3800 0037

Blue Sphinx, inc.

Homer D. Duggins
4313 Fremont Ave. N.
Seattle, WA 98103

PRESENTATION

1966-1977

This brochure consists of a complete review of work completed on the Blue Sphinx claims in the Bovard Mining District Central Nevada.

Over $75,000. has been spent in geophysical-geochemical surveying - mapping - drilling - engineering - assaying - bulk sampling - assessment - and legal work which is currently up to date. Most of this work was on only two claims. Indications are, however, that many additional tons of equal or better values remain to be explored on the balance of the claims, leaving this property still to be considered in the prospect stages.

Having recently surveyed several of the successful leaching operations in this area, we are fully convinced that with a complete feasibility study the Blue Sphinx properties would prove to have tremendous potential.

PRELIMINARY EVALUATION

BOVARD DISTRICT

Mineral County, Nevada

Prepared for:
Griffith Annesley
Don R. Link
840 Petroleum Club Building
Denver, Colorado

CHARLES E. MELBYE AND ASSOCIATES

MINING · GEOLOGICAL · GEOPHYSICAL · ENGINEERS
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GOLDEN, COLORADO

February 9, 1966

PRELIMINARY EVALUATION

BOVARD DISTRICT

Mineral County, Nevada

INTRODUCTION

This report is a preliminary evaluation of the Blue Sphinx, Gold Pen, Lone Star, and Nevada Rand properties in the Bovard or Rand district. Although the initial interest was in the Blue Sphinx mine, it became obvious that the other properties should also be considered in attempting to locate one or more economic large tonnage open-pit gold-silver deposits.

LOCATION AND ACCESSIBILITY

Location is in Sections 29, 32, 33, and 34, T11N, R32E near the crest of the low Gabbs Valley Range at elevations of 5500 - 6000 feet. Hawthorne, Nevada, the closest town, lies south west on U.S. Highway 95. Accessibility to the district is over 30-33 miles of mostly good gravel road and the last 2-3 miles over unimproved dirt mine roads. The important old silver camp of Rawhide lies 15 miles north.

HISTORY

The district was discovered in 1908 and since has produced about $360,000 in gold, silver, and copper, mostly from 1914-1920. Activity since that time has consisted only of small leaser operations, and no intelligent extensive exploration programs have ever taken place in the district. Each of the four properties is developed by 250 to 550-foot shafts.

GEOLOGY

Rock Types

All of the exposed rocks appear to be post-Esmeralda or Late Tertiary volcanics, consisting of the earlier acidic group-rhyolite and quartz latite welded tuff, and the later

intermediate group-rhyolacite an. andesite flows, tuffs, and breccias. Considerable marked variations in these lithologies can be seen, which will require detailed mapping to work out the proper geology. Color generally distinguishes the two, as the acidic group is tan to light brown in color and the intermediate group usually shades of gray.

Structure

Without detailed mapping completed at this time, the only known structure of importance is the northwest Bovard fault zone which is expressed by a zone many hundreds of feet wide with faulting, brecciation, and accompanying alteration and bleaching of the rocks. This fault is part of a regional fault extending for 45 miles along the west side of the Gabbs Valley Range. Along or near this zone are located all the mines of the district. Strike varies from N40W - N70W. The mines are approximately located on the accompanying sketch map, and the location with respect to the Bovard fault zone is only generalized.

Mineralization

At the Blue Sphinx and Gold Pen mines the mineralization occurs mostly as free gold with quartz veins and rounded masses and with iron and manganese oxides throughout a 200-foot wide zone. The rounded nature of the quartz suggests being dragged along in the fault zone. Intense shearing is accompanied by intense alteration and bleaching. A higher-grade zone without well defined limits was mined 3-8 feet wide. Unusually rich pockets of gold-silver ore were shipped from the Nevada Rand mine.

The mineralized shear zone at the Blue Sphinx and Gold Pen mines is about 200 feet wide and at least 1500 feet long. A few prospects, adits, and shafts along the zone show the quartz veining and masses which are apparently necessary for any substantial ore-grade. Oxidation extends to the 250 level so that if residual gold enrichment is present, it should be present at least to that depth.

Four samples taken at the Blue Sphinx mine are certainly not conclusive but give some ideas of grade and gold-silver occurence.

No.	Description	Oz Au	Oz Ag	$ Value	Ppm As
T276	19' Altered HW-No quartz	.005	0.44	$ .7[illegible]	450
T277	4' Altered FW-No quartz	Tr	0.12	.15	60
T278	6.5' Vein - 90 level	0.26	0.50	9.75	100
T279	20' Vein zone w/quartz at shaft	0.16	0.74	6.55	200

The samples indicate that wherever quartz is present the values increase to a grade which is quite interesting from an open-pit mining standpoint. Arsenic was run by fluo-X ray-spectrograph to see whether it might be a geochemical pathfinder to the best gold-silver mineralization, which is the case in many districts. Extensive soil cover in many areas makes surface sampling of little practicality. These arsenic values are quite high compared to the normal background of 2 ppm in igneous rocks, thereby indicating the favorable use of soil sampling as a prospecting tool.

CONCLUSIONS

1. The four mines of the Bovard district comprise an area two miles long which is associated with a major regional fault zone and which has gold-silver mineralization occuring throughout the two mile extent.
2. Although pockets of very rich gold-silver ore have been mined by leasers, there is lower-grade mineralization throughout the zone for widths of up to 200 feet. The grade of this mineralization is of course unknown, but the potential exists for finding one or more deposits totaling in the millions of tons. If the gold is all free, as is reported, the area is unusually attractive, since only $3 - 4 ore would be required for an economic large-tonnage operation. If the ore requires cyanide treatment, about $7 millheads would be required.
3. Shallow inexpensive rotary or down-the-hole percussion drilling can be employed in exploration. The very accessible location is conducive to carrying out exploration and mining on a relatively low-cost basis and without too much weather hindrance.

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RECOMMENDATIONS

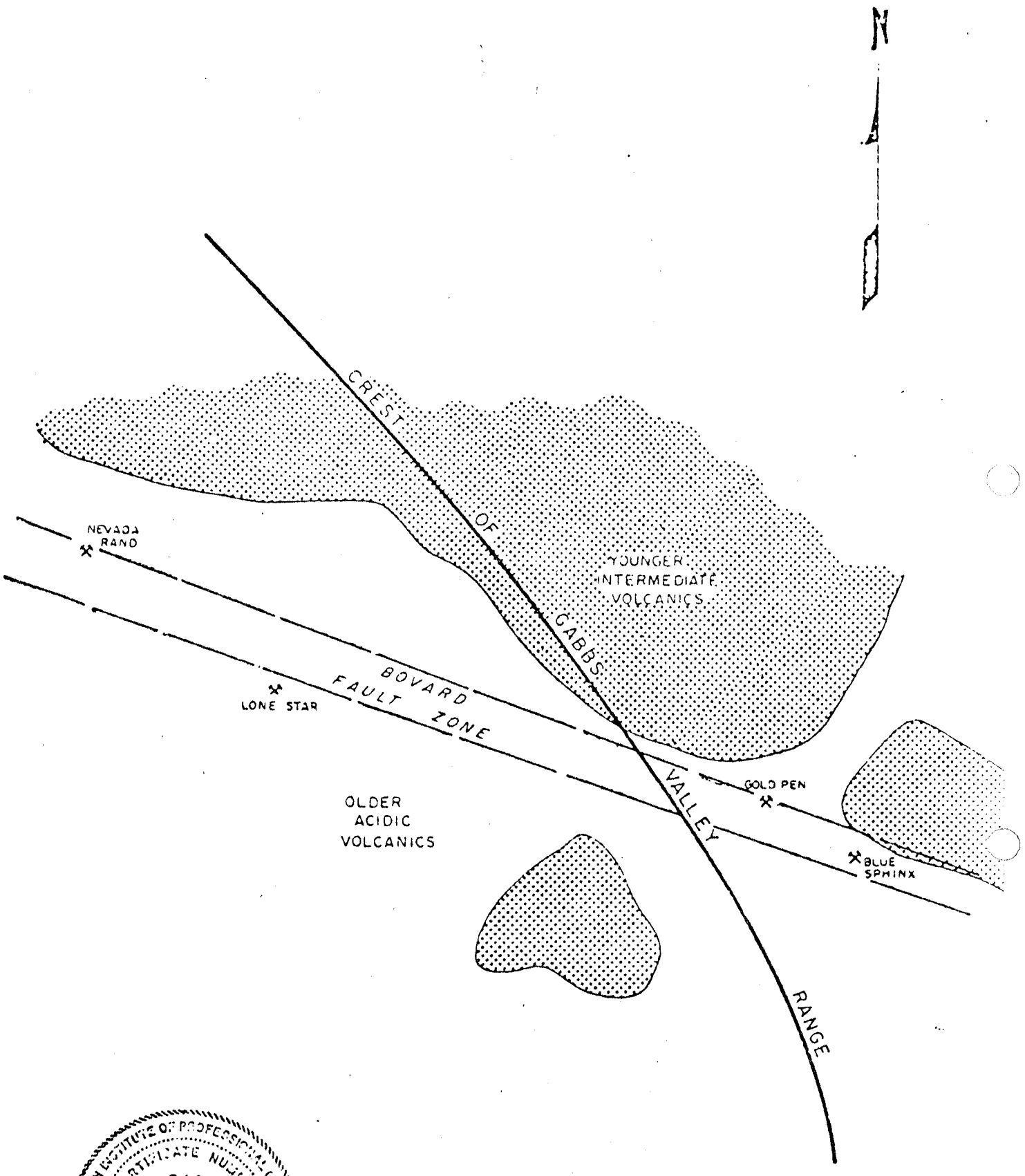
1. Initial work should consist of geological mapping and geochemical soil sampling for arsenic on at least the Blue Sphinx and Gold Pen ground. A grid should be laid out for proper location of this work. Some additional mine sampling is also recommended.
2. Further study of the Lone Star and Nevada Rand mines should be done at the same time and possible detailed work completed there as well.
3. This work should determine whether the areas of disseminated gold-silver mineralization are sizeable enough to be considered from a large tonnage open-pit standpoint. If favorable, further work should then consist of bulldozer trenching and drilling. If the areas do not appear sufficiently large, no further work would be recommended.

