon, where mail delivery is daily except Sunday.

The nearest town is Cottage Grove, a town of about 4,000 people, distant about 36 miles and situate on S.P. Railroad, 150 miles south of Portland, Oregon, and about 600 miles north of San Francisco.

The nearest railroad station is Red Bridge on the Oregon Pacific and Eastern R.R., a common carrier logging road, distant 13 miles from Vesuvius office. Of this distance four to five miles is excellent country road and the remainder is well built mountain road.

Plate No. 1 opposite this page shows the location of the mine in its relation to this railroad, to Cottage Grove, and to other district mines.

The center of circles show the approximate center of holdings without reference to their boundaries. North Fairview group not shown because of lack of data.

PROPERTY

The property of the Vesuvius Mines Company comprises three groups, all patented and owned in fee simple.

These are Riverside, Oregon-Colorado and Vesuvius Groups. Only the Vesuvius Group is treated on in this report.

The Vesuvius Group.

The Vesuvius Group comprises the patented lode claims listed below, with appurtenances, all lying in the Township 23 S., R. 1 E., Willamette Meridian, in Lane County, Oregon.

<u>Lode Claims</u>	<u>Mineral Survey</u>	<u>Acres</u>
Newton) Fawn) Jasper)	No. 814	42,445
Story	No. 815	15,028
Vesuvius) German) Nightingale) Wild Hog) William Tell) Charles) Dixie Queen)	No. 480	92,150
	Total	149,623 Acres

Plate No. 2 opposite this page shows the position of the various claims and improvements. Improvements are listed under Buildings and Improvements.

The group boundary lines are shown in color.

Boundary lines are precise as taken from patent survey maps.

BUILDINGS AND IMPROVEMENTS

Submitted only to show condition at time of F.J. Hard's death.

The total underground development at Vesuvius Group aggregates more than 6,000 feet of cross-cuts, drifts and raises.

The buildings comprised those shown in Plate No.3 (taken about 1913), opposite this page, in addition to which was the tunnel house at Vesuvius and the old Stocks-Harlow Mill.

The structures shown are listed below with notations as to their present condition.

Hotel and Store	Destroyed by fire in 1935
Assay Office	" " "
Saw Mill	" " "
Ore Bin	" " "
Stamp Mill	Partly demolished by snow
Ore Trestle	Entirely " " "
Stable	Entirely demolished.

These are
all wrecked
ed now
(1934)
By fire
in 1933.
Ten stamps
and rock
crusher
O.K.

The upper part of the stamp mill was occupied by the lower tramway terminal.

This was a single-rope carrier with upper terminal at Vesuvius Main Adit. The tramway is now demolished.

The ton-stamp mill comprised 10 - 1,000 pound stamps with crusher, mortars, feeders, copper plates and two Card concentrators.

Steam power generated in a 40-horsepower return tubular boiler was used to run a 20-horsepower Atlas slide-valve mill engine and the 15 horsepower Atlas sawmill engine.

Due to the great fall of snow in 1921 the mill roof was caved resulting in the destruction of the plate and concentrator

room and of the concentrators.

All steam equipment is in excellent order so far as can be seen without an inside examination of the boiler, but is of no utility in these days of more modern power.

A water-wheel was set in the mill and operated by water under 180 feet head from Wild Hog tunnel. This wheel was belt connected to an electric lighting motor and is in good order. The motor has been removed from the property.

Wild Hog adit was ventilated by means of a 24-inch fan, belt-connected with an 18-inch water wheel operated by water from Wild Hog adit. This equipment was reset recently and is now in excellent working condition (1937) condition not known in August 1937.

No compressor was ever placed on the ground and all mining was done by hand.

Wild Hog and Vesuvius adits were entirely free of fills in 1936, with tracking and cars in each adit, and hand mining can be begun at either place in two days' time.

CLIMATE AND ECONOMIC CONDITIONS

The altitude of Vesuvius camp buildings is 4,800 feet above sea level as determined by aneroid readings.

Snow fall begins about December 1st and lies on the ground from December 15 to May 1st in normal years. A depth of five feet is frequently attained at the camp buildings.

Rainfall begins about November 1st and follows the spring break-up for thirty days. Six months of the year the climate is ideal and the year around temperature is equable with no extremes of heat or cold. For seven months of the year transportation is by motor truck from Red Bridge station on Pacific and N.E.Ry., distant 18 miles. The remaining five months requires the use of runners for the last five miles of the road. A 20-H.P. track type Caterpillar would serve to move freight cheaply during the snow months.

A company owned truck can move incoming freight from Diston^S to the mine over the recently completed Brice Creek road for \$4.00 per ton and outgoing concentrates and crude ore for \$2.00 per ton.

One Forest Service and one privately owned telephone line serve the district.

A post-office was for many years maintained at the Vesuvius Mine and can be re-established on a proper showing.

The area owned by this company is in great part heavily timbered. A saw-mill on the ground can cut lumber for \$6.00 per thousand feet.

In past operations steam has been used with wood for fuel.

In a large operation crude oil engines will be utilized until a scale is reached when the generation of hydro-electric power on Frank Brice Creek, or on Sharp's Creek, is justified.

Milling water is available under pressure.

Topography is favorable for deep development by means of adits. Wild Hog tunnel on its northeasterly extension will have virgin backs of 600 to 650 feet at the junction of Vesuvius-Jasper veins.

