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CONCLUSIONS

The West Coast Mine is situated in Humboldt County, near Winnemucca, Nevada. The property consists of 20 unpatented lode mining claims and 640 acres of fee land.

There are 97,900 tons of possible ore available at the West Coast Mine at a value of $82.62/ton at present day values. The mine recently ceased operation due to lack of financing for a mill and the high cost of transporting ore to the smelter in East Helena, Montana.

From the economic analysis of the West Coast Mine the projected mining costs would be $24.78 per ton, while the milling costs are estimated at $21.00 per ton.

The capital costs are estimated at $450,000 based on a 100 ton per day selective flotation and cyanidation mill, including necessary mine rehabilitation and equipment. If the tonnage and grade are verified, the mine life would be 3.25 years with a 100% return on investment per year after taxes.

Detailed mapping and sampling should be undertaken to block out tonnages on the main vein, while a limited exploration program should be undertaken of the other veins on the property. Metallurgical testing of the ore must be undertaken before a finished milling flow sheet can be drawn.

WEST COAST MINES

HUMBOLDT COUNTY, NEVADA

INTRODUCTION

The West Coast or Pansy Lee Property is located in Humboldt County, Nevada, (See Figure 1). The property is easily accessible by 12 miles of graded dirt road from Winnemucca, Nevada. The topography in the area is moderate with elevation ranging from 4600 ft. to 5200 ft.

Adequate water is reputedly available from a nearby well which is currently being used to supply a 50-ton flotation mill. Water is also available in the West Coast Mine just below the 810 level where the water is standing in the shaft. The shaft was originally sunk to the 910 level, so there is nearly 100 ft. of water.

Map No. WC74-1 shows the general surface features and the claim locations. West Coast Mines, Inc. owns the 20 unpatented mining claims in Section 6, T36N, R35E and 560 acres of fee land in adjoining Section 1, T36N, R36E. The remaining 80 acres of fee land in Section 1 are owned by Mrs. Anna B. Stevens, of Davis, California. The property owned by West Coast Mines, Inc. was leased to Western Minerals Company on August 4, 1970 and later assigned to Clem Mines and eventually to Alpine Minerals, Inc. (the last 3 companies are owned by Bill Clem of Winnemucca, Nevada; no interests were retained by either Western Minerals or Clem Mines). Alpine Minerals, Inc. entered into a joint venture with West Coast Industries, Inc. on September 14, 1973. The joint venture is known as the West Coast Mines Joint Venture.

The lease from West Coast Mines, Inc. requires minimum monthly royalty payments of $500. with a production royalty of 10% of net smelter returns, less freight and shipment charges. Currently the minimum monthly payments have been reduced to $100. There is no end price on this lease and no provision for applying production royalties against future minimum royalties. The term of this lease is 35 years.

On August 30, 1974, West Coast Mines Joint Venture signed a contract with Winnemucca Milling Co. which allows the latter to purchase up to 12,000 tons of rock per quarter from the waste dumps on the property. The contract covers a maximum of 9 quarters, or 100,000 tons, whichever comes first, and can be terminated with 2 quarters notice by West Coast Mines Joint Venture.

Bill Clem has a 10 year lease with Mrs. Stevens covering the 80 acres of fee land. This lease requires minimum monthly payments of $150. and a production royalty of 10% of net smelter returns.

HISTORY AND PRODUCTION

The early history of the property is rather obscure and little is known of initial developments. Prior to 1937, Nevada Consolidated sank the 1910 shaft to a depth of 260 ft. (See Map WC74-1). The vein was reportedly 4 ft. wide at the bottom. Apparently there was only minor production from this shaft, as the drifting on the 80, 140 and 200 levels totaled less than 1000 ft. An old report by Edward C. Uren, Mining Engineer, dated July 23, 1937, indicates a production from the 1910 shaft of approximately $24,000.

At the time of Uren's report the Swede shaft had been sunk to a depth of 185 ft. The Swede tunnel which connects with the shaft on the 70 level had been driven and about half of the vein above this level had been stoped. During this period the ore was shipped to either Western Ore Purchasing Company in Reno or to smelters in Salt Lake City. The cost of freight and treatment ran between $19 and $42 per ton.