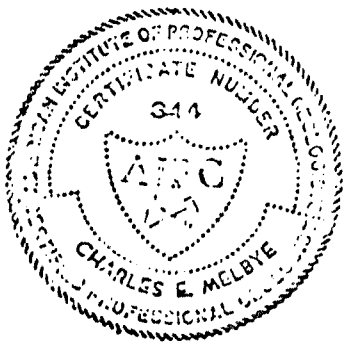
Respectfully submitted,

Charles E. Melbye

Charles E. Melbye
Cert. Prof. Geol. #344

February 9, 1966





PREPARED FOR GRIFFITH ANNESLEY

SKETCH MAP

MINES AND GEOLOGY

BOVARD DISTRICT

T11N, R32E

Mineral County, Nevada

Scale 1"=2000' February, 966

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[E C O N O M I C G E O L O G Y]

ECONOMIC GEOLOGY
BOVARD DISTRICT

Mineral County, Nevada

INTRODUCTION

An extensive geological-geochemical evaluation of the Bovard District has been completed during the period of March - June, 1966. This has included all of the important mines, the Blue Sphinx, Gold Pen, Pine and Nevada Rand properties. Initial geochemical surveys and reconnaissance mapping was followed by semi-detailed geological mapping, underground and surface sampling, and additional geochemical surveys. The initial interest in the district by Messrs. Don R. Link and Griffith Annesley was from the standpoint of possible large tonnage low-grade gold-silver deposits mineable by open-pit methods. Therefore, all investigations have been for the purpose of delineating a possible area or areas within the district which have distinct potential for this type of deposit, rather than for small narrow vein deposits. The evaluation has been carried out by Charles E. Melbye and H. W. Ranspot of Melbye and Associates.

LOCATION AND ACCESSIBILITY

The district is located 30 miles northeast of Hawthorne, Nevada in T. 11N., R. 32 E., and is readily accessible over good gravel or dirt roads. Only the last mile up the steep grades to the mines is difficult for a passenger car. This desert mountain area is part of the Gabbs Valley Range, which gets only light winter snows in the higher portions and very little in the valleys. The Southern Pacific Railroad services Hawthorne.

PROPERTY

All four mining properties comprising the major part of the district are leased by Messrs. Link and Annesley. These are listed as follows:

Property	Number of Claim
Blue Sphinx	9 unpatented claims
Gold Pen	18
Pine Did not proceed To lease	3
Nevada Rand leased but dropped due to Mineral withdrawal zone	5
	35

HISTORY

The district was discovered in 1908 by Al Bovard and other prospectors from the nearby Rawhide district. About $360,000.00 in gold, silver, and copper was produced, mostly from 1914 - 1920. The Gold Pen mine has been the main producer, as it had a mill. However, most of the mining has been of the small lessor type. No substantial company - type exploration has ever been attempted in the area considered.

GEOLOGY

All important features of the economic geology are shown on the 200 scale geologic map, which covers a 1200-foot wide strip from the Blue Sphinx mine to 3700 feet northwest of the Pine shaft. In addition, the Nevada Rand mine area, another mile northwest, was mapped.

Rock Types

Two widespread Pliocene volcanic units comprise the bulk of the rocks. These are the Post-Esmeralda intermediate rocks, consisting of andesite and the felsic rocks, consisting of rhyolite. The andesites are generally later in age, but since they are in fault contact through the district the age relationship is not clear-cut. Where unaltered, color readily distinguishes the two; as the rhyolite is tan and the andesite blue-gray. Alteration has, however, made the two units nearly the same color. In addition, a basic volcanic unit, from andesite to basalt in composition, is present as a few remnants at the north end of the mapped area.

Structure

The dominant feature of the southern portion of the district (exclusive of the Nevada Rand) is a northwest, steeply east-dipping fault. This fault places rhyolitic flows on the southwest in fault contact with the later andesitic flows on the northeast and is therefore a normal fault. It is most likely part of a major northwest regional fault zone traversing the Gabbs Valley Range for 50 miles. Other minor faulting and fracturing is present and would require detailed mapping, but it is generally most intense in the highly altered zones and has undoubtedly accounted for concentration of the mineralized quartz stringers or veinlets.

Mineralization and Alteration

On the southwest side of the fault in the area of the Blue Sphinx and Gold Pen mines, the rhyolite has been considerably altered to a white, bleached rock. With the exception of the Nevada Rand and some small production at the Pine property, the production has come from this white, bleached zone of rhyolite, namely the Blue Sphinx and Gold Pen mines. The original character of the rhyolite has been almost completely destroyed,

with the exception of the quartz phenocrysts. In places, the bleached zone has been pervasively "flooded" with silica, and many small quartz stringers (1/2" - 2" wide) are found within this zone, particularly near the footwall side of it. Any chance for large scale production of gold and silver in the southern part of the district is restricted to this altered zone of rhyolite. The zone thins considerably 1000 feet south of the Blue Sphinx mine and pinches out entirely northward near the Pine property.

At the extreme northern end of the mapped area, and on the andesite side of the fault, an intensely altered zone is observed. This zone, 1200' N-S by 500' E-W is highly altered without much apparent mineralization. Silicification of the bleached area is almost lacking.

Blue Sphinx Area:

This area, at the southern end of the Bovard district, has had some production from a manganese-quartz fissure vein along the large northwest-trending fault. This fissure has been explored by small cuts and shafts for 1500' south of the Blue Sphinx shaft. The fissure averages two to six feet in width and is characterized by the quartz and manganese mineralization within it. Mineralization extends outward from the fissure in the form of a wide zone of quartz veinlets. The bleached mineralized rhyolitic zone achieves its maximum width of 350' in the Blue Sphinx area.

Only limited places are available to get long crosscut samples of the wallrock, but those taken give very encouraging results.

	Width	Oz. Au	Oz. Ag
Blue Sphinx shaft-surface	20'	.16	.74
150' level "HW"	20'	.26	.48
150' level "FW"	20'	.17	.19
Windlass shaft	30'	1 .76	.90

Samples taken north of the gulch north of the Blue Sphinx shaft are low, indicating a decrease in mineralization between the Blue Sphinx and Gold Pen mines. The potential favorable area for an open-pit deposit is thus indicated to be at least 1000 feet long by 100' - 350' wide.

Gold Pen Area:

This mine has been the most productive in the southern part of the Bovard district. Unlike the Blue Sphinx, production has come from a north to northwest trending fissure vein near the center of the bleached rhyolite zone. The bleached zone in this area averages 200' wide, the fissure vein approximately 5' wide. Sampling of the structure in 1931 indicated the remaining vein would average about $5.50/ton ($35.00 Au) over a 5' width

although much higher - grade ore shoots were mined. Mineralization did spread outward from the walls of the fissure, but sampling indicates the mineralization was rather weak, averaging about $2.50/ton. Previous sampling in the Gold Pen would seem to discourage the development of an open-pit gold mine in this area. Of some possible further interest is a zone of intensely bleached and altered andesite on a ridge just southeast of the Gold Pen, as an examination of the rock indicates massive "flooding" of silica into the andesite.

Pine Property:

This is the least promising of any of the four mines examined. The only mineralization observed was a 2-foot west-trending fissure vein completely within the andesite. Alteration around the vein is lacking and there is little chance for sizeable production in the mine area itself. The ore controlling fault passes 500' west of the Pine shaft, and there is some mineralization within the fault in this area.

Nevada-Rand Mine:

The geology of the Rand mine is relatively simple. The host rock for the fissure vein is andesite, and no other rock types were noted in the area. The mineralization consists of a simple quartz fissure vein striking west through the andesite. Some 200 feet east of the Rand shaft, the fissure bends to a northwest strike. This northwest strike is apparently associated with the better mineralization inasmuch as most of the stoping along the vein has been in the northwest trending area.

Underground it appears as though the vein has split. There is a possibility that the ground between the splits may be mineralized enough to warrant open-pit development. However, seven underground samples of this zone were all low, thus not supporting any larger-tonnage possibilities for the Nevada Rand mine.

GEOCHEMICAL SURVEY INTERPRETATION

Soil sampling for arsenic (As) content and silver (Ag) content was first done, to see whether these elements might be pathfinders to the best low-grade mineralization which is primarily gold. Silver did not provide any help, but arsenic appeared to be very indicative, and much of the district was sampled for arsenic. High arsenic values were not expected as no arsenopyrite has ever been found with the ore. The trace amounts of arsenic, commonly associated with gold, however, are apparently sufficient to cause a soil anomaly of over 100 ppm As. Background is about 5-10 ppm compared to an average for all soils of 5 ppm. Most of the samples were analyzed with the Fluo-X spectrograph.

The largest anomaly is that encompassing the Blue Sphinx-Windlass shaft area. Values range up to 400 ppm, but the main part of the anomaly is 100-200 ppm. This correlates remarkably with the sampling, since it indicated that the only area with appreciable wallrock mineralization is the Blue Sphinx property.

Small scattered anomalies were found in the Gold Pen area, and the Pine property was not anomalous at all. Another area of possible significance is the altered zone 1/2 mile northwest of the Pine shaft. Arsenic values ranged up to 98 ppm. One long traverse run eastward down the Gold Pen road did not show any appreciable anomalies, although there is a considerable amount of hydrothermal alteration.

CONCLUSIONS

1. A rather thorough preliminary evaluation of the entire Bovard district has delineated one major target where distinct possibilities exist for an open-pit gold-silver type of deposit and operation, the Blue Sphinx mine area. Arsenic geochemical values are high, channel sampling on surface and underground shows values over 30-40 foot widths of $8.14-$62.76/ton with appreciable mineralization over at least 100 feet, and the highly altered zone in rhyolite 1000 feet long by 100-350 feet wide provides an ample sized target for proving a large tonnage.

2. This Blue Sphinx area has a potential for at least 1.5 million tons to a depth of 150 feet.

3. Although the surface geology does not appear quite as favorable as the Blue Sphinx, there are still additional tonnage possibilities in the silicous altered area southeast of the Gold Pen mine and in the altered zone 1/2 mile northwest of the Pine shaft, where arsenic values are high.

4. The Bovard ores have always been known as a free-milling gold type. It appears, therefore, that the bulk of the values can be recovered by gravity processes with possibly a smaller cyanide mill circuit for some of the finer values. This could enable very low mill costs for an operation. The highly altered and brecciated rhyolite can be cheaply mined by open-pit methods.