Formerly the ore from Vesuvius workings was moved by gravity cable tramway from Main Adit to the Mill. Future operations will handle all ore through Wild Hog adit and thence to mill by surface incline. This will apply to all ore opened above Wild Hog Adit.

The country rock is firm and requires timbering only where ore is worked from the levels upward.

Good miners can be had at cost of \$5.50 and board. General mine labor for \$3.00 and board.

At Cottage Grove are good stocks of general provisions and mine supplies. The country between that town and the mining district affords fresh meats and vegetables at low cost.

DISTRICT AND LOCAL GEOLOGY

The Bohemia District, in which Vesuvius Group occupies approximately a central position, has an extension easterly and westerly of about 4 miles and northerly and southerly of 6 or 7 miles.

The district lies along the crest of the Calapooia Mountains, a westerly arm of the Cascade Range.

The Calapooias are a giant andesitic uplift of Tertiary Age, along which are high peaks heavily timbered at elevations below 5,000 feet.

The relief of the district is marked. Bohemia and Fairview peaks have elevations respectively of 5,960 and 5,925 feet, while the narrow valley of Sharp's Creek, four to five miles distant, has an elevation of 2,100 feet.

Erosion by glaciation and glacial streams has been rapid, resulting in deeply incised cirques and gulches with steep walls.

The easterly slope of Bohemia peak is a cirque cut by glacial action at no remote period and still almost perennially occupied by snow and ice.

Musick Mine lies on this slope and glacial ice has carved off the top of the vein at so recent a period that the oxidized zone is of limited extent and semi-sulphide ores crop at the surface.

The Vesuvius Group occupies the southwesterly slope of Fairview peak and crosses that mountain with its northerly lines. Extending easterly it crosses the Musick Saddle and the Story claim lies along the apex of the ridge between Fairview and Grouse Mountains.

The elevation at Vesuvius' lowest workings is such that ores are entirely oxidized. The Vesuvius rocks are andesitic

lavas, varying from light to dark gray in color and weathering to nearly white where decomposition is most advanced.

The chief constituents are soda-lime feldspar with limited hornblende. The fracture is uneven. Quartz in general is limited, but the structure in places is porphyritic with phenocrysts. At the Jasper cut, quartz is massive to a width of 6 feet.

As shown on Plate 4, where every opening, except the cross-cuts, is along a vein, the general strike is easterly-westerly. The dip is 50 to 60 degrees to the south with occasional steeper inclination. The veins are replacements along well-defined fissures and vary in width from two to seven feet. Due to the effect of leaching, outcrops are not pronounced.

The fracturing of the country rock resulted in two major fissures, one of which is the Jasper vein and the other the Wild Hog vein.

The better enrichments here, as elsewhere in the district, are found at the point of junction of the major fracture and of auxiliary fractures or complementary fissures.

There is evidence to indicate that the major fracture planes are older and that enriching solutions have come up through the complementary fissures which, so far as can be seen in this examination, do not cross the major planes and invariably join them from the hanging-wall side. This may apply only at the present elevations, but it is certain that at the points of contact and for varying distances along the vein as the contact is approached and after it has been passed, enrichments do occur.

This is indicated at the approaching of Stocks-Marlow to Jasper vein and clearly shown at contact of Jasper-Vesuvius Veins in Vesuvius ground.

VEIN DEVELOPMENT

See Plate No. 4.

The cut at Jasper workings is sixty feet along a pronounced wall with width of seven feet at the westerly end. Sixty feet below, a cross-cut has been run with a drift westerly 200 feet and easterly 65 feet along the vein. Some ore was treated from this vein in early days.

On the Stocks-Harlow vein three hundred feet of drifting has been done from two cross-cuts aggregating about 100 feet in length. The most of ore treated in the old mill came from these workings, which are connected by a raise that cannot now be entered.

All ore of a milling grade was extracted so far as this examination shows, though it is reported that at the easterly face, now caved, excellent ore was being mined at the time of the sale to F.J. Hard. This was approaching the contact of Stocks-Harlow with Jasper vein and it is common knowledge that No. 1 cross-cut of Wild Hog was run to pick up this junction at Wild Hog elevation.

Wild Hog tunnel was started on Wild Hog cross-vein and is continuously on that geologically youthful vein for a distance of about 1200 feet. Here, at Sur. Sta. 15, the drift was turned southerly, crossing fracture slips with a northeasterly strike. The workings then followed slips and seams to the present face where vein matter is found about 3 feet wide but without value.

The Wild Hog adit has a length of 1,735 feet. No. 1 Cross-cut and drifts have a length of 610 feet and No. 2 drift is 124.5 feet long. The total length thus approaches half a mile. While it might better have been placed at a lower elevation, where a greater length of 500 feet would have given 200 feet more depth

and put it in the sulfide zone at point of contact with Jasper-Vesuvius vein, it is well constructed and ventilated and no great extension will cut that point.

At Sta. 18 plus 18 feet a cross-cut has been run 124.5 feet northeasterly. It is evident that surveys had been made which showed that the tunnel had diverged from the proper course and that this cross-cut was run to cure this diversion from the proper line.

At this cross-cut future work should be done as discussed under Future Development. The upper workings (at Vesuvius Main Adit) aggregate 2,250 feet of drifting and cross-cutting with one 300-foot raise and other raises of varying lengths not known to the writer because they could not with safety be entered in this examination.

The Vesuvius Main Adit starts on the vein, which is breasted at this point and breaks in blocky fragments.

The drift leaves the vein at once and again enters it at 132 feet from the portal, continuing from that point to the breast along one wall or the other for the entire distance of about 1025 feet.