At some time during 1937 West Coast Mines of Sacramento, California, took over control of the property and began an extensive development program centered around the Swede shaft. The shaft was deepened to the 910 level and over 6000 ft. of lateral workings driven on 5 levels below the 250 level (See Map WC74-2). According to a report by Bill Clem, West Coast Mines produced 35,000 tons valued at $1,627,000 prior to being shut down by government order L-208 in 1942. Production figures based on Nevada Bureau of Mines Bulletin 59 (1964) are given below:

	Date	Tons	Value	Au oz/ton	Ag oz/ton	Cu %	Pb %	Ag/Au
Shipped	1936-37	205	$35	(from Uren report)				
Shipped	1939-40	1,677	$32					
Milled	1939-42	39,598		0.134	11.5	0.09	1.29	85/1
Shipped	1941	407		0.385	32.5	0.36	3.80	84/1
		41,887						

Recently, West Coast Industries provided $50,000 working capital to equip the Swede shaft and begin production on the 810 level. As a result of this expenditure, 50 tons of ore were shipped to east Helena, Montana, but most of the profit was eradicated by extremely high freight rates. The property is currently idle awaiting further financing.

GEOLOGY & MINERALIZATION

The West Coast property lies in the northern end of a northeast trending section of unnamed quartzite and mudstone. This northwest dipping formation is late Triassic in age. The thickness is estimated at between 3000 and 4000 ft. The formation consists mainly of light brown, thin-to-thick-bedded, fine-grained, feldspathic quartzite and light brown mudstone with some limestone and phyllitic shale.

Preliminary mapping in the Swede shaft indicates the presence of a broad overturned anticline with a horizontal axis centered near the 250 level. Below this level the beds are dipping 60 to 70° westerly. On the lower level of the mine there are several exposures of altered porphyritic tuff. The relationship between the tuff and the quartzitic is not clear at this time.

There are at least 5 veins on the property. The Swede vein is the most extensively developed. The X-vein is exposed on the 810 level by a 150 ft. cross-cut from the Swede shaft. Some drifting and stoping has been done along the X-vein which appears to average about 12 inches in width.

The Swede vein ranges in width from 5 inches to 3 ft. While the vein is remarkably persistent in length and depth, it is not a simple vein and often consists of 2 or 3 separate veins within a zone of strong silicification. The country rock is generally altered and, where well fractured, mineralization has invaded the hangwall sediments up to 10 ft. away from the vein. Drilling and further sampling in the stopes are needed before an evaluation of the hangwall mineralization can be made, but several of the stopes investigated were obviously mined to a width much wider than the vein and the minimum stoping width.

The primary minerals present in the Swede vein include argentite, arsenopyrite, sphalerite, stibnite, covellite and proustite with lesser amounts of jamesonite and jarosite. Gold occurs free and associated with the arsenopyrite. The principle gangue is quartz. The old workings display spectacular formations of secondary minerals including copper sulfates and silicates, and various iron bearing minerals such as melanterite, goethite and possibly turgite. The oxide zone extends to a depth of approximately 250 ft. in the Swede shaft.

RESULTS OF EXAMINATION

The author, with the aid of another geologist from Petro-Mineral Projects, Inc., spent 2 days during November mapping and sampling the workings in the Swede mine. The hoist and power plant had been removed so the only access was by ladders. The shaft is inclined 65° to the east and is timbered to 5' X 10' inside dimensions. Compressed air, water and ventilation lines are still operational in the shaft. Track is still present on the lower levels. The results of the mapping are shown on Map WC74-2. Most of the stopes and chutes are in good condition, but additional timbering and rehabilitation would be necessary throughout the mine before continuous production could be acheived.

The following list shows the estimated stoped areas on the various levels as determined by the recent mapping:

Level	Stoped Areas (sq. ft.)
250 to surface	8,820
350	13,100
450	45,750
585	32,125
710	49,850
810	34,850
Total	184,495 sq. ft.

Since part of the mine was inaccessible, it is felt that an additional 10% should be added to this figure to allow for any unmapped stoping. With this and the total production figure the average stope width can be estimated as follows:

$$\frac{41{,}887 \text{ tons X } 12 \text{ cu.ft./ton}}{202{,}944 \text{ sq. ft.}} = 2.48 \text{ ft.}$$

The estimated areas of remaining ore are given below by level. The ore above the 810 level can be considered possible. It is known that the shaft extended to the 910 level, but there are no available maps and the 910 level is presently inaccessible. The projected ore listed below lies between the 810 and 910 levels. The tonnage figures are based on the average stope width determined above.

TABLE 1

PETRO-MINERAL PROJECTS, INC.