RECOMMENDATIONS

1. At least five inclined core holes should be drilled at 200-foot spacings from the Blue Sphinx shaft southward past the Windlass shaft. If these are favorable, five additional holes between the previous ones should be drilled. The depth of each will be about 300 feet.

2. If the drilling of the anomalous area on the Blue Sphinx property penetrates substantial tonnages of ore, additional drilling would be recommended in the two other prospective areas, one of which is situated near the Gold Pen mine and the other 1/2 mile northwest of the Pine shaft.

Respectfully submitted,

Charles E. Melbye
Cert. Prof. Geol. #344

H. W. Ranspot
Consulting Geologist

AN EXPLORATION GEOLOGICAL APPRAISAL OF THE BLUE SPHINX AREA, BOVARD DISTRICT, NEVADA

INTRODUCTION

Production

The Bovard District was active between 1908 and the early 1920's and is reported to have produced about $400,000 in Au-Ag-Cu (Lincoln, 1923). Owing to ore richness which facilitated "highgrading," this figure is probably conservative. Early recorded shipments averaged $143 per ton (Heikes, 1911).

Claims

Blue Sphinx claims cover a 4500 foot segment of the Bovard ore-bearing structure at the southeast extremity of the several mile long district. They are located immediately southeast of the Gold Pen Mine (just over 2000 feet on strike) which produced half the recorded value of the Bovard District.

GEOLOGY

Ore control

The Bovard ore-bearing structure is a sinuous NW-SE trending fault zone, dipping steeply northeastward. In the Blue Sphinx and Gold Pen area this structure made ore locally in the form of Au-Ag-rich brecciated and sheared quartz fillings in altered rhyolite.

Mineralization

Principle ore minerals were native Au, Au-Ag alloy, argentite, and cerargyrite. Traces of Cu carbonates and sulfates and turquois have been found in surface workings. Chalcopyrite and chalcocite are on record in the northern part of the district (Copper Mountain Mine) where a Triassic limestone-monzonite contact was encountered underground (Lincoln).

In the Gold Pen Mine, nearly pure alunite sheets enveloped the ore bodies (Schrader, 1913, 1914). Only higher grade portions of the Sphinx and Pen veins were mined. Various assays indicate a certain low grade Au-Ag content peripheral to the high grade shoots (Enclosure A) both along the vein and for some distance laterally out from it in the hanging wall and foot wall, which has suggested open pit mining possibilities, but this has not yet been adequately appraised.

Fault zone

The Bovard fault zone has brought together coarse-grained Tertiary rhyolite of consistent composition on its west side, with younger andesite of variable composition on its east. In the Gold Pen - Sphinx area, there is a zone of distinctive silicic and kaolinitic alteration attendant with the fault, beginning at the northwest end of the Gold Pen workings and persisting southeastward to the southeast end of the Sphinx Claims, a strike length of at least 6600 feet. The zone is 225' wide at the Gold Pen, 350' wide at Sphinx Shaft, and pinches to about 100' width between them. It is confined entirely to the rhyolite side of the fault zone.

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Southeastward from Sphinx Shaft, the alteration band gradually narrows again to about 100' width at the saddle, 1200' southeast of the shaft. From the saddle on

southeastward, the altered rhyolite zone persists strongly and, perhaps significantly, is accompanied by rapidly expanding intense alteration in the andesite. At approximately 2000 feet southeast of the saddle (3200 feet southeast of Sphinx Shaft) the width of continuous alteration is about 1200 feet. The fate of this mineralization further southeastward, beyond the Sphinx endlines is concealed by colluvium. A number of small prospect pits, adits and shafts are scattered along the exposed length of this zone, but these still plainly favor the altered rhyolite, i.e. the recognized Bovard ore habitat. There appear to have been no important excavations in the altered andesite. (Map, Enclosure B).

ault
ovement

One movement vector along Bovard fault has apparently been east-side-down. This is necessary to juxtapose younger andesite on that side against older rhyolite on the west.

There is also reason to suspect right lateral offset. This is strongly hinted at by the configuration of alteration along the Bovard fault in the Gold Pen - Sphinx area. The northwestward pinchout of the 6600' + long alteration zone takes place just 400 feet northwest of the Gold Pen and coincides with the sudden westward (leftward) flexure of the fault zone. Under a prevailing right-hand force couple, structures oriented leftward of parallel are subject to relative compressional forces, hence impede solution passage. Conversely, the best mineralization in the Nevada Rand Mine at the northwest end of Bovard District coincides with a sudden rightward (northerly) change in vein trend. (Melbye, 1960).

More fundamentally, there is evidence of a broad right-hand force couple pervading the whole Mineral County region. The frontal fault bounding the east side of Soda Springs Valley, 20 miles southeast of Bovard District, has been postulated to have a dextral offset of 4 miles (Ferguson & Muller, 1949). A strong topographic lineament suggests the Bovard fault may be an extension of this.

EXPLORATION IMPLICATIONS FROM THE GEOLOGY

Ore mineralization in the Blue Sphinx - Gold Pen area is confined to the west (foot wall) side of the Bovard fault. If mineralization along this fault zone has preferentially selected rhyolite, as it seems, then it is logical to suppose there exists a repetition of the ore environments on the east side of the fault, in rhyolite at depth beneath the andesite. And regardless of rock type, certainly a repetition of the temperature/pressure conditions prevailing during deposition of the Sphinx and Gold Pen ore bodies is to be found so displaced. (Hypothetical section, Encl C).

It would also follow that such hypothetical loci may be offset southeastward from their respective known equivalents on the opposite side of the fault.

A promising candidate for such mineralization is in evidence on the Sphinx claim block. The intensely and widely altered andesite at the southeast end of the Sphinx claims (2500 to 3500 feet southeast of Blue Sphinx Shaft) is of interest

BLUE SPHINX

on two counts:

1. except for an isolated altered patch 3000 feet northwest of Gold Pen, it represents the only significantly altered andesite area in Bovard District.

2. the zone is southeastward of the Blue Sphinx and Gold Pen mines and might therefore constitute the surface manifestation of an offset parallel of either of those deposits.

Discussion

The volume of mineralization represented by the south Sphinx altered andesite area dwarfs the alteration surrounding the Blue Sphinx and Gold Pen lodes. Besides that favorable note, the target is the more attractive for reason of the greater breakage, antithetic fracturing, etc, which can be expected of the hanging wall environment of a near-surface normal fault.

It seems axiomatic that until the rhyolite underlying this hydrothermalized andesite area is investigated, the potentials of the Bovard District must be considered unsurveyed. As of this date, the most favored ore host in the southeastern half of Bovard District has not yet been seen on the most favorable side of the fault.

From the way the Bovard mineralized zone is situated on the sidehill of the Pen - Sphinx area, it is not possible to appraise the original vertical extent of the ore mineralization. There is a certain probability that mineralizations mined at the surface were only the root ends of more extensive ore bodies now lost to erosion. Moreover there is near certainty that the temperature and pressure conditions which prevailed during emplacement of the orebodies now exposed are still to be found, at depth, on the hanging wall side of the fault. And since ore mineralization has not been seen at the surface on the hanging wall side, it is likely that the full vertical extent of whatever ore was developed on that side is still entirely confined under foot.

Speculated depth

The depth to this hypothetical environment can only be conjectured at the moment. Detailed field investigation is required before drilling feasibility can be spelled out.

Off hand, it is apparent that a certain unknown depth of andesite must be penetrated before reaching the top of the rhyolite. Ross(1961) estimates the total andesite section in the main part of the Gabbs Valley Range to be possibly over 1000 feet thick. His geologic map shows the andesite of the Sphinx area to be a relatively small island surrounded by rhyolite and showing a relief of just over 500 feet, most of which is uphill of the alteration zone by at least 300 feet. The big factor here will be dip.

Once into the top of rhyolite, again depending on dip, the depth to the exposed Sphinx ore horizon is likely to be about 1000 feet (the approximate thickness of

rhyolite section lying uphill of the Sphinx Shaft. The big imponderable here is how high up in the rhyolite section the ore environment persists. That is the part which is no longer in evidence in the Sphinx - Gold Pen locale. It may have been considerable.

A FURTHER CONSIDERATION

A possible bonus of the above theory is the following: if the exposed ores of the Sphinx - Pen were indeed the lowermost residuals of now-eroded gold orebodies, then it would seem that buried placer gold deposits are to be looked for in the former alluvial outwashes of this ore zone.

SUMMARY AND CONCLUSIONS

The ore horizon of the Bovard District has been exposed through the erosion of the uplifted side of a block fault. An unknown portion of the original ore deposits on this side have been lost to erosion.

It remains to explore for the other half of the district which should lie, still buried, in the down-thrown side of the fault.

An effort should be made to resolve the post-ore movement of the Bovard fault so that a modus of exploration can be designed.

David K. Jordt

David K. Jordt
Consulting Geologist

COOKE, EVERETT & ASSOCIATES, INC.
CONSULTING GEOLOGISTS

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P. O. BOX 2992
RENO, NEVADA 89505, U. S. A.

TELEPHONE (702) 323-8254

January 23, 1974

Mr. William B. Murray
1606 Standard Plaza
Portland, OR 97204

Dear Mr. Murray:

Re: Blue Sphinx ore reserve estimate, November 7, 1973.

After our recent phone talk, we checked our ore reserves estimate for the Blue Sphinx mine. We found various errors, mainly stemming from a couple of wrong calculations or copying in early stages of the estimate. The final results are appreciably different:

	Tonnage		Old estim.		Corrected	
	Old estimate	Corrected	Au oz	Ag	Au oz	Ag
Probable ore	115, 000	123, 000	.268	1.05	.161	1.03
Prospective ore	1, 000, 000	1, 000, 000	.262	1.05	.181	1.03
(rounded off from:	961, 000	958, 100)				

I am enclosing two copies of a revised - and, I hope, arithmetically correct - ore estimate. Please shred, burn, explode, or otherwise completely destroy the earlier estimate. I would favor sending a copy of the revised estimate to SEC with a request to discard the earlier one, and my apologies.

I realize that the estimate now has little or no significance, since (a) SEC rejected it, and (b) the drilling results will supersede it. None the less, I would like to get the erroneous estimate out of circulation, and for the record replace it with the present one.

I regret submitting the erroneous estimate. Due to haste, it was not properly checked before sending. We will try to avoid any more such errors.

Sincerely,

H. R. Cooke, Jr.

Encl.