At about 900 feet from the portal Jasper vein is struck and the ore shoot, which was cut 75 feet back along the level, follows both veins for 50 feet, then follows the Jasper vein. Beyond the point of contact Vesuvius vein loses its identity and is represented only by slips to the face of the Main Adit.

The shoot here worked, from the lower to the upper level, had a length of 120 feet at the lower level and 70 feet at the upper level, so far as can be seen by inspection of the workings now open.

Two small stopes were started at 460 and 550 feet from the portal, but could not be entered in this examination because

of loose ground.

Wild Hog and Vesuvius Main Adit workings were clear of all fills late in 1935, with T-rail track in excellent condition. Vesuvius upper adit workings are caved.

Ventilation of Wild Hog is by means of a water-wheel and fan, which during 1927 examination was rehabilitated and forced air to the faces through 8-inch galvanized pipe, except for the last 200 feet of main adit, where the pipe was 4 inches diameter for 100 feet and the remainder was without pipe. See Future Development.

The first drift in Wild Hog Cross-Cut No. 1 is probably on Jasper vein. This is here an irregular fissure except at the West face, where the vein has taken good form for the last five feet and at the face has 2.6 feet of mixed soft vein matter and pyrite with gold value of \$4.55.

At the breast of this cross-cut a defined fissure has been cut from which flowed about one-tenth second foot of water at the time of this examination.

This fissure has parallel slips striking northeasterly and southwesterly and its identity could not be determined in this examination. It dips with slight inclinations to the south and has drained all of the surface springs of former years, hence the name Wet Vein by which it is known to the miners.

DISCUSSION OF AVAILABLE RECORDS OF

MILLING AND PAST OUTPUT

As has been stated elsewhere in this report, the books of mine records have not been found since the death of Mr. Hard.

In his letter file at San Jose detached slips of paper were found which bear the appearance of having been mailed from the mine to him on one of his many eastern trips.

They are listed below to show the general run of ore treated in the period noted (parts of the months of August and September 1914), but are not considered by the writer to cover the entire tonnage treated even in those months. Neither are they accepted as indicative of average values, because it is common knowledge that ore of high-grade was broken during parts of the operating period.

	<u>Date</u> <u>1914</u>	<u>No. of Mine cars</u>	<u>Gold Ozs.</u>	<u>Gold at</u> <u>\$55.00 1937</u>
August	1	6	1.16	\$40.80
	1	7	0.30	16.50
	5	13	0.22	8.20
	5	8	0.33	15.30
	7	16	0.27	12.45
	8	12	0.23	12.60
	10	10	0.50	17.50
	12	9	0.43	16.50
	13	5	0.34	11.90
	14	5	0.36	12.60
	17	9	0.30	10.50
	20	4	0.34	11.90
	22	10	0.46	16.10
Sept.	1	13	0.21	7.35
	10	12	0.62	21.70
	15	16	0.40	14.00
	16	18	0.30	10.50
	19	9	0.26	9.10
	21	10	0.22	8.20

One ton mine cars were used and if properly filled the total cars would equal total tons moved.

It is to be noted that silver content was not determined.

Again referring to total lack of assay office data reference is made to a single slip found in Mr. Hard's papers, which gave results as follows under date of November 14, 1914 on ore from nine stopes:

<u>No. on List</u>	<u>Marked</u>	<u>Ozs. Gold</u>	<u>Gold Value at \$35.00 oz.</u>
1	Gerlock Stope	2.20	\$77.00)
2	Above Windlass	0.82	28.70) as
3	Johnson Stope	0.66	23.10) of
4	Jodes Stope	0.13	4.55) 1914
5	Below Windlass	1.41	49.35) 1934(?)
6	Unfinished		

Widths are not shown.

In Mr. Hard's personal files have been found detached duplicate Mine Certificates, ^{which} show that bullion was sold at Denver Mint as listed in the following tabulation:

<u>No. of Memorandum from Mint</u>	<u>Date of Deposit</u>	<u>Net Value</u>
2737	Nov. 4, 1913	\$399.24
16	Jan. 2, 1914	368.01
2074	Aug. 1, 1914	464.60
2563	Sept. 15, 1914	611.64
2954	Oct. 22, 1914	328.11
4805	Dec. 11, 1914	456.77
5225	Dec. 30, 1914	335.88
7188	Oct. 15, 1915	264.13
9043	Dec. 6, 1915	161.25
596	Sept. 24, 1917	64.21
		<u>\$3,455.64</u>

Assuming values were gold only \$6,043.87 - 1937, price at \$35.00 Troy Oz.

This is presented only to show that shipments were made at various dates given and is not submitted as indicative of any particular run or any particular part of the bullion sold.

Prior to the sale of Stocks-Harlow claims and 5-stamp mill to F.J. Hard, work done at Stocks-Harlow and Jasper claims had resulted in opening surface ores of excellent grade.

The old Knott mill was purchased by Stocks and Harlow and put on the ground, which was later patented as Jasper claim,

where it now stands in position as shown on Plate No. 4. Ore was milled here for parts of two years and a total output of \$6,000 to \$8,000 was recovered by the prospectors according to statement of the former owners.

The old diggings that can be examined are stripped of pay ore and the last working stopes are caved.

The first owners of the German and Vesuvius claims of this group hauled ore from upper Vesuvius workings to this mill and report that \$5,000, more or less, was taken from the upper level to the grass roots prior to the sale to Mr. Hard. The width of the vein was 2 to 3 feet and value per ton was assumed to be \$15.00 to \$30.00 with no check on mining or milling, except bullion recovery.