MINE *West Coast Mine*

BOXED	SAMPLE NO.	LOCATION	DESCRIPTION WIDTH	ASSAYS AU	AG	CU%	ZN%	AS%	
	113-1	450L No.	Sample of hem. rich vein 4-6"	<0.1	N	0.004	0.2	0.3	← SPECTROGRAPHIC →
	113-2	450L No.	24" chip from stope	0.17	8.77	0.07	0.2	>1.0	
	113-3	450L No	24" chip from same stope	<0.1	0.29	0.005	0.1	0.5	
	114-1	710L So.	24" chip sample X vein, stope 70-80' from face	<0.1	5.85	0.06	0.2	>1.0	
	114-2	810L So.	" " " stope 50' above level	<0.1	8.77	0.1	1.0	>1.0	
	114-3	810L No.	18" chip vein, strong sulfide	0.17	20.47	0.2	1.0	>1.0	
	114-4	710L So.	chip sample edge of stope on floor	<0.1	0.44	0.005	0.15	>1.0	
	114-5	585L So.	2½" chip main vein & poss intersection of smaller v	<0.1	0.29	0.003	0.1	1.0	
	114-6	450L So.	24" chip of pillar in stope	<0.1	0.59	0.01	0.07	1.0	
	74-524B	710 & 810 L	Composite of vein from both levels	0.14	6.1				← FIRE →
	74-524C	810L	Vein material from recent test workings	0.05	1.4				
	74-524D	710L	Grab sample from recent workings	0.29	1.7				

Level	Possible Ore	Area(sq.ft.)	Tonnage
350		11,500	2,380
450		62,800	12,980
585		119,950	24,790
710		97,375	20,120
810		82,050	16,960
Total Possible Ore		373,675	77,230
910	Projected Ore	100,000	20,670
Total Possible & Projected Ore		473,675	97,900

Additional ore possibilities include lateral extensions along the Swede vein, particularly between the 1910 shaft and the present extent of the Swede workings, and the other four veins on the property. The X-vein which crops out along the surface has been exposed on the 810 level and could contain considerable tonnage of mill grade ore.

Table 1 lists the assay results for 12 samples taken throughout the mine. Although these samples can hardly be considered representative of the whole mine, they show about half the value indicated by the production figures. Any estimate of average grade with the available data would be rather unreliable. For the sake of analysis the following value is determined based on the average grade of the 39,598 tons of ore previously milled.

Metal	Content	Price/unit	Value/ton
Gold oz/ton	0.134	$150./oz	$20.10
Silver oz/ton	11.5	$4.50/oz	51.75
Copper %	0.09	60¢/lb	1.08
Lead %	1.29	24¢/lb	6.19
Zinc %	0.5 *	35¢/lb	3.50
		Total	$82.62

* estimated, was not reported

This total represents only the average value of past milling production at present prices. It will be used later for comparison with the minimum necessary grade based on tonnage, operating cost and capital cost.

ECONOMIC ANALYSIS

Mining Costs

The cost of mining the West Coast ore was determined by 2 different methods. The first method involves indirect evaluation using available average figures for cut-and-fill type mining operations. This information indicates that ore can expect to produce 5 tons per man shift with a labor factor of 0.47. Assuming the average man-shift costs $60., the average mining cost per ton would be:

$$\frac{\$60/\text{man-shift}}{5\ \text{tons/man-shift} \times 0.47} = \$25.50/\text{ton}$$

A more direct method of analysis follows. Two men working in a stope 4 ft. wide can average 36 tons of broken muck per shift. Of this, half is fill and half is slushed into the ore chute, so they average 18 tons of ore per shift. Operating 3 stopes on 2 shifts would result in 108 tons of ore per day. The necessary personnel for this operation are listed below:

Number	Description	Wage/shift	Total
6	Miners	$60	$360
6	Helpers	$45	$270
2	Tramers	$45	$ 90
1	Hoistman	$75	$ 75
1	Skip loader	$45	$ 45
2	Foremen	$75	$150
			$990

In addition, these men would receive benefits amounting to 27% covering unemployment insurance, social security, and state workmen's compensation insurance. This would bring the total to $1,257.30. The average labor cost per ton of ore would then be:

$$\frac{\$1,257.30}{108 \text{ tons}} = \$11.64$$

Again, assuming labor is 47% of the total mining cost, the total cost per ton would be:

$$\$11.64/0.47 = \$24.78$$

To further clarify the above-listed personnel, hoisting of ore would be done on the day shift only. Ore would be trammed from the chutes to the main ore bin during both shifts. One man on the mill crew would double as hoistman whenever needed during the second shift.