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CERTIFICATE

I, Dr. H. R. Cooke, Jr., do hereby certify that,

1. I am a consulting mining geologist with office at 421 Court St., Reno, Nevada, doing business as Cooke, Everett & Associates, Inc., of which company I am president.

2. I am a graduate of the Mackay School of Mines, University of Nevada, and received a Ph.D. in mining geology from Harvard University. I am a registered professional engineer in Geological Engineering, Nevada, No. 1420; a Certified Professional Geologist, No. 1633, American Institute of Professional Geologists; and am a member of the American Institute of Mining, Metallurgical and Petroleum Engineers, the Canadian Institute of Mining & Metallurgy, and other professional societies. I have been a practising mining geologist for twenty-eight years.

3. I have no interest, directly or indirectly, in the property covered by this report.

4. This report is based on personal examination of the Blue Sphinx property on various visits during 1972 and 1973, and upon various other information and reports as referred to herein.

H. R. Cooke, Jr., Ph.D., P.Eng., CPG

Dated at:

421 Court St.
Reno, Nevada
November 7, 1973

COOKE, EVERETT & ASSOCIATES, INC.

DIAMOND DRILL HOLE LOG Site Blue Sphinx mine Location Mineral Co., NV

Hole no. DDH-1 Alt. ____ Coord. N ____ E ____ Bearing S45°W Inclin. -45 Started Nov. 12, 197

Finished Dec. 8, 1973 Logged by HRCooke, DKJorat Anal. by NV Assay Of

Remarks; abbreviations & symbols: Wireline drilling, assays by 4-Assay Ton fire assay, NV Assay Of. Andt - andesite, rhy - rhyolite, alt - altered; Sid - silicified; z - zone; loc - local(ly); v - vein; q - qua

Run depth ft	Core recovery size	ft	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 5	NX	0	0	0	----				
5- 20		7	54		Andt & rhy, fresh to altered; old fill or slope rubble?				
20- 30		9.5	95	20	Andesite, altered: much soft, brown Fe-stained gouge, crush, breccia; local hard andt dikes & Sid z.s; loc much kaolinite, alunite?; loc black MnOx,	BDS-1	.005	.754	
30- 40		9.5	95	30	brown FeOx, ylw-green Fe sul-fate stain on partings(20-126 ft)	BSD-2	.009	.184	
40- 50		9.7	97	40		BSD-3	.008	.192	
50- 60		9.6	96	50	48-52' Andt dike? hard, little alt. 56' 6" Sid z; v.q.?	BSD-4	.004	.395	
60- 70		9.7	97	60	64-66' Gouge & crush	BSD-5	.006	.322	
70- 80		9.8	98	70		BSD-6	.005	.420	
80- 90		9.5	95	80		BSD-7	.005	.630	
90-100		9.9	99	90	85' Hornblende dike, 6" 87-89' Gouge	BSD-8	.004	.535	
100-110		9.8	98	100	96-98' Andt dike, hard 100-104' Hard, silicified z. 104-107' Much MnOx	BSD-9	nil	.33	
110-120		9.7	97	110	114' Gypsum	BSD-10	tr	.22	
120-130		9.2	92	120	119-125' Blue-green gg, py, gypsum, rounded cr, pebbles	BSD-11	.002	.72	
130-140		9.3	93	130	125-126' Gg, red, sticky	BSD-12	nil	.28	
					Rhy, alt, lt-gray, quartz eyes to 1/4"(+), loc biotite, dsmd py (126-154').				
140-150		9.6	96	140	126-142' Gg & cr, grey 146-151' Sid, dsmd py	BSD-13	tr	.38	
150-160		9.4	94	150	151-154' Granulated, kaolinized, sheared, FeOx, MnOx	BSD-14	tr	.58	
160-170		9.7	97	160		BSD-15	nil	.87	
					Rhy, ±fresh, q eyes, loc biotite, aphanitic ground-mass, dark inclusions loc), py crystals dsmd to 1 mm dm, ±2% of rk volume; loc gg & cr zs; py or limonitized partings w/loc actinolite.(154-300').				
170-180		9.7	97	170					

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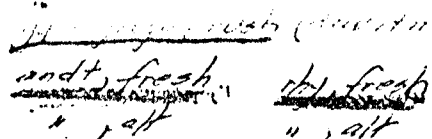
depth ft	size	feet	%	Ft Rock description	Smpl. no.	Analyses Au oz	Ag	Notes
170-180	NX	9.7	97		BSD-16	nil	.87	
				174-181' Gg & cr, grey				
180-190		9.6	96		BSD-17	nil	nil	
	NX							
	198			191-195' Gg & cr, green-stained partings - Fe sulfate?				
190-200	BX	9.3	93		BSD-18	tr	.20	
200-210		9.2	92		BSD-19	.003	.18	
210-220		9.2	92		BSD-20	nil	.31	
				214-216' Gg, brown Fe stain				
220-230		9.0	90		BSD-21	nil	.54	
230-250		15.0	75	228-229' Gg & cr, gypsum, FeOx	BSD-22	.003	.32	234.5-243' core recovery 4.5'
				230-246' Gg & cr, sticky & Fe-stained, in alt soft rhy..				
250-260		9.3	93		BSD-23	nil	.34	
260-270		9.8	98		BSD-24	tr	.62	
270-280		9.9	99		BSD-25	tr	.10	
280-290		10.0	100	285-286' Frs w/green (Fe sulfate ?) & FeOx	BSD-26	.004	.28	
290-300		9.8	98	296-298' Shear w/FeOx, 10° to core axis	BSD-27	tr	.27	
Bottom: 300'								



(++)	very much
(+)	much
(X)	some
(±)	little
(tr)	traces
(0)	none

gg	gouge
cr	crush
bx	breccia
py	pyrite
Au	gold
Ag	silver
dsmd	disseminated
rk	rock
w/	with
FeOx	iron oxide (limonite)
MnOx	manganese oxide

fracture

Smpl sample

mineralization (vein quartz, sulfides, limonite, etc.)

fault (gouge, breccia, crush, shattering, etc.)

DIAMOND DRILL HOLE LOG SH Blue Sphinx mine Location Boyer Dist., Mineral Co, Nev. SH 1 of 2

Hole no. DDH-2 Alt. ____ Coord. N ____ E ____ Bearing S35W Inclin. -45 Start Dec. 15, 19

Finish Dec. 31, 1973 Depth 291' Logged by JPRogowski, HRCooke Anal. by Nevada Assay Office

Remarks; abbreviations & symbols: Wireline drilling; assays by 4 assay ton charge. Ag - silver, alt - alteration, andt - andesite, Au - gold, bx - breccia, cr - crush, - dsmd - disseminated, FeOx - iron oxides, fr - fracture, frgt - fragment, gg - gouge, jar - jarosite, loc - local, MnOx - manganese oxides (over)

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 20	rock bit	0	0		Overburden				
20- 30	NX	9.5	95		20-82': Andesite, altered: - Bleached, soft, alt(X-+) to clays, sericite?, alunite?; many irregular fr & joints coated w/Fe)x & MnOx. A few hairline q vlts w/py casts. Py casts(±) in ground-mass.	BSD-31			
30- 40		8.5	85			BSD-32			
40- 50		9.0	90		23.5' Bx vlt 3/4".	BSD-33	40-50 ft	.164	Au .36 Ag
					26 Gg 5", FeOx-stained.				
50- 60		9.0	90		30-35 Bx & gg; at 32', 2" gray putty gg; bx frgts Sid; FeOx on fr & joints.	BSD-34	110-117	.105	3.31
60- 70		9.0	90		44.5-49 Bx & gg, jarosite & FeOx-stained.	BSD-35	225-235	.100	nil
					(50-57 Bxd, frgts to 6", several putty				
70- 80		9.5	95		(59-65 gouges. 68-82 Andt alt (tr-+). 74+ Iridiescent MnOx	BSD-36	255-265	.061	.11
80- 90		9.5	95			BSD-37			
90-100		9.0	90		82-153' Andesite, faulted, bxd, alt, veined: clay, sericite?, alunite?, loc chlorite & Si alt. Gg & cr(+), bx frgts to 2" dm stained by FeOx, MnOx, gypsum, jarosite; FeOx on partings. Loc dsmd py & dark sulfide -tennantite?	BSD-38			
100-110		9.5	95	100'		BSD-39			
110-117		6.7	95		Loc v q frgts w/py & gray sulfides. 86' Boxwork from sulfides.	BSD-40			
117-120		2.7	90		87-88 MnOx, nodular?; FeOx & jarosite.	BSD-41			
120-125		4.8	95		117-120 Dsmd py 5%+ of volume & gray sulfide (tennantite?) - high reflectivity, As smell on fresh breaks.	BSD-42			
125-128		2.9	95		106, 107 Gg, thin, white, punky 120-125 Py dsmd(±), v.q. frgts, stockworks in andt.	BSD-43			
128-134		5.4	90	150'	125-128 Gg, gray, putty-like, bx frgts to 3/4".	BSD-44			
134-140		5.4	90		134-145 Andt, gg & bx w/q frgts, py (X)	BSD-45			
140-145		4.8	95			BSD-46			
145-151		5.4	90		145-153 Andt & rhy frgts mixed; q frgts up to 50%; gg & bx, FeOx, jarosite, MnOx vlts; clay, ser-	BSD-47			
151-155		3.6	90			BSD-48			
155-164		8.6	95						

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DDH LOG Site Blue Sphinx mine Location Mineral Co., Nevada Hole no. DDH-2 Page 2 of 2

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl Analyses no.	Au oz	Ag	Notes
175-185	NX	9.5	95	100'	153-175 Rhyolite porphyry, altered: q phenocrysts (X-+); dsmd py; Sid (+), broken	BSD-51			
185-195		9.5	95		(+) w/a few thin gg; FeOx & jarosite (x).	BSD-52			
195-205		9.5	95	200'	153-164 Py dsmd 3%± by volume; FeOx on partings.	BSD-53			
205-215		9.0	90		164-175 Rhy, hard, solid; Chlorite (tr) on fr; FeOx less.	BSD-54			
215-225		9.5	95		175-291 Rhy porphyry: q phenocyrsts; chlorite-epidote on some partings; py dsmd (±); FeOx (±) on fr; loc gg & bx z.	BSD-55			
225-235		9.8	98			BSD-56			
235-245		9.7	97			BSD-57			
245-255		9.5	95	250'		BSD-58			
255-265		9.8	98			BSD-59			
265-275		9.5	95			BSD-60			
275-285		9.8	98			BSD-61			
285-291		5.7	95			BSD-62			
Bottom - 291 ft									
				300'					
				350'					

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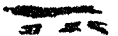
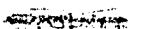
py	pyrite
q	quartz
rhy	rhyolite
rk	rock
Sid, Sin	silicified, -ion
smpl	sample
v	vein
vlt	veinlet
w/	with
z	zone

(++)	very much
(+)	much
(X)	some
(±)	little
(tr)	traces
(0)	none
	breccia
	vein quartz
	contact

	gouge, crush (fault
	mineralization (su Fe/x from sulfide
	andesite, fresh
	andesite, altered
	rhyolite, fresh
	rhyolite, altered

DIAMOND DRILL HOLE LOG Sil ...lue Sphinx mine Location Bovard at, Mineral Co., NV Page 1 of 2
Hole no. DDH-3 Alt. Coord. N E Bearing S40W Inclin. -45° Start Jan. 3, 1974
Finish Jan. 16, 1974 Depth 241' Logged by JPRogowski, HRCook Anal. by Nevada Assay Office
Remarks; abbreviations & symbols: Wireline drilling; assays by 4 A.T. charge; abbreviations, see below under Notes. Also: Rocky Mtn Geochemical Corp; AA.