It is impossible to arrive at an estimate of the total output. All that may be said and confirmed is that at the time of the purchase by Mr. Hard, the Stocks-Harlow Co. was milling ore from its own ground and treating ore from upper adit Vesuvius workings for the then owners, the Graber Brothers.

Further it may be said that the backs over the Graber workings were from zero to never more than forty feet and that Graber Brothers had already done about 1200 feet of work at 300 feet lower elevation on the vein in their plan to pick up the shoot about worked out above, when the sale was made. This work was continued by Mr. Hard and resulted in opening the downward extension of the shoot and its subsequent exploitation.

At the time of the sale to Mr. Hard, a limited amount of ore was still standing in the upper diggings.

In 1917 this was broken by Charles Hard and Oliver Gilbertson and hauled on a stone boat sled to upper Vesuvius tramway, then transported by tramway to the mill and treated.

Gilbertson is authority for the statement that the value recovered was \$87.00 per ton and that four tons of ore was treated.

During the period of mining and milling of the Japper-Vesuvius ore above Vesuvius Main Adit, the Wild Hog Adit was pushed as rapidly as possible to reach the downward extension of this shoot. Available funds had been distributed over three groups, no reserve had been accumulated and war time conditions slowed this work down to the minimum. The plans that had been laid to continue the Wild Hog were finally set at naught by the death of the two men, Charles and Frank J. Hard.

Note:

A high-grade streak of ore was struck in floor of Vesuvius main adit or tunnel. Samples in possession of Dr. Hard and of the writer show $1/5$ gold $4/5$ gangue. Because of flow of water it is not practicable to find this ore with equipment now on hand. It will be found on downward extension in Wild Hog tunnel.

SAMPLING RESULTS

AND DISCUSSION.

The sampling done in this (1927) examination resulted in the showing of no available or blocked out ore.

The old stopes at Vesuvius could not be entered with safety and as it is an accepted fact that probably all ore there has been extracted, the expense of re-opening was not advised.

The floor of Vesuvius Main Adit, under the old stopes, was shattered deeply when the adit was run and filled with waste when the track was placed.

This adit flowed ten gallons or more a minute at the time of this examination and samples could not be taken with any degree of accuracy. At the breast of Vesuvius-Jasper drift a new shoot is beginning and for fifteen feet back and at the face to 2.7 feet of vein matter has per ton value of \$4.15 @ \$35.00 per Oz.

The result of the sampling done is the statement that all ore available was worked out prior to 1920 and that the tonnage treated was not less than 6,500 tons and was probably a great deal more than that amount.

Further it may be said that the final operations of the Company had been as continuous as finances would permit. All funds available for this group were expended in advancing Wild Hog adit to get under the ore worked out above and fruition, after a long struggle, was prevented by the death of the president of the company.

PAST AND FUTURE

The stopes show that material was broken to a width of three to five feet.

There is no evidence of filling, where the stopes can be entered, nor record of its use by word of mouth information.

In other words, the stopes are entirely open and it is evident that all material broken was sent to the mill.

All of the ore thus far worked was leached free of a former iron sulphur content. It was of a chemically acid reaction due to the ferric-ferrous acids. This is known to the writer by conversation with Mr. Hard and by his own experience in the district. It is doubtful if under the conditions that existed an extraction of 50 per cent of gold values was recovered by amalgamation. But little more was saved by gravity concentration due to the fact, developed elsewhere in the writer's practice in the district, that neither gold nor silver occur in the residual pyrite.

Stoping in the future should properly be done by air hammer drills and ore will be mined as such and accompanying waste used to fill the stopes.

Milling at and above elevation of Wild Hog tunnel will treat ores that vary from fully oxidized to semi-oxidized.

Plate amalgamation will be used for these ores, supplemented by cyanidation it may be, and ultimately, as the sulfide zone is entered, by selective flotation which will waste the valueless pyrite and separate lead and zinc sulfides.

This is discussed under Expectations at Depth.

Due to favorable economic conditions ore in a 3 ft. vein can be mined at all elevations above Wild Hog adit for \$1.50 per ton.

EXPECTATIONS AT DEPTH

(This Discussion is Based on The Writer's
Personal Knowledge of the District.)

The extension of Wild Hog Adit, as shown on Plate No. 4 will cut the downward extension of Jasper-Vesuvius shoot at a greater depth of 600 to 650 feet on the vein.

This will be at an elevation of 5,000 feet, at which elevation the sulfides of copper, lead and zinc will have been entered.

Due to physical migration of gold freed from former sulfide matrix there will be a slight increase in general gold values over those in the area above Vesuvius Main Adit, a considerable increase in silver content and an irregular pay content of the sulfides named.

Crude ore of a shipping grade is to be expected at this elevation, but its quality will not be so great as at succeeding lower elevations and it is probable that all ore broken will go to the mill.

As stoping progresses upward above the Wild Hog adit, sulfide content will gradually lessen. The last 200 feet, more or less, before reaching the Vesuvius Adit should be in leached ore where gold and silver are the only metals of value.

Below the Wild Hog elevation an area of secondary enrichment is to be expected where gold and silver content is enhanced and where lead will be the dominant sulfide with zinc and copper as complementary minerals of pay value.

What area this zone will have is unknown to the writer or to anyone else, but its extension in length can be forecast with some degree of accuracy when the shoot at the junction of Jasper-Vesuvius veins has been opened for its full extent.