Milling Costs

The ore of this mine is complex as the following analysis of typical vein material will show.

Au = 0.34 oz/ton   Ag = 23.6 oz/ton

Pb = 1.2%   Cu = 0.15%   Fe = 7.9% with an arsenic content of 1.4%. This type of ore is not suited to a simple cyanide circuit.

The best answer to milling this ore would be a flotation plant producing three products. An acceptable answer is a flotation plant producing a sulphide concentrate which is roasted and batch cyanided. This plant should also have a free gold circuit between the grinding circuit and the flotation circuit.

The concentrates from the flotation circuit must be roasted due to the high percentage of arsenic and sulphur. This roasting, when done correctly, will give a product which is amenable to cyanide treatment. The consumption of cyanide reagents will be high per ton of concentrate, but the concentrate tonnage will be low. The cyanide reagent cost, rationed back to mill feed (head tons),will still be economically favorable.

At a 30:1 concentration ratio the concentrates from typical mill heads will contain: Au - 4.02 oz, Ag - 335 oz, Pb - 38.0%, Cu - 2.7% and Zn about 10%. The arsenic will concentrate up to the 20 to 30 percent range.

This type of complex sulphide ore requires selective flotation for recovery of the base metals, plus a cyanide circuit for the recovery of the gold and silver. The flotation section of the plant will contain three circuits. These circuits will produce a copper concentrate, a zinc concentrate and a lead concentrate. The middling product from the last flotation circuit will be the feed to the cyanide circuit.

The feed to the cyanide circuit will contain most of the gold and silver in the form of pyrites and arsenopyrites. This material will also contain most of the arsenic. Due to the high arsenic-sulphide content of this material, a roasting process will have to be installed in front of the cyanide process.

The selective flotation circuits will use standard milling practices with normal reagent consumption. The cyanide circuit will employ batch cyanidation processing with special pretreatment for the arsenical compounds. From this circuit the arsenical compounds will be recovered and treated by drying and roasting to remove the arsenic. The roasting process will also oxidize the gold and silver minerals. These oxidized products will be batch cyanided to recover the gold and silver. The arsenic fumes will be treated by electrostatic precipitation and liquid scrubbing. The milling of this type of ore can be divided into two main recovery systems. The first is the flotation recovery system which will be a copper concentrate product, a lead concentrate product and possibly a zinc concentrate product. The second recovery system will yield gold and silver bullion from the cyanide system and an arsenical by-product.

The economics of this type of milling can also be divided into two major classes. The flotation mill, with its selective circuits is a standard milling procedure with standard milling costs. These costs can be broken out into crushing and conveying, grinding and classification, flotation, filtering, plus drying and handling of concentrates. The expected costs for this phase of the milling will be as follows:

Crushing & conveying	$3.48
Grinding and classification	3.22
Flotation	2.87
Filtration	.63
Drying and handling	1.55
Total	$11.75

There will be a tailings and waste disposal cost of about $0.35 per ton of mill feed. There will also be indirect costs which will amount to $2.90 per ton of processed ore. These figures give a total projected mill cost of $15.00 per ton for the flotation plant.

The second part of the milling program will be for the recovery of the gold and silver from arsenical concentrate made in the last circuit of the flotation plant. This concentrate will contain about 4 ounces of gold per ton plus nearly 400 ounces of silver per ton. In addition, this concentrate will have an arsenic content of around 25%.

Before the gold and silver can be recovered, the material will have to be roasted to drive off the arsenic. This will be recovered as a by-product of indefinite value. The gold and silver will be recovered by batch cyanidation. The projected costs for this part of the milling is as follows: (based on tons of mill feed).

Drying and roasting	$2.72
Fume treatment	1.18
Cyanide treatment	.80
Bullion recovery	.35
Slag and waste disposal	.10
	$5.15

Indirect costs will add another $0.85 to this charge, making a total recovery cost for the section of the mill up to $6.00 per ton of mill feed.

The projected operating costs for the total milling program is $21.00 per ton of mill feed. This includes indirect costs, metal replacement costs and waste disposal charges. This will produce 5 products, although some of them will be combined into one product for ease of marketing. In the flotation plant we will make a copper concentrate, a lead concentrate and probably a zinc concentrate. The product from the roasting-cyanidation plant will be combined gold-silver bullion. This product will be furnaced in-house rather than at an outside smelter. It can then be sold to a refinery or be further treated in-house. If it is elected to treat the rough bullion in-house, there will be further charges incurred. The charges as set forth in this report do not include bullion refining.