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 13	rock bit	0	0		Overburden				
						BSD-70			
3- 20	NX	6.7	95		Andt, alt; 13-71': Femags soft, greenish/ due clay alt (kaolin, montmorillonite?) & ser; FeOx & MnOx stains; py casts(X).		.031	.27	
20- 30		9.5+	95+		14.5-16.2' Gg 3", then crush to 16.2'.	BSD-71	.005	.36	
30- 40		9.5+	95+		30' Gg 2"	BSD-72	.146 -.003	.13 -.03	
40- 50		9.5+	95+			BSD-73	.046	.24	
50- 60		9.0	90	50		BSD-74	tr	.31	
60- 70		9.0	90		66' Gg, putty, 1".	BSD-75	.105	nil	
70- 80		9.0	90		Andt, alt, fault z, 71-163': soft & punky; bx & gg(+); FeOx & MnOx stain(tr-+); loc Sid; py dsmd 72-104', 142-160'; gyp(tr-+ loc); vugs w/ q druses(X loc).	BSD-76	.003 -.003	.30 -.03	
80- 90		9.5+	95+			BSD-77	tr	.025	
90-100		9.5+	95+			BSD-78	.004	.30	
100-110		9.5+	95+	100	110-114' Sin(+); py dsmd(+).	BSD-79	.047	.13	
110-120		9.0	90			BSD-80	.034	.03	
120-130		9.0	90			BSD-81	nil	.25	
130-140		9.5	95			BSD-82	.049	.22	
140-150		9.5+	95+			BSD-83	.103	.03	
150-160		9.5+	95+	150	Rhy, alt, fault z, 163-195': bx, cr & gg(X-+); soft, crumbly, clay alt less downhole; montmorillonite? on partings(locX); py dsmd; rusty lim stain(X), black pitchy MnOx or lim on partings(locX).	BSD-84	.010	.08	
160-170		8.5	85			BSD-85	.034	.33	
170-180		9.5+	95+			BSD-86	nil	.42	

Abbreviations

Ag	silver
alt	alteration
andt	andesite
Au	gold
bx	breccia
cr	crush
dsmd	disseminated
Femag	iron-magnesi un -bearing miner
FeOx	iron oxid
fr	fracture (-ing)
frgt	fragment
gg	gouge
jar	jarosite
lim	limonite
loc	local
MnOx	manganese oxides
py	pyrite
q	quartz
rhy	rhyolite
rk	rock
ser	sericite
Sid, Sin	silicified on
smpl	sample
v	vein
vlt	veinlet
w/	with
z	zone
(++)	very much
(+)	much
(X)	some
(±)	little
(tr)	traces
(0)	none
ΔΔΔ	breccia
	vein quartz
- - -	contact
———	gouge, crush (faulting)
	mineralization (sulfides, lim)

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DDH LOG Site Blue Sphinx mine Location Mineral Co., NV Hole no. DDH-3 Page 2 of 2

Run depth ft	Core size	recovery feet	%	Ft	Rock description	Smpl no.	Analyses Au oz/t	Ag	Notes
180-190'	NX	9.5+	95+		186-190' Milled bx gravel & muddy gg(+).	BSD-87	.080	.11	Abbreviation & Symbols(c
190-200		9.5+	95+		188-190' FeOx & MnOx(++).	BSD-88	.050	.54	andesite, fresh
200-210		9.5+		200	Rhy, 195-241': hard, alt(±)-tr), decreasing downhole - mainly minor chlorite & ser; fr & dsmd py decreasing downhole (± - 0); loc thin gg.	BSD-89			andesite, altere
210-221		10-4	95		210-241' Py dsmd (tr-0).	BSD-90			rhyolite, fresh
221-231'		9.5+	95+			BSD-91	.045	nil	rhyolite, altere
231-241'		9.5+	95+			BSD-92			
Bottom									

250'

300'

350'

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DIAMOND DRILL HOLE LOG Site Blue Sphinx mine Location Bovard dist., Mineral Co., Nev Page 2 of 2
Hole no. DDH-4 Alt. Coord. N E Bearing S30°W clin. -57 Start Jan. 17,
Finish Jan. 28, 1974 Depth 345' Logged by JPRowoski, HRCooke Anal. by Nevada Assay Office
Remarks; abbreviations & symbols: See below under Notes. Wireline drilling, assays by 4 AT charge.

Run depth ft	Core size	recovery feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 14	rock bit	0	0		Overburden				
14- 20	NX	5.4	90		Andt, alt, 14-60': soft, shattered, fr(+), kaolin-montmorillonite (& ser?) alt; py casts & lim(tr-+); FeOx & MnOx stains(X); q vlts(±)filling fr; several strong shear z w/gg, bx, cr & Fe-MnOx.	BSD-101	nil	.29	
20- 30		9.0	90			BSD-102	nil	.15	
30- 40		9.5	95			BSD-103	nil	.37	
40- 50		9.5+	95+			BSD-104	nil	.19	
50- 60		9.5	95	50'		BSD-105	.007	.05	
60- 70		9.5	95		Andt, alt, 60-161': clay & ser alt (X); Sin(±-+) as replacement q, q druses in vugs & fr-filling vlts; rk alternating hard, Sid & soft, non-Sid; py dsmd, fine-grained(±-X)partly to rusty lim(X), jar(locX), gyp(loc+); fr &v(+) probably at low angles to core, w/bx, cr & gg(+), q vlts(locX), lim box--works(locX)tan-rusty, spongy, cellular.	BSD-106	.008	.17	
70- 80		9.5	95			BSD-107	.064	.22	
80- 90		9.5	95			BSD-108	.097	.23	
90-100		9.5	95			BSD-109	.007	.09	
100-110		9.5	95	100'		BSD-110	.008	.27	
110-120		9.5+	95+		124' 1/4" pitchy lim & q, 15° to core.	BSD-111	.055	.11	
120-130		9.5+	95+		126-139' Gg & cr(++).	BSD-112	.074	.09	
130-140		9.5+	95+			BSD-113	.016	.16	
140-150		9.5+	95+			BSD-114	.007	.51	
150-161		8.5	85	150'		BSD-115	.052	.41	
161-170		8.6+	95+		Rhy ppy, alt, 161-220': q eyes(X); clay alt, Sin, ser?; fr(X-++); py dsmd(X); loc rhy ppy fragments,	BSD-116	.046	.41	
170-180		9.5+	95+			BSD-117	.002	.40	

Abbreviations

Ag	silver
alt	alteration
andt	andesite
Au	gold
bx	breccia
cr	crush
dsmd	disseminate
Femag	iron-mag bearing mineral
FeOx	iron oxides
fr	fracture
gg	gouge
jar	jarosite
lim	limonite
loc	local
MnOx	manganese oxides
ppy	porphyry
py	pyrite
q	quartz
rhy	rhyolite
rk	rock
ser	sericite
Sid, Sin	silicified, -i
smpl	sample
v	vein
vlt	veinlet
w/	with
z	zone
(++)	very much
(+)	much
(X)	some
(±)	little
tr	trace
(0)	none

breccia
vein quartz
contact
gouge, crush (faulting)

DDH LOG Site Blue Sphinx mine Location Mineral Co., Nevada Hole no. DDH-4 Page 2 of 7

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Note
180-190	NX	9.5+	95+	190'		BSD-118	.006	.08	Abbreviat & Symbols (cont.)
					194' Rhy ppy, py, fresh, hard - 6" fragment?	BSD-119	.009	.18	
190-200		8.0	80						
200-210		8.5+	85+	200'		BSD-120	tr	.007	andesit fresh
210-220		9.5+	95+	210'	212-213' Gg, gray, 10° to core.	BSD-121	.230	nil	andesit altere
220-230		9.5+	95+		Rhy ppy, alt, 220-297': clay alt(X), py dsmd(±); soft, crumbly, many fr gg; loc rusty lim & gyp(X), black, pitchy MnOx? patches(Xloc) in clay semas on alt partings; fr z probably at low angles to core, w/bx, gg, cr.	BSD-122	.008	.19	rhyolite fresh
230-240		9.5	95			BSD-123			rhyolite altere
240-250		9.5+	95+		222' Rhy ppy fragment, py in fresh, striated cubes.	BSD-124	nil	.33	
250-260		9.5	95	250'	219-245' Soft, fr, gg, cr(x). 245-268' Rhy ppy, hard, solid.	BSD-125			
260-270		9.5	95		268-297 Fr z, gg, cr, lim(+). 270' MnOx(+).	BSD-126			
270-280		9.5	95			BSD-127	.008	.38	
280-290		9.5	95			BSD-128			
290-297		6.6	95			BSD-200	nil	1.60	
297-306		8.6+	95+	300'	Rhy ppy, fr z, 297-345': fr z at 15°± to core axis. Alternating: (1) hard, fresh rhy; py dsmd(X-tr); partings(joints?, fr?) at 15° to core; (2) fr gg, bx, cr w/rusty lim (X-+), Sin & q vlts(locX), py dsmd(X-tr) partly Ox to rusty lim on fr; thin black MnOx (?locX) on seams.	BSD-130			
306-312		5.4	90			BSD-131			
312-316		3.8+	95+			BSD-132			
316-320		3.6	85		297-306' (1) rhy ppy.	BSD-133			
320-330		8.5	85		306-312' (2) fr z.	BSD-134			
330-340		9.5+	95+		312-316' (1) 316-322' (2)	BSD-135			
340-345 bottom		3.7	75	350'	322-345' (1), loc (2).	BSD-136			

DIAMOND DRILL HOLE LOG Site Blue Sphinx mine Location Bovard dist., Mineral Co., NV Page 2 of 2
Hole no. DDH-4 Alt. Coord. N E Bearing S30°W incln. -57 Start Jan. 17,
Finish Jan. 28, 1974 Depth 345' Logged by JPRowoski, HRCooke Anal. by Nevada Assay Office
Remarks; abbreviations & symbols: See below under Notes. Wireline drilling, assays by 4 AT charge.