PROPOSED DEVELOPMENT AND COST.

Recommended first development is the extension of Wild Hog Adit. This extension should be from the face of Cross-cut No. 2, northeasterly as shown on Plate No. 4.

The length of the proposed cross-cut to cut Jasper-Vesuvius Vein will be from 245 to 330 feet, depending upon the dip of the vein. These distances are based on continuous dip below Vesuvius Adit at 55 and at 60 degrees. Above that adit the average dip approximates the latter figure with a flatter inclination immediately above and at the breast of the level where the dip is 50 degrees.

No definite knowledge can be gained of the rake of the shoot at the junction of the two veins. Above Vesuvius Adit in the first stope the inclination at the easterly end is about 70 degrees from the vertical to the east. At the west end of the same shoot the inclination is nearly vertical, so far as can be seen immediately above the level.

If this drag is persistent the shoot will be cut within 150 feet from the junction of the cross-cut with the vein. A greater distance will be required to be run easterly with each added degree of inclination to the east. At least 450 of easterly drifting should be planned and work should be continued until the vein intersections is encountered.

Two stopes have been started on a lens or lenses at 400 to 550 feet from the portal of Vesuvius Adit. If they continue downward, these lenses will be cut at or near the point where the proposed cross-cut cuts the vein. Were it not for this fact the course of the proposed cross-cut could be directed more to the easterly and some length saved.

The course shown on the map is recommended as being less direct to the most important point but as serving to cut the vein at the nearest point advisable and to prospect it in the extension as a drift to the east.

The total cross-cutting and drifting which should be planned as an initial step should be a minimum of 800 feet at this point.

At cross-cut No. 1 of Wild Hog adit 100 feet, at least, of drifting should be done westerly at the face of west drift on the vein called Jasper vein on Plate No. 4.

There is sound reason to believe that a shoot of pay ore lies immediately ahead of this breast and work should be continued far enough to prove or disprove this. As ore is opened at either heading it can be stored at the surface pending a decision regarding the type of mill improvement which will be used and no upraises need be constructed until this decision is reached.

The cost of this proposed first development will depend upon the choice of hand labor or compressed air.

Ventilation will be afforded by water-power. The wheel now in use should be discarded, a new pressure box should be built at Wild Hog portal, the pressure pipe rebuilt to the mill and the wheel now in place there should be used to run the fan now in use. To do this will require 400 feet of additional pressure pipe.

To afford ventilation for three shifts operation without interruption, the first 1500 feet of air pipe from the fan should be 10-inch pipe. The 6-inch pipe now in use should be replaced for this distance by the larger pipe and held in reserve for extension as work progresses.

The preceding under this caption was written in 1927. Subsequently in 1933 information was gained by the writer that at

the surface easterly from the face of Main Adit referred to as the breast of Vesuvius-Jasper drift at paragraph four, page 3D there was opened by former watchman, a showing of good surface ore not entirely in place.

The Vesuvius-Jasper drift should be advanced 100 feet by hand to develop this showing, beginning at the breast where vein is 2.7 ft. wide and shows \$4.55 per ton gold value. Except for that work all development should be followed by machine mining in future operations here.

Costs are tabulated below:

There is on the ground sufficient T-rail, splice bars and spikes for the 900 feet projected.

Compressed Air Mining

Ventilation and shop equipment	\$1,260.00
Boarding house equipment and building	350.00
Portable Saw Mill Set in place (used)	950.00
Building at Wild Hog Adit	500.00
Ingersoll-Hand oil Engine Compressor	5,350.00
Freight to Ground	540.00
Setting	9,575.00
Machine drills)	
Hose, tanks)	1,434.00
Tods, etc.)	
Air Receiver	175.00
3000 ft. 3-in. B.I. Pipe, Portland	1,125.00
Freight to the ground on above items	462.00
Setting pipe	100.00
Pipe tools, stocks and dies at mine	212.00
Picks, shovels and shovel sheets at mine	75.00
200 feet 1-inch B.I. pipe at mine	23.00
Engineering supervision to date of beginning operation	1,000.00
900 feet contract for heading at 8.50	8,500.00
Extra ore-car	85.00
	<u>\$22,821.00</u>

To assure the dependability of above estimate it is proper to say here that the writer will contract to equip the diggings with ample compressed air capacity, will perform 900 feet of development at Wild Hog adit and 100 feet of drifting at Vesuvius-Jasper fac , as recommended under prior caption, for

\$25,000.00, all equipment except personal belongings to remain the property of the Company.

This is provided only that work is begun in reasonable time of the year.

DISCUSSION

Heading by hand mining can be started on a day's notice after blacksmith and shop and boarding house equipment are on the ground or in one week after a decision is reached to begin operations.

Construction of buildings and installation of compressor equipment will require 45 days for complete installation. Compressed air machine work heading will be at the rate of 12 feet per 24 hours in each heading. If only one crew of three shifts is used the entire proposed development can be completed, using compressed air, in a total of four months from time actual work of installation is begun.

Cost per foot of contracted machine driven heading is much less than by hand work with four to five times greater speed attained.

Equipment once placed is permanent and mining can go on with greatest economy and without delay.

While the costs given may be bettered by using second-hand machinery, this is not recommended.

If conditions follow those above Vesuvius Main Adit, this development will open a shoot at least 120 feet long, 2.5 feet wide and 650 feet high, resulting in a tonnage of 15,000 tons.