The type of selective flotation mill set forth in this report is an industry standard for high sulphide ores. The roasting and batch cyanidation concepts are used in special situations and will require extensive testing before meaningfull parameters can be established. I believe this ore warrants this type of testing. I feel sure the proposed milling circuits represent sound metallurgical practice, which when weighed against the projected costs is the best answer to milling the ore from the West Coast Mine.

Related Costs

Based on the concentration ratio, the operator could rent a 10 yd. dump truck and ship concentrates to East Helena, Montana, weekly. The cost per trip would be as follows:

Truck rental	$650
Driver	$380
Expenses	$480
	$1510

The smelter charges will average about $20 per ton of concentrate. Each shipment will contain approximately 23 tons of concentrate. The cost of freight and smelting per ton of concentrate would be:

$$\frac{\$1510}{23} \times \$20 = \$85.70$$

The mill will average 30 tons of ore to 1 ton of concentrate, so the cost of freight and smelting per ton of ore would be:

$$\$85.70/30 = \$2.86$$

Capital Costs

The capital cost of constructing a 100 ton/day mill and rehabilitating and equipping the mine is estimated at $450,000. The capital cost is presently poorly defined and must await metallurgical testing and detailed feasibility study before it can be accurately determined.

Evaluation

The preceding calculations can be summarized as follows:

Total tonnage 97,600 tons

Mine life based on 30,000 tons/year = 3.25 years

Capital investment $450,000

Required return on investment - 100%/year or $1,462,500 net

Required net per ton $\frac{\$1,462,500}{97,600 \text{ tons}}$ = $14.98/ton

Mining Cost	$24.78
Milling Cost	21.00
Freight and smelting	2.86
Overhead	5.00
	$53.64
Net	14.98
	$68.62
Royalty	
(10% gross, less smelting & freight)	6.57
Gross	$75.19/ton

Thus a gross value of $75.19 per ton of ore would be necessary to return 100% per year, before taxes, on the capital investment with no allowance for exploration-development, depletion or depreciation.

Assuming $200,000 was spent during the main life on exploration resulting in no additional ores and including depletion, depreciation and taxes, the following calculations indicate the minimum gross value per ton to yield a 100% return on investment per year.

Gross/ton = X

		direct costs	exploration	royalty
Net before taxes	=	X - 53.64	2.05	0.X
	=	0.9 X - 55.69		

		net before taxes	depreciation*	depletion*
Taxable income	=	0.9 X - 55.69	- 2.77	0.15 X
	=	0.75 X - 55.69		

*depreciation = 60% over 3.25 years

$$= \frac{0.6 \times \$450{,}000}{97{,}600 \text{ tons}} = 2.77$$

*depletion = 15% of gross or 0.15X

Assume tax rate of 50% on taxable income. Net profit after taxes is then 50% of taxable income plus the depreciation and depletion allowances.

Net profit after taxes = 0.375X - 29.23 + 2.77 + 0.15X

= 0.525X - 26.46

It was determined earlier that the required net per ton to return 100% per year on the investment is $14.98.

14.98 = 0.525X - 26.49

X = gross/ton = $78.93

This value of gross/ton is 95% of the calculated current gross per ton based on the 39,598 tons of previously milled ore. Therefore, even if no additional ore is developed during the life of the mine, it could still offer an attractive investment. If the grade of ore is similar to that milled in the past, and the tonnage can be substantiated, the West Coast Mine could return the capital investment within 1 year and 100% during every year of operation thereafter.

Figure 2 is a graph relating return on investment versus gross value per ton. The following assumptions are made:

1. 97,600 tons of ore
2. $450,000 capital cost
3. 100 ton per day mill
4. Mining, milling and related costs as outlined above
5. $200,000 spent for exploration with no new ore developed
6. Depletion and depreciation as outlined above
7. No allowance for time value of money

RECOMMENDATIONS

The following program is recommended to determine the average grade of the remaining ore in the West Coast Mine. Detailed mapping would be completed on each level. Samples would be taken on 10 ft. centers throughout the mine. Limited exploration of the other veins on the property would also be undertaken. In all, 1000 samples would be collected and analyzed for gold, silver, copper, lead, zinc and arsenic. Initially, to cut down on assaying cost, all samples would be analyzed for gold and silver while every other sample would be run for the remaining metals.