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 14	rock bit	0	0		Overburden				
14- 20	NX	5.4	90		Andt, alt, 14-60': soft, shattered, fr(+), kaolin-montmorillonite (& ser?) alt; py casts & lim(tr-+); FeOx & MnOx stains(X); q vlts(±)filling fr; several strong shear z w/gg, bx, cr & Fe-MnOx.	BSD-101	nil	.29	
20- 30		9.0	90			BSD-102	nil	.15	
30- 40		9.5	95			BSD-103	nil	.37	
40- 50		9.5+	95+			BSD-104	nil	.19	
50- 60		9.5	95	50		BSD-105	.007	.05	
60- 70		9.5	95		Andt, alt, 60-161': clay & ser alt (X); Sin(±-+) as replacement q, q druses in vugs & fr-filling vlts; rk alternating hard, Sid & soft, non-Sid; py dsmd, fine-grained(±-X)partly to rusty lim(X), jar(locX), gyp(loc+); fr &v(+) probably at low angles to core, w/bx, cr & gg(+), q vlts(locX), lim box--works(locX)tan-rusty, spongy, cellular.	BSD-106	.008	.17	
70- 80		9.5	95			BSD-107	.064	.22	
80- 90		9.5	95			BSD-108	.097	.23	
90-100		9.5	95			BSD-109	.007	.09	
100-110		9.5	95	100		BSD-110	.008	.27	
110-120		9.5+	95+		124' 1/4" pitchy lim & q, 15° to core.	BSD-111	.055	.11	
120-130		9.5+	95+		126-139' Gg & cr(++).	BSD-112	.074	.09	
130-140		9.5+	95+			BSD-113	.016	.16	
140-150		9.5+	95+			BSD-114	.007	.51	
150-161		8.5	85	150		BSD-115	.052	.41	
161-170		8.6+	95+		Rhy ppy, alt, 161-220': q eyes(X); clay alt, Sin, ser?; fr(X-++); py dsmd(X); loc rhy ppy fragments,	BSD-116	.046	.41	
170-180		9.5+	95+			BSD-117	.002	.40	

Abbreviations

Ag	silver
alt	alteration
andt	andesite
Au	gold
bx	breccia
cr	crush
dsmd	disseminate
Femag	iron-mag bearing mineral
FeOx	iron oxides
fr	fracture
gg	gouge
jar	jarosite
lim	limonite
loc	local
MnOx	manganese oxides
ppy	porphyry
py	pyrite
q	quartz
rhy	rhyolite
rk	rock
ser	sericite
Sid, Sin	silicified, -i
smpl	sample
v	vein
vlt	veinlet
w/	with
z	zone
(++)	very much
(+)	much
(X)	some
(±)	little
tr	trace
(0)	none

breccia
vein quartz
contact
gouge, crush (faulting)

DIAMOND DRILL HOLE LOG 5' #3, Blue Sphinx mine Location Mi 1 Co, Nevada Page 1 of 2

Hole no. DDH-5 Alt. ____ Coo. ..N ____ E ____ Bearing S45°W Inclin. -60° Start Jan. 29, 19

Finish Feb. 11, 1974 Depth 324' Logged by HR Cooke Anal. by Nevada Assay Office

Remarks; ~~abbreviations & symbols~~ Wireline drilling; 4 AT fire assay charges; see below under Notes. for abbreviations & symbols.

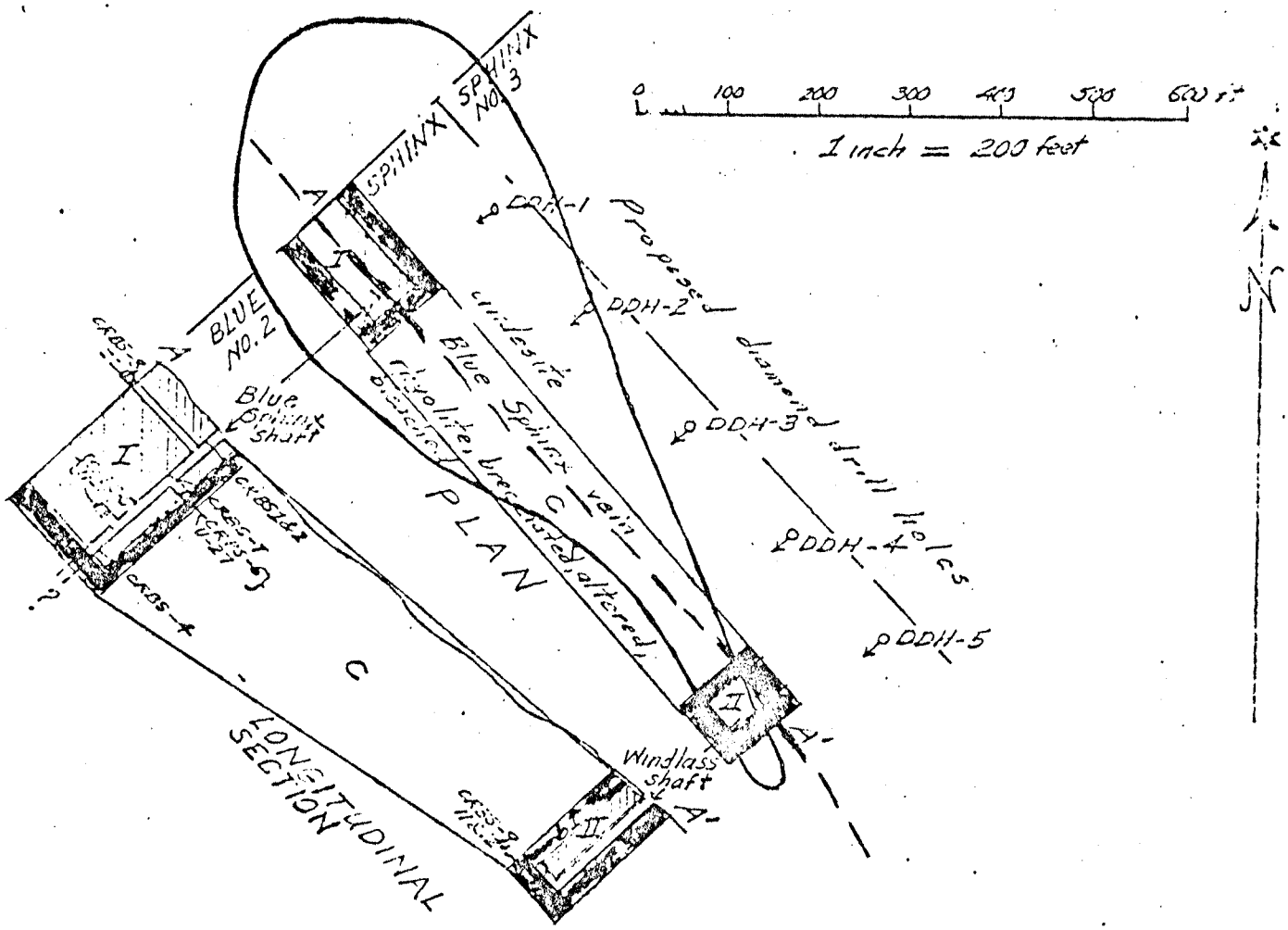
Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
0- 13	rock bit	0	0		Overburden.				
13- 23	NX	10	100		Andt ppy, alt, weathered, 13-30': plagioclase phenocrysts alt to clays	BSD-137	.009	.18	
23- 30		6.0	85		& ser; shattered, fr zs(Xirg); py(tr) w/ lmt coatings, py casts(X)w/ rusty lim,	BSD-138	.007	.08	
30- 40		9.0	90		rusty lim(X-+)on seams & vlts, blk MnOx(±)on partings; green Fe sulfates (±)on partings.	BSD-139	tr	.20	
40- 50		9.5	95		Andt ppy, alt, 30-67': plagioclase lathes alt to clays & ser, & honeycombed w/ py(loc+) & py casts, & lim pseudo-	BSD-140	.002	nil	
50- 60		9.5+	95		morphs after py, & empty py casts (+ loc); Sid & hard(loc), q vlts(±)w/ rusty & black	BSD-141	.043	.16	
60- 67		7.0	100		lim cores; fr zs(Xirg); rusty lim(X) & blk MnOx(X) on partings.	BSD-142	.020	.35	
					30-32' Py cubes dsmd(X)in unoxidized andt ppy.	BSD-143	.006	.41	
67- 77		9.5	95		Andt ppy, alt, fr z, 67-94': mostly soft, friable,				
77- 87		9.5	95		w/gg, bx(irg+)&rusty limstn(x) & box-	BSD-144	.007	.28	
87- 94		6.5	93		works on vlts(±); jar(loc±)w/py casts; waxy alunite? coatings on fr(locX).	BSD-145	tr	.17	
					86-87' Wet, mucky.				
94-104		9.4	95		91-94' Py dsmd(X).	BSD-146	.010	.17	
			100'		Andt ppy, alt, 94-109': Mostly hard, plagioclase				
104-109		4.0	80		lathes argillized & oxidized; Sin(locX); py dsmd (locX); gg&bx(locX); rusty lim vlts w/	BSD-147	.005	.20	
109-119		6.0	60		gypsum(X).				
					107' Reddish phenocrysts or fragments(±) - jasper?	BSD-148	.004	.34	
119-129		8.0	80		Andt ppy fr z, 109-157': mostly soft & broken; clay & ser alt(X); gg&bx, grey(+);	BSD-149	tr	.47	
					v q or Sid fragments, rounded(milled?)(loc±)to 2";				
129-139		8.0	80		alunite? coatings(X)on partings & shears.	BSD-150	.008	.32	
					129' Q vlt, 6" thick.	BSD-151	.008	.28	
139-149		7.5	75		130-132'. Several slickensides, black gg at 45° to core.				
149-157		6.0	75		Rhy ppy, alt, fr z, 157-299': Grey	BSD-152	nil	nil	
157-167		7.5	75		gg&bx(+), soft, plastic to friable; clay alt(+); white alunite? on frs; q eyes	BSD-153	.004	.15	
					(+)to .3" diameter; thin black gg(loc+); hard Sid&pyd fragments to 4"(locX)				
167-177		7.5	75		rounded - milled?; py dsmd(±-X).	BSD-154	tr	.44	