In the light of absence of data other than those available and discussed herein, it would be mere guess-work to hazard an opinion as to values to be expected. At like elevations in this district the writer has milled ore averaging \$21.00 per ton, having width of 2 to 5 feet, and it is his personal expectation that Jasper-Vesuvius shoot will closely approach this, but to set up such figures as an estimate is not to be considered because of lack of supporting data.

THE VESUVIUS MINES COMPANY
DATA REGARDING OREGON-COLORADO AND
RIVERSIDE GROUPS

This compilation should be read in conjunction with Vesuvius Group Report, dated August 20, 1927.

The Vesuvius Mines Company

There has been no change in the company personnel since the date of the report. The company has no debts and is in full possession of its corporate rights.

Oregon-Colorado Group

This group comprises the seven patented claims listed below, all lying in one contiguous group, situate in Sec. 19-29 and 50, T. 25 S., R. 2S., W.M., in Lane County, Oregon.

<u>Lode Claims</u>	<u>Darvey No.</u>	<u>Acres</u>
Dora	453)	
Sampson	453)	40.26
Holy Smoke	453)	
Watson	453)	
Confidence	453)	
 Dewy	 455)	
Marie	455)	30.12
	Total Acres	<u>130.38</u>

Riverside Group

Riverside Group comprises the three patented lode claims listed below, all lying in one contiguous group, situate in Sec. 20, T. 3 S., R. 2 E., W.M., in Lane County, Oregon.

<u>Lode Claims</u>	<u>Survey No.</u>	<u>Acres</u>
Pascadena	319	
Hobart	319	
McKinley	319	
	Total group	59.20

Plate No. 1, Vesuvius Mine report, shows the position of these groups in the district and the plate opposite this page shows their precise location in reference one to the other and to

other surveyed properties of the district. The surveyed properties referred to are those that have been surveyed for patent, though all of these have not gone to final entry.

The three groups of Vesuvius Mines Company are outlined in color on the map.

Development

OREGON - COLORADO GROUP

The principal development of this group is an 1300 foot adit run on the vein. As shown by official plat of Surveyor General's office the portal of this adit bears $N.21^{\circ}30'W.$, 555 feet from the S.E. Cor. of Dora Lode. From this point it extends southeasterly extending along the greater part of the length of Confidence lode. The portal is now caved and adit cannot be entered.

From the portal the ground rises rapidly to the southerly and the face has backs of about 900 feet on the vein.

Old survey notes show that the adit is in vein matter for its entire length and that four shoots were cut within the first 1100 feet. No data are available to show whether or not the face is in ore.

The first shoot was cut at 150 feet, the second at 458 feet, the third at 673 feet, and the fourth at 1100 feet from the portal.

The lengths of the shoots along the vein were 50 feet, 137 feet, 50 feet and 140 feet, respectively. Vein widths are not given in any data available.

As was stated in Vesuvius Mine report, all mine assay records were stored or lost, after the death of the late manager, P.J. Hard. For this reason no details can be given to show routine mine assays. Letters from the mine foreman to Mr. Hard, in 1914, as the work progressed, state that the ore was wider than

the drift which was four feet wide.

A five pound sample of better grade chalcopryrite ore with spots of bornite was taken by the writer in 1927. Determined for the present compilation this gave results as follows:

Gold Ozs. Trace Silver Ozs. 38.40 Copper Percent. 6.41

This is not submitted as an average of the value of the ore on the dump.

There is, however, a fair though as yet unknown quantity, class of ore on the dump. The dump content has total of 1000 tons, more or less. Surface chip sampling of that dump by the writer gave results as follow:

Gold 6.12 Ozs. Silver 2.10 Ozs. Copper 1.85%

In the private letter files of the late F.J. Hard were found assay and flotation tests data as shown below:

Certificate No. 661 of the Centennial Laboratories, Denver, Colorado

Marked	Gold	Silver. Ozs.	Copper Percent	Date
No. 1	Trace	2.20	7.8	July 25
2	"	3.00	3.0	1916

Certificate of the American Continuous Retort Company, Denver, Colo.

Marked.	Gold. Ozs.	Silver Ozs.	Copper Percent	Date
O.C.	0.56	5.00	5.67	Nov. 15 1916

Two flotation tests were made by Minerals Separation North American Corp., dated October 18, 1916, and returns were accompanied by a letter of advice under the same date.

Test No.1

Marked; sent by Vesuvius Mines Company, Test No.1, Sample 6013, Ref. XI-29-1#2

Product	Weight Percent	Ag.				Distribution Perc.	
		Ag.	Cu.	Fe.	Ins.	Ag.	Cu.
Heads.	100.0	4.50	5.8	12.7		100.00	100.00
Conce	14.1	25.50	24.72	31.8	6.4	85.6	91.6
Midds.	12.0	4.6	2.0	18.0	53.0	13.25	6.3
Tails.	74.0	0.2	0.11	7.8		3.13	2.1

Test No.2

Heads.	100.0	3.99	3.73			100.0	100.0
Conce.		23.5	23.24		4.4	78.0	85.4
Midds.	7.1	9.52	6.30			16.95	12.07

much of this has washed away 8/76



Test No.1

Marked: Product.	Sent By Weight	Vesuvius Mines Co. Test #1, Sample 6013, ref.XII-24				Distribution Percent		
		Assays	Assays			Au	Ag	Cu
	Percent	Au.	Ag.	Cu.	Zn.	Au	Ag	Cu
Heads	100.0	0.024	4.47	3.58		100.0	100.0	100.0
Conce	11.0	0.26	29.8	27.7	2.4	27.1	73.3	83.3
Midds	11.9	0.02	4.8	2.96	nil	9.8	12.8	9.8
Tails	77.1	0.02	0.80	0.38	nil	63.1	13.9	7.8