The program includes metallurgical testing of 1 - 3 tons of ore which would be selected to be as representative as possible of the average. An allowance is also made for a fairly extensive feasibility study based on the sample results and metallurgical tests. The sampling phase would require 2 months to complete, including analysis and interpretation of results. The metallurgical testing requires about 3 weeks to complete, but there is currently a long waiting list at most labs (6 months for Denver Equipment). However, one could

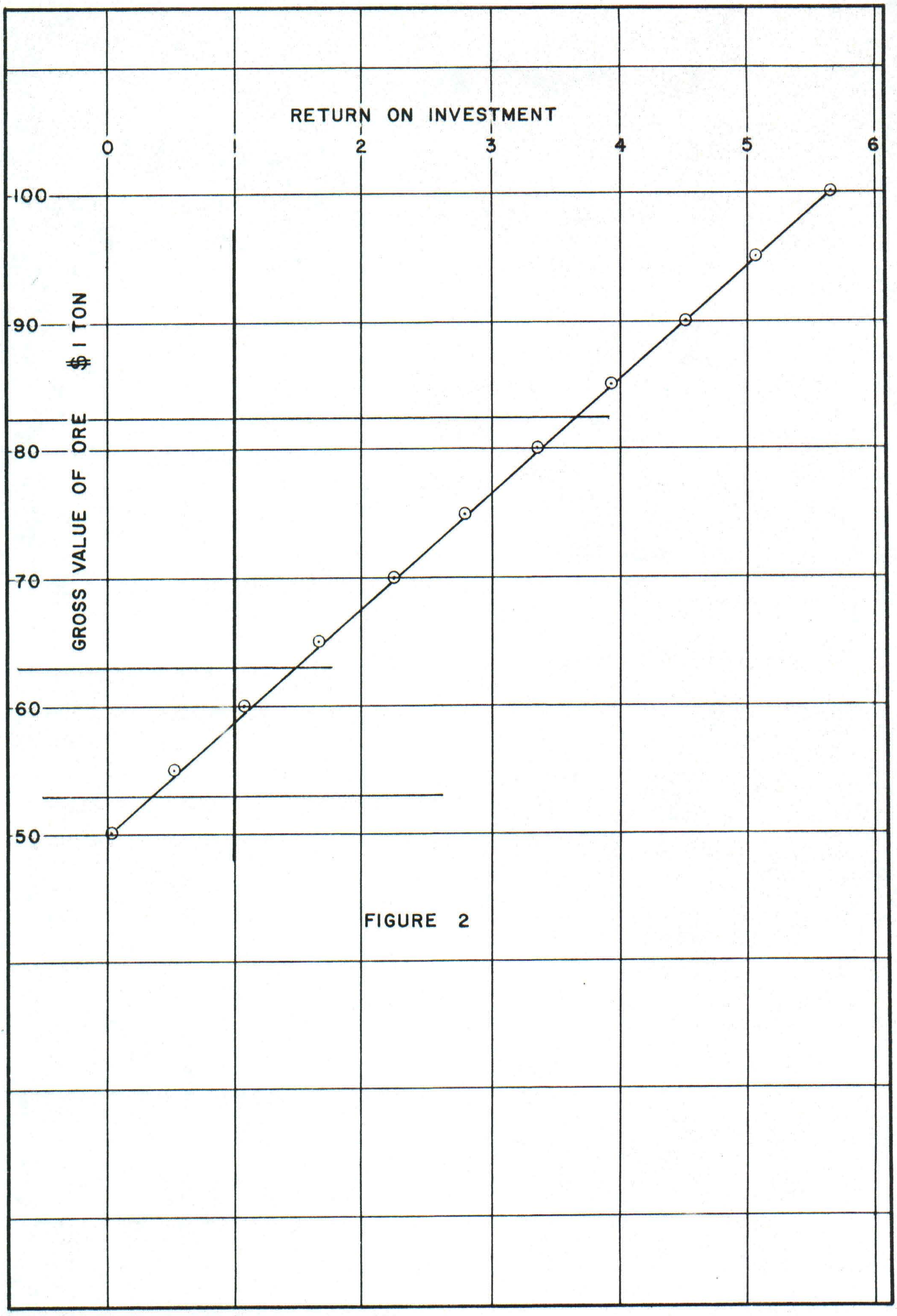
RETURN ON INVESTMENT
0
1
2
3
4
5
6
100
90
80
70
60
50
GROSS VALUE OF ORE $ / TON

FIGURE 2

get on the list at the beginning of the program to cut down on delay. There would be no obligation. The feasibility study would require 1 month to complete once all data was received. The total program would require 4 to 8 months, depending on the delay for metallurgical testing.