Abbreviations

Ag	silver
alt	alteration
andt	andesite
Au	gold
bx	breccia
cr	crush
dsmd	disseminate
Femag	iron-magne bearing mi
FeOx	iron oxides
fr	fracture
gg	gouge
irg	irregular
jar	jarosite
lim	limonite
loc	local
MnOx	manga oxides
ppy	porphyry
py	pyrite
q	quartz
rhy	rhyolite
rk	rock
ser	sericite
Sid, Sin	silicified,
smpl	sample
v	vein
vlt	veinlet
w/	with
z	zone
(++)	very much
(+)	much
(X)	some
(±)	little
tr	trace
(0)	none
▵▴▵	breccia
	vein quartz
	contact
	gouge, crus
28	(faulting
	mineralizat

DDH LOG Site Blue Sphinx min. Location Mineral Co., Nevada Hole no. DDH-3 Page 2 of ...

Run depth ft	Core recovery size	feet	%	Ft	Rock description	Smpl no.	Analyses Au oz	Ag	Notes
				180'					Abbreviation & symbols (con
187-197	NX	9.5	95		157-200' Pink, hard phenocrysts or inclusions(X) - jasper?, in Sid portions of core.	BSD-156	.003	.29	andesit fresh
197-213		15.0	94	200'	195-299' Pink stain(Xloc) - hem?	BSD-157	tr	.10	andesi altere
					270-299' Black patches(±)MnOx?				
					274' Py, fine-grained, on frs.				rhyolit
213-224		10.0	91		275-280' Black patches, sooty, compact(±), some w/foils(locX)bronze sheen & curved cleavage, some in cream-colored	BSD-158	.013	.19	fresh rhyolit
224-234		9.5	95		waxy mineral - clay w/adsorbed hem?	BSD-159	tr	.14	altere
					280-281' Sid, hard.				
					285-299' Black patches(X), most w/				
234-244		9.5	95		fine-grained py(tr-X), loc in cream-colored mineral.	BSD-160	.006	.11	
244-254		9.5	95			BSD-161	.002	nil	
				250'					
254-264		9.5	95			BSD-162	.010	.53	
264-274		9.5	95			BSD-163	.009	.32	
274-284		9.5+	95+			BSD-164	tr	.32	
284-294		10.0	100			BSD-165	tr	.25	
294-299		4.8	96		Rhy ppy, alt, 299-324': Clay alt(Xloc);	BSD-166	tr	.82	
					hard(+)Sin(locX);white alunite? & yellow				
299-309		9.5	95	300'	jar coatings on partings(X)increasing	BSD-167	tr	.06	
					toward bottom;black patches(±) - inclusions?,				
					w/fine-grained py(tr)loc in cream-colored				
309+319		9.5	95		mineral(as from 285-299');rusty lim (loc	BSD-168	.005	.30	
					tr)from py;fr & partings at 0°-15° to core				
319-324		4.7	94		axis.	BSD-169	tr	.30	
Bottom					309' Inclusion, dark green, chloritized?,				
					w/py dsmd(tr).				
					321-324' Green stain(X) - Fe sulfate?,				
					& rusty lim from py(±).				
				350'					



SAMPLING

Blue Sphinx shaft

Sample	Length (ft.)	Grade oz Gold	Silver	L x Au	L x Ag	Notes
CRBS-1	1	1.57	1.46	1.57	1.46	Aver. of 3 assays: .472-4.11, 2.13-1.67, 2.15-1.00
2	1	.267	1.27	.267	1.27	" " " " .634-.811, .07-.6[illegible]
3	30	.021	1.57	.630	47.010	
4	6	tr	.23	—	1.38	
6 } U-27	20	.13	.851	2.60	17.020	Aver. of CRBS-6 (tr-1.222) & U-27 (.26-.48)
CRBS-5 U-38	20	.085	.523	1.60	10.560	" " CRBS-5 (tr-.867) & U-38 (.17-.19)
	78			5.227	79.567	
	Average:	.067	1.01			

Windlass shaft

CRBS-7 U-32	30	.88	1.056	26.40	32.580	Aver. of CRBS-7 (tr-1.273) & U-32 (1.76-.70)
CRBS-8	8	tr	.723	—	7.656	
12	15	.234	1.166	3.510	17.490	
	53			29.910	57.726	
	Average:	.55	1.09			

ORE RESERVES

Probable Ore

	Strike length ft.	Width ft.	Depth ft.	Thousands of cu. ft.	Tons	oz/ton Au	oz/ton Ag	Notes
I	130	40	200	130	104	.267	1.01	
II	30	53	150	138	11	.55	1.09	
	Total:				115	.268	1.05	

Prospective Ore

P1 & P2	150	20	200	1,040	83.2	.067	1.01	P1 & P2 each 41.6 K tons
P3	20	90	200	360	28.7	"	"	
P4	130	90	20	270	21.5	"	"	
	Total:				133.4	"	"	
P1 & P2	20	93	150	563	45.0	.55	1.09	P1 & P2 each 22.5 K tons
P3 & P4	30	20	150	150	12.3	"	"	P3 & P4 each 7.2 "
	Total:	90	93	20	167	12.3	"	"
						72.7	"	"
	Grand Total:	550	91.5	195	9,400	750	.268	1.05
						961.1	.262	1.05

Mine workings & surface profile based only on partial surveys.

Probable ore

Prospective ore

11-A5 Melbye sample

CRBS-3 Cooke, Everett "

Melbye arsenic anomaly (>100 ppm As)

ORE RESERVES

Blue Sphinx mine

Mineral Co., NV

November 1973

CEA Map 282-AF

AMERICAN SMELTING AND REFINING COMPANY

SELBY PLANT — SELBY, CALIFORNIA

SETTLEMENT STATEMENT

551 ORE SETTLEMENT STATEMENT — DATE SETTLED: SEP 27 1962 — SELBY LOT NO. 4651

IMPORTANT: If not advised to the contrary within ten days from date settled, we shall assume that returns are satisfactory and the product covered by this settlement will be placed in process. American Smelting and Refining Company

SHIPPER Blue Spruce Mines Inc.
c/o Homer McGinnis
1114 Cordell Ave
Yakima, Washington

MATERIAL 6 - Sacks Ore
SHIPPER'S NO. —
DATE RECEIVED 9-5-62
SHIPPING POINT Hawthorne, Nevada
MINE NAME —
CARRIER Truck
FREIGHT CHARGES
T. C. LICENSE NO.
SILVER TAX REG. NO.

GROSS WEIGHT (LBS.)	529	
TARE	5	
NET (WET)		524
MOISTURE 1.0 % Mud		5
SAMPLES TO SHIPPER		
NET DRY WEIGHT (LBS.)		519

ASSAYS & ANALYSIS			PERCENTAGES & PRICES	$-DEBITS	$-CRED
GOLD	1.72	OZS.P.T.	LESS ___ % @ $ 31.8925 PER OZ.		TV
SILVER	1.5	OZS.P.T.	LESS ___ % LESS 1 OZ. @ 112.75 ¢ LESS 1 ¢ PER OZ.		
LEAD		%	LESS ___ UNITS LESS ___ % @ ___ ¢ LESS ___ ¢ PER LB.		
COPPER		%	LESS ___ UNITS @ ___ ¢ LESS ___ ¢ PER LB.		
ARSENIC		%			
ANTIMONY		%			
TIN		%			
BISMUTH		%			
INSOLUBLE		%			
IRON		%			
LIME		%			
ZINC		%			
SULPHUR		%			
		%	HANDLING CONTAINERS (5 SACKS)	15	
			EXCESS MOISTURE ___ UNITS @ ___ ¢ PER UNIT		
			LEAD ___ UNITS @ ___ ¢ PER UNIT		
			EXCESS VALUE OVER $ 20.00 @ 10 %	3 53	
			BASE CHARGE	12 50	
			TOTALS	17 53	55
			VALUE PER TON		37
			VALUE OF 519 LBS. @ $ 37.76 PER TON		9
			SAMPLING & ASSAYING	2.00	
			FREIGHT ___ LBS. ___ @		
			HAULING ___ LBS. ___ @		

SETTLEMENT PAYABLE TO:

CC:
Joe Brandt & Earl Harris
General Delivery
Hawthorne, Nevada

< Deficit Daz Company	American Smelting & Refining Waived >	TOTALS 20 00 9
		DUE AMERICAN SMELTING AND REFINING COMPANY 10 00
		NET PROCEEDS DUE SHIPPER
VOUCHER NO. 9152	To be paid upon receipt by us of properly executed affidavit which will qualify the silver content of this shipment for sale to the U.S. Government.	→ WITHHELD SILVER
		NET