Test No.2

Heads	100.0	0.09	4.09	5.65		100.0	100.0	100.0
Conce	12.8	0.05	25.4	24.2	3.2	74.5	79.0	85.0
Midds	7.2	0.03	5.0	3.2	trace	24.5	9.8	6.3
Tails	80.0	trace	0.6	0.4	no		11.7	8.7

Distribution percentage does not check in Test No. of of this series, due either to a clerical error or error in determinations. (WWE)

There are no data available to show from which of the four shoots ore was taken for any of these tests. It is possible that the first series was run on one of the shoots struck in the earlier development and the other from a shoot cut when development had progressed further.

The plan of the management was to equip Oregon-Colorado and Riverside groups with a common plant so situated as to permit of gravity haulage from both properties to the plant. This was never done, due to conditions fully set forth in Vesuvius report.

It is evident that it was planned to treat ores having values as shown by assays of ore submitted for flotation tests.

These are tabulated below:

1918	Test No. 1	Silver	4.35	Ozs. per ton	Copper	3.8	percent
"	No. 2	"	3.99	"	"	3.75	"
1920	"	No.1	4.47	"	"	3.58	"
"	"	No.2	4.09	"	"	3.65	"

This shows an average content of 4.22 ozs. silver and 3.69 percent copper.

It is a common report in the district that the ores here had a constant though low content in gold. Gold was determined in Minerals Separation tests of 1920 and confirms the report.

Notes Sec dump sample p.3.

Neglecting gold content, with net copper 14 cents, net silver 55 cents and 95 percent recovery, this ore has recoverable value

of \$12.02 per ton.

In addition to the main adit there is a 450 foot upper adit on the Confidence Lode.

This was driven along the vein at an elevation of 450 feet above the main adit. According to the statement of a former foreman this opening shows pay ore for most of its length.

An undated report by Frank J. Hard, written in long hand late in the operating period of the company, has the following to say:

The ore of Oregon-Colorado is characteristic ore of copper, chief value being in chalcopyrite, silver and gold are also present. The main working tunnel is on the vein, about 2000 feet (this length was greater than that shown in survey notes due to progress subsequent to the date of the notes. W.W.E.) giving a depth of 1000 feet vertically below the apex of the mountain.

Very little cross-cutting or raising has been done. Several short tunnels and cuts have been made on the surface and all show well.

The outcroppings are very pronounced. A sample composed of croppings picked up on the surface for 2000 feet, along the vein, carried

Gold 0.21 Oz. Silver 11.25 Ozs. Copper 5.0 Percent.

It is fair to presume that the ore is continuous from the deep tunnel to the surface; values in gold increase as we raise, copper increases as we sink.

The vein shows in the 2000 foot tunnel all the way, from very narrow to the width of the tunnel. This tunnel, if run through the mountain would pass through ground better than the side it starts on, as shown by various cuts, etc. (The Confidence 450 ft. adit, perhaps. W.W.E.)

It would also come out so that the ore from this property and the Riverside mine could be handled conveniently at the same plant. Water or electric power could be installed.

An undated report on the letter head of James McClave, Metallurgical Engineer, Ideal Building, Denver, Colorado, shows assays as follows:

Heads	4.4	Ozs.	Silver	Copper	8.9	Percent
Heads	2.2	"	"	"	3.6	"

This was accompanied by copies of flotation tests which showed 98 and 95 percent extraction.

R.W. Lodge, Mass. Inst. of Technology, in a letter dated April 30, 1903, says: " My report upon the sample of ore which you left with me on April 24th, is as follows: Weight of ore received $3\frac{3}{10}$ kilograms or 16 $\frac{3}{10}$ pounds. The ore was assayed for copper but not for gold or silver. Analysis for copper showed 6 $\frac{3}{10}$ per cent.

January 1910 report to stockholders lists following returns in dollars without weight of various metals.

Henry E. Wood, Denver, Colo.	47.27
J.S. Diller, U.S. Survey	22.00
Henry Carmichael, Boston	15.59
J.W. Cook, Bohemia P.O. Masick Mine	35.00
J.W. Cook, "	3.00
Charles Hard "	3.00
" " "	3.40
" " "	6.00
" " "	2.00

These are shown to have been assays of Oregon-Colorado ore but their position in the vein is not shown.

These data are submitted as acceptable evidence that ore of a good milling grade was opened at various places in the workings. The fact that the old survey notes show there were four shoots of ore opened some years before operations there were completed, permits the inference that some, at least, of the assays listed here were representative of these shoots.

Assuredly they are representative of certain points reached in the progress of the years.

Development at Riverside Group

Besides numerous shallow cuts and adits on the vein the Riverside group has a main adit which starts on the vein at the surface, is reported to follow it for several hundred feet and thence to be on one wall or the other to the face. This opening is caved at the portal and cannot be entered at this time.

The plat of official survey shows that the portal bears N. 45° W., 545.3 feet from the S.W. Cor. of McKinley lode. Old mine survey notes show that the adit runs northeasterly, has a length

of 1780 feet, and that, after the drift left the vein numerous cross-cuts were run which cut the vein and showed continuity of vein matter from the portal to the face.