Sampling & Mapping - surface and underground	
2 geologists - 30 days @ $150	$ 9,000
2 assistants - 30 days @ $125	7,500
1 hoistman - 30 days @ $80	2,400
Per diem - 150 days @ $20	3,000
Hoist rental & setup	3,000
Mileage on vehicle - 4000 mi. @ 20¢	800
Analytical costs - 1000 samples	
Shipment to Union - SLC	100
Analysis: Au, Ag + Cu, Pb, Zn & As on every other sample - average $13.50/sample	13,500
Interpretation & evaluation	
1 geologist - 10 days @ $150	1,500
drafting - 60 hrs. @ $10	600
Metallurgical Testing	
Collection & shipment of samples	1,000
Testing	5,000
Feasibility report & Engineering	
1 geologist - 15 days @ $150	2,250
1 mining engineer - 15 days @ $187.50	2,810
1 Metallurgist-Chemist - 15 days @ $187.50	2,810
Contingency	5,600
Total	$60,870

Respectfully submitted,

Robin E. Hendrickson,
Vice President, Operations

West coast

Send to Petro-Minerals

SKYLINE LABS, INC.
SPECIALISTS IN EXPLORATION GEOCHEMISTRY
12090 WEST 50TH PLACE • WHEAT RIDGE, COLORADO 80033 • TEL.: (303) 424-7718

REPORT OF ANALYSIS

Job No. 11182
Reference No. 1066
January 14, 1975

Specomp Services, Inc.
P.O. Box 160
Steamboat Springs, Colorado 80477

Attention: William A. Bowes

Analysis of 5 Pulp Samples

Item	Sample No.	Au (ppm)	Ag (ppm)	Cu (%)	Pb (%)	Zn (%)	As (%)
1.	113-2	4.6	420	.085	.64	.17	.925
2.	114-1	2.0	390	.095	.375	.24	1.5
3.	114-2	2.9	500	.125	1.1	1.1	1.8
4.	114-3	5.4	1,100	.33	1.8	.92	.85
5.	114-4	.47	35	.007	.020	.135	1.2

Charles E. Thompson
Chief Chemist

WEST COAST

[illegible] 3,50

Au = 150 00 oz

Ag = 4 00 oz

HUMBOLDT LABORATORIES

Assay Report

35,00 Avg Au-Ag

7.00 in Lead & Zn.

Winnemucca Milling Co.
Wnna - Clem

Samples for Gold, Silver, Lead, Zinc

Sample No.	Description	Value		
		Oz./ Ton		
		Au	Ag	
No. 1	Clem # 1	0.11	12.7	$62.
2	# 2	0.18	14.2	[illegible]
3	# 3	0.05	3.0	19.
4	# 4	0.05	14.0	63.
5	# 5	0.15	2.9	34.
6	# 6	0.07	3.3	23.
7	# 7	0.07	3.7	24.
8	# 8	0.01	0.6	3.
9	# 9	0.09	10.5	54.
10	# 10	0.02	2.1	11.
11	# 11	0.06	3.3	22.
12	# 12	0.02	1.9	11.
13	# 13	0.02	1.4	9.
14	# 14	0.02	0.9	6.
15	# 15	0.09	4.5	32.
16	# 16	0.23	18.6	109.
16	# 16	Pb - 2.83 %		
		Zn - 2.09 %		
		0.0775	6.10	
		@160 00 36.80	@4 00	

Date Sept. 7 , 1974

Assayer [signature]

TABLE 9. Mines and prospects of the Blue Mountain-Krum Hills-Winnemucca Mountain area (includes Winnemucca, Barrett Springs, and Ten Mile districts).