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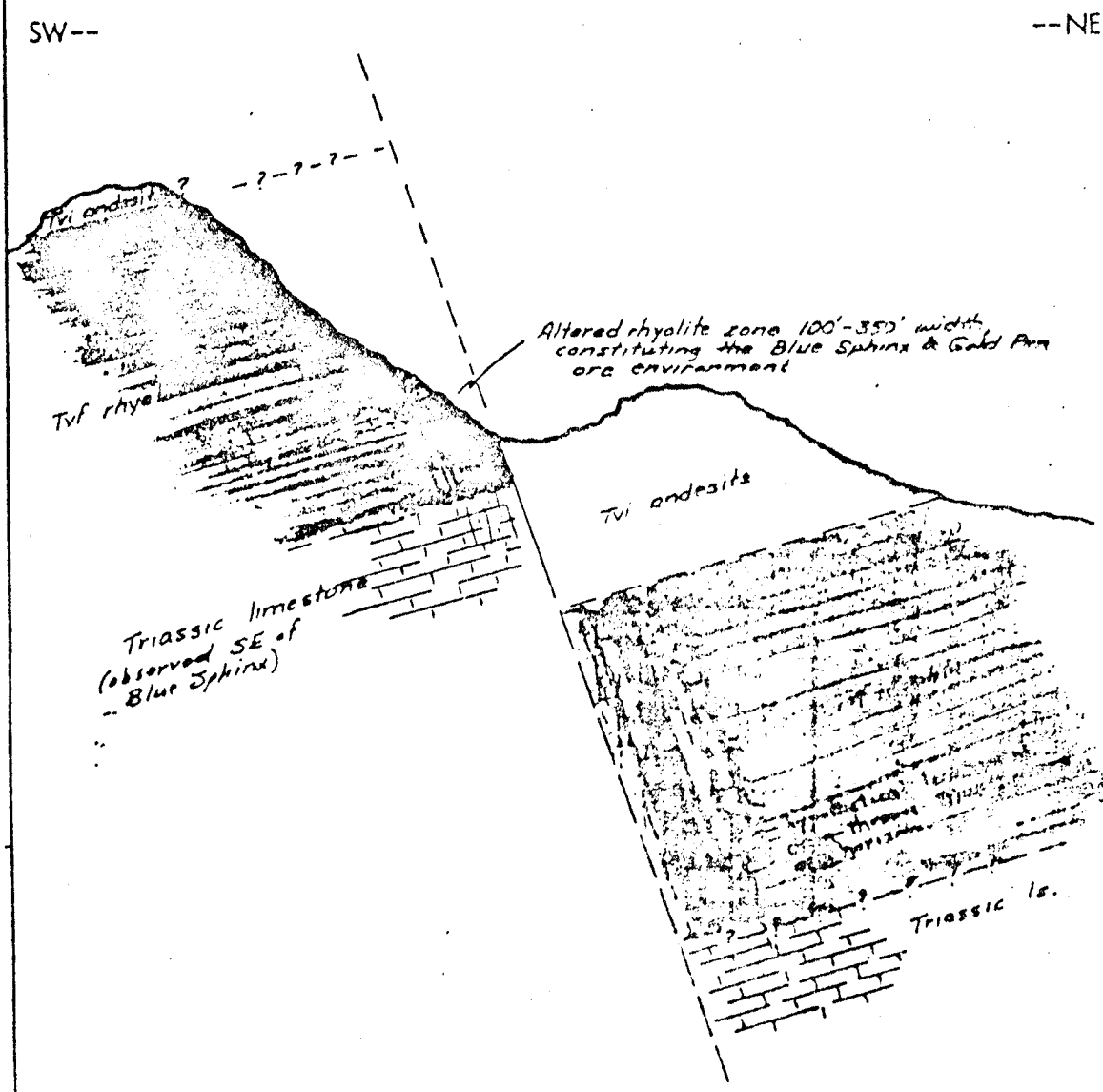
HYPOTHETICAL CROSS SECTION THROUGH BLUE SPHINX CLAIM AREA

Scale 1" = 500'



LOOKING NORTHWEST

July 14, 1972 Hand Sample ial 112120

Mine Blue Sphinx, Inc.

Portland, Oregon

RESULTS PER TON OF 2000 POUNDS

Nevada Assay Office
5800 RENO HIGHWAY
FALLON, NEVADA 89406
Telephone 867-3678

NUMBER	GOLD Ozs. per Ton	SILVER Ozs. per Ton	LEAD Wet on Ore	COPPER Per Cent	TUNGSTEN Per Cent	ZINC Per Cent	ANTIMONY Per Cent	IRON Per Cent	CaF2 Per Cent	Per Cent	Per Cent
# 1	1.061	1.39									
2	.063	Tr									
3	.312	.083									

Remarks

Charges $ 10.50 pd

A Peterson & Co Ltd

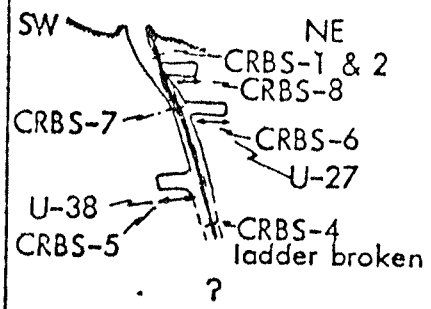
BLUE SPHINX MINE

SAMPLES

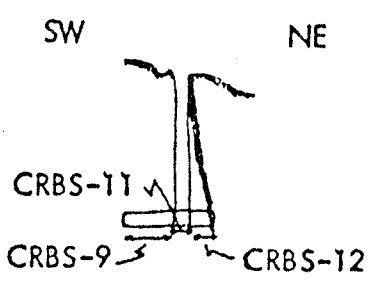
method	lab	sample no.	length ft.	Au oz	Ag oz	weight lbs
FA	N	CRBS-5	20	Tr	.867	10
		U-38	20	.17	.19	
FA	N	CRBS-4	6	Tr	.657	2
FA	N	CRBS-6	20	Tr	1.222	20
		U-27	20	.26	.48	
FA	N	CRBS-7	6	Tr	.223	2
FA	N	CRBS-8	30	.021	1.567	30
FA	N	CRBS-9	30	Tr	1.273	30
		U-32	30	1.76	.90	
FA	N	CRBS-11	8	Tr	.983	2
FA	N	CRBS-12	15	.234	1.166	3
FA	N	CRBS-1	1	.478	.499	1
S	A	"	1	2.10	1.87	1
CN	A	"	1	2.15	2.00	1
FA	N	CRBS-2	1	.634	.811	1
S	A	"	1	.07	.64	1
CN	A	"	1	.098	.73	1
		CRBS-15				
		BS-6	6			5

(U = Melbye sample; CRBS or BS = Cooke, Everett sample)
(N = Nevada Assay Office; A = Nevada Analytical Service)
(FA = fire assay; S = spectrographic analysis; CN = cyanide extraction)

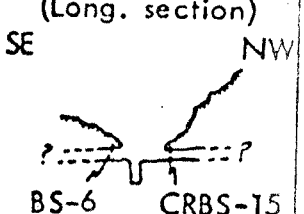
BLUE SPHINX SHAFT



WINDLESS SHAFT

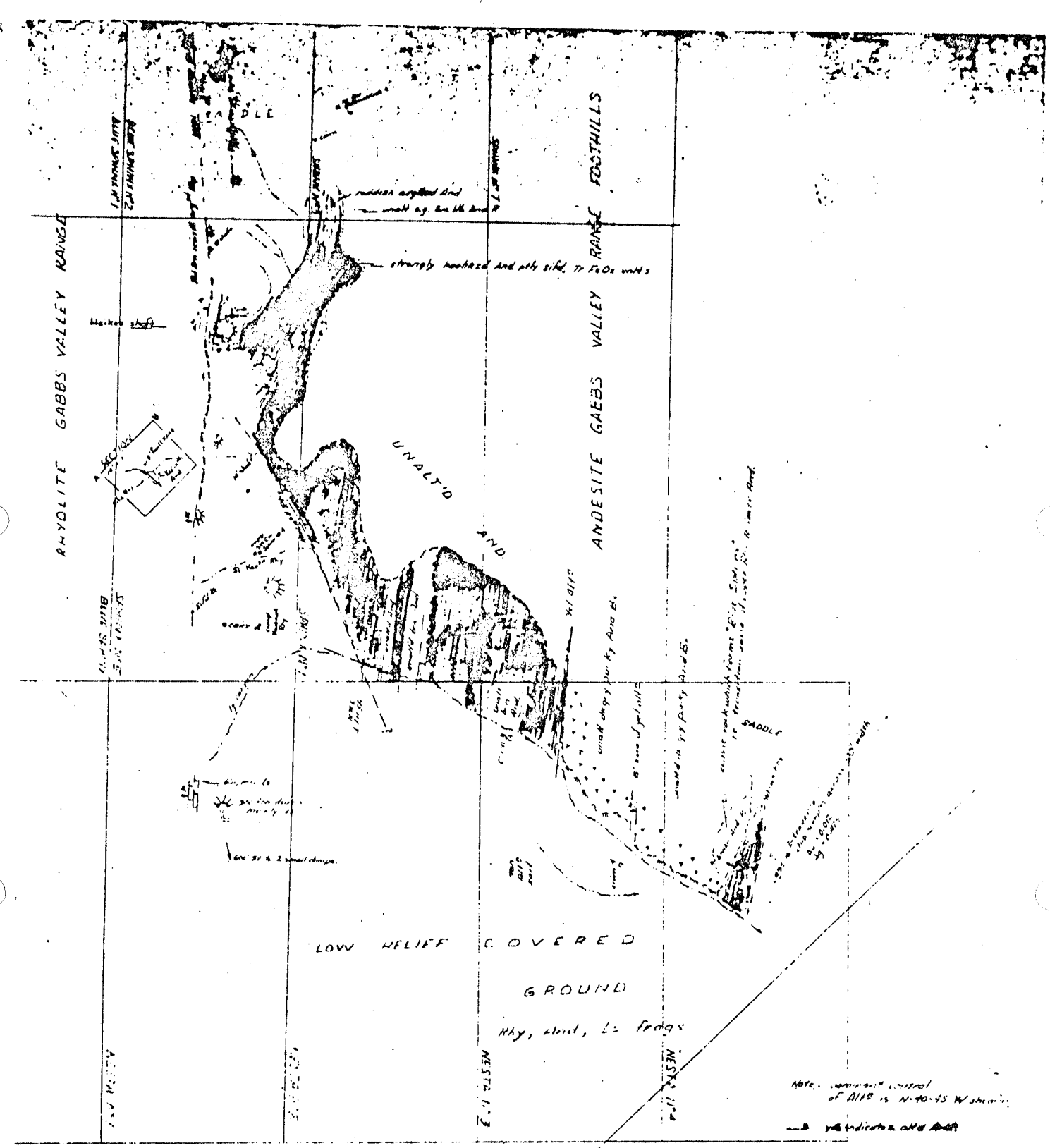


HEIKES SHAFT
(Long. section)



SCALE: 1" = 200'

BLUE SPHINX INC.
Principal Mine Workings
March, 1973
Brunton & pace, or sketch
COOKE, EVERETT & ASSOC.



PRELIMINARY GEOLOG RECON MAP
South end of Blue Sphinx Cl
Altered Andesite Area

Cooke Exercell & Associates

BLUE SPHINX

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