From the portal the ground rises steeply in the direction of the length of the adit and the face has a vertical depth under the surface of 1000 ft.

Riverside Ore Values.

Other than general statements found in the personal files of Mr. Hard, the only direct evidence regarding Riverside ore values is given below.

In the report referred to above Mr. Hard shows:

Gold 0.10 ozs. Silver 2.90 Ozs. Copper 1.86 Percent
Lead 0.70 Percent Zinc 6.71 Percent.

with the notation, "This is unusually high in zinc and low in silver."

The Oregon-Colorado has no zinc, carries sulphur, lime and iron.

Certificate of Idaho Reduction Company, Inc. Clarkson, Wash.

Dated August 4, 1906.

Marked	Gold, Oz.	Silver Ozs.
our sample, Group 111	0.54	4.53
	Lead and zinc not determined.	
	Lime 0.23 percent	Silica
	Uran. 0.42 "	18.09 Perc.
		Aurichal
		9.82 "

Certificate of Henry Carmichael, 176 Federal St. Boston, Mass., April 22, 1905.

Marked	Gold Ozs.	Silver Ozs.	Copper	Lead	Zinc
our sample of	0.10	2.9	Percent	Percent	Percent
submitted on			1.86	0.70	6.01
th inst.					

Walter Eaton, University of Oregon, student in engineering, class of 1909, in April that year published an article in the Oregon Engineer, the paper of the Engineering Club of Oregon. His was titled Description of the Properties of the Vesuvius Mines Company, Bohemia, Oregon.

Referring to Riverside Group he said:

The width of the Riverside vein is much in excess of that required for tunneling and as a consequence both walls are not ex-

1937

posed. Cross-cuts at intervals indicate an unusually wide vein. One cross-cut near the breast runs through 30 feet of solid ore. Like the Oregon-Colorado it is rich in copper and carries gold and silver values. Zinc blend and galena occur in good quantity. The gangue is quartz and sericite.

Several hundred feet of work was done after 1909 and the faces referred to by Eaton was probably at about 1200 feet from the portal.

Geology of Oregon-Colorado and Riverside Groups

The geology of the area in which these two groups lie is typical of the district at large as shown in the Vesuvius report.

Both veins are replacements along fault planes. Both are powerful and are traceable for 1500 to 2000 feet on the surface. Oregon-Colorado vein lies in a brecciated area. The gangue is altered andesite, andesitic breccia and hard quartz. No brecciated material was observed at the Riverside by the writer in 1925. Riverside dump ore shows evidence of open vein spaces which have been filled with stalagmatitic calcite crystals. To the eye this dump shows less pyrite than is evident at O-C dump with disseminated galena and sphalerite.

The last work done at Riverside was not in ore and the valueless vein matter covers most of the dump, with harder complex ores showing through on the lower flank.

TOPOGRAPHY AND ECONOMIC CONDITIONS

(See Plate 1, Vesuvius Report)

Oregon-Colorado main adit is on the east slope of Grouse Creek, a small stream which flows into Steamboat Creek about four miles south from the property.

Riverside main adit is on the west bank of Horseheaven Creek, a sizeable mountain stream which joins Steamboat Creek about two miles south from the property.

Oregon-Colorado adit lies at an elevation of about 4000 feet; Riverside main adit at an elevation of about 3500 feet; both lying at erosion levels 1500 to 2000 feet lower than Vesuvius-Musick-Champion areas.

Both groups have water power ventilating systems now out of order, but susceptible of rehabilitation at a nominal cost.

Neither group has surface improvements other than a shop and cook house at Oregon-Colorado, destroyed by snow in 1929. The buildings at Riverside have been crushed by snow. Hydroelectric power can be generated to serve any requirements by combining the waters tributary to Steamboat Creek at some point above the flat reaches of that creek which begin about five miles away. It is reasonably certain that at a point three and one-half miles from Oregon-Colorado there is a site where inexpensive diversion dams on City, Horseheaven, and Rock Creeks will furnish a high head power for all year use. This has not been studied by the writer.

The country about the two groups is abrupt to precipitous in relief, and development can be performed through adits to a depth of at least 2000 feet below the two vein outcrops.

Both groups are very heavily timbered with red and yellow fir and are surrounded by untouched stand of Umpqua Forest Reserve.

The Oregon-Colorado road which was built by the Vesuvius

Kinot Co. is in bad order for a part of its length and will require repairs before work is resumed.

To deliver concentrates to or supplies from the railroad at Disston about two miles of mountain road must be built from near the Champion saddle to connect with the completed grade on Frank Erice Creek.

This work is going forward yearly with Forest Service appropriation and the gap will be closed by the end of 1930 if information gained on ground is correct.

When this is completed freight from Oregon-Colorado can be hauled to Disston for \$4.50 per ton, with back freight at \$5.50 if company owned trucks are used. This is for summer hauling. Winter hauling on runners will cost \$6.50 and \$7.00 for outgoing and incoming freight respectively.

For a medium to large scale operation economic conditions are excellent as compared with most high-altitude mining.

CONCLUSION

The reopening of these two properties is fully warranted by the ore known to exist, though in quantity is as yet unknown to the writer.

Common report is that Riverside ore is as good as Oregon-Colorado though not opened along the vein in quantity at Oregon-Colorado.

It is not practicable for the owning company to do this work rehabilitation and it is recommended by the writer that a tender of sale be made to responsible operators giving sufficient time for full examination before a payment is exacted.

Respectfully submitted,

(Signed) Wm. W. Elmer

(3/15/29)