Name	Location	Owner	Commodity	Geology and workings	Production and remarks
9.[1] Shively strike.	Northwest part sec. 6, T. 36 N., R. 38 E.	Unknown.	Gold, silver(?).	Calcareous shale and limestone cut by quartz and calcite veins largely covered by soil.	Production unknown; but tailings suggest appreciable production.
10. Winnemucca Mountain mine (Gold Hill group).	Northeast part sec. 13, T. 36 N., R. 37 E.	Gus Rogers & associates, Winnemucca, Nevada.	Fluxing ore with small amount of gold and silver.	Limy shale and sandstone cut by a northwest-trending shear zone containing small amounts of gold and silver in a gangue of iron oxides and some quartz.	Couch and Carpenter (1943, p. 70) report a production of 2,227 tons yielding $27,282.
11. Pride of the Mountain mine (Pride of the West mine).	Northwest part of sec. 23, T. 36 N., R. 37 E., on the south slope of Winnemucca Mountain.	Unknown.	Gold, silver.	Quartz veins, reportedly containing some lead and copper in addition to gold and silver. Veins cut hornfels or slate.	Lindgren (1915, p. 16) reports a possible production of $1,000,000, but this is not supported by other data.
12. Adamson mine (A. & T. mine, Golden West group, Wannamuck mine).	Northeast part of sec. 11, T. 36 N., R. 37 E., on west slope of Winnemucca Mountain.		Gold.	Country rock is calcareous slate and phyllitic shale. Gold occurs in drusy quartz cementing brecciated shale. Cinnabar occurs in brecciated zones cemented with banded calcite.	Lindgren (1915, p. 15) reports a production of $8,000 from rich ore in 1911. Couch and Carpenter (1943, p. 70) report a production of 31 tons of material yielding $5,711 for the period 1911–1912. The old dumps have been shipped since that time, but there is no record of their returns.
13. Pansy Lee mine (West Coast mine).	Near extreme eastern edge of the center sec. 1, T. 36 N., R. 36 E.	West Coast Mines, Inc., Calif. State Life Bldg., Sacramento, California.	Silver, gold, lead, copper.	Siltstone and shale cut by northeast-trending shear zones that contain thin discontinuous quartz veins. Assays of 2 to 12–inch width vary considerably but typical range is from .20 to .60 oz gold and from 8 to 40 oz silver. Veins locally contain also copper and lead.	Couch and Carpenter (1943, p. 70) report a production of 1,677 tons yielding $54,248 from 1939 to 1940. In 1941, 407 tons of ore shipped to a smelter yielded 157 oz gold, 13,217 oz silver, 2,929 lb copper, and 30,894 lb lead; 39,598 tons of ore milled on the property yielded 5,314 oz gold, 453,508 oz silver, 71,130 lb copper, and 1,018,842 lb lead (U. S. Bureau of Mines Minerals Yearbook, 1941). Most of the $142,628 produced in the district in 1942 (U. S. Bureau of Mines Minerals Yearbook, 1942) probably came from this mine. The property was operated intermittently after the war but there is no record of this production.
14. Nevada Consolidated mine.	Southeast corner sec. 1, T. 36 N., R. 36 E.	William F. Stephens, Esparto, California.	Silver, gold.	Geology very similar to nearby Pansy Lee mine, but quartz veins are in general narrower and of somewhat lower grade.	Production small and included with the Pansy Lee mine.
Unknown.	Near center of sec. 12, T. 36 N., R. 36 E.	Unknown.	Gold, silver(?).	Siltsone, shale, and quartzite cut by shear zones that are occupied in places by narrow quartz veins.	Production unknown.
15. Barrett Springs mine.	Northwest part of sec. 14, T. 36 N., R. 36 E.	Unknown.	Gold, silver.	Northeast-trending shear zones cut shale, siltstone, and granodiorite. Contact between granodiorite and sedimentary rocks is not exposed. Quartz forms stockwork in wide shear zones and narrow discontinuous veins that are parallel to some of the narrower shear zones. Gold and silver values are generally low and restricted to very narrow widths. One 8-inch quartz vein assayed about $30.00 in combined gold, silver, and lead.	No recorded production, but there has been some stoping in north shaft.
16. Ten Mile mine.	Southwest corner sec. 23, T. 36 N., R. 36 E.	Unknown.			
Unknown.	Southeast corner sec. 22, T. 36 N., R. 36 E.	Unknown.			
Unknown.	Near west center sec. 4, T. 36 N., R. 36 E.	Unknown.		Light-gray phyllitic shale cut by thin quartz veins. Chalcopyrite, galena, and pyrite observed in quartz on dump.	No recorded production.
17. Atlas mine.	Southeast slope of Blue Mountain. Northeast cor. sec. 28, T. 36 N., R. 35 E.			Green shaly sandstone and light-green to light-gray phyllitic shale cut by thin quartz veins.	

[1]Numbers correspond to those shown on plate 3.