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EDWARD WISSER
MINING GEOLOGIST

SAN FRANCISCO OFFICE
533 CALL BUILDING
TELEPHONE GARFIELD 4676

BRYAN, WISSER AND PAYNE
CONSULTING ENGINEERS
432 REGINA BUILDING
MANILA, P. I.

San Francisco, May 3rd, 1941.

Mr. Charles Schlessinger,
1069 Mills Building,
San Francisco, Calif.

*Paid by Wells Fargo Bank
& Union Trust Co. No. 5066
May 12th 1941*

To Edward Wisser, Dr.

Field examination, Occident Quicksilver Property,	
1 day @ \$50.00.....	\$50.00
Preparing map and report, 1 day @ \$25.00.....	25.00
Breakfast, luncheon on trip.....	1.50
	<hr/>
	\$76.50

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~~432 REGINA BUILDING~~
~~MANILA, P. I.~~

May 3rd, 1941.

Mr. Charles Schlessinger,
1069 Mills Building,
San Francisco, Calif.

Dear Sir:

Pursuant to your request, I examined the Occident quicksilver property, Mendocino County, Calif., on May 1st last, and submit herewith a report covering the results of this examination.

Yours very truly,

E.W.

Edward Wisser

REPORT ON THE OCCIDENT QUICKSILVER PROPERTY,

MENDOCINO COUNTY, CALIF.

Edward Wisser.

INTRODUCTION.

The following report is based on a visit to the property, May 1st, 1941; on a report by George B. Ackerman dated June 22nd, 1940; and on information furnished by C. Dickinson, who accompanied the writer on his visit to the property.

LOCATION.

According to the Ackerman report, the Occident quicksilver property lies in Section 6, Township 12 N, Range 11 W, Mt. Diablo Base and Meridian. It is 8 miles south of Hopland and 10 1/2 miles northwest of Cloverdale.

Chas. G. Dickinson and Fred G. Spackman hold the property under lease with option to purchase, the terms of the lease being 10% of the gross proceeds and the purchase price \$20,000, that sum to have been paid by December 31st, 1945. Apparently the royalties apply on the purchase price. The ground on which the property lies is commonly known as the Beattie Ranch, 3080 acres, held in fee by Clement Beattie, Chas. Gilger and James G. Cortelyou, according to Ackerman. I believe however that the ranch itself is held solely by Beattie and Gilger, and that Cortelyou merely enters in the lease, which as I understand it covers mineral rights throughout the 3080 acres of the ranch.

GEOLOGY. QUICKSILVER.

Refer to accompanying map. The country is one of moderate relief. Basic Tertiary lavas cover the higher parts of the ridges. Underlying these are Franciscan sandstones, shale and chert. The salient feature of the property is the "mud sill", a mass of diabase

underlying light-colored Franciscan sandstone. The diabase mass has a flattish top, like a broad whaleback, in the SE portion of the mapped area. The whaleback narrows to the northwest, so that near the Upper Cut the diabase forms a rather sharp buried ridge beneath the Franciscan sediments.

The contact between the diabase and the overlying sandstone is mineralized, and it is here that the quicksilver showings occur. Since the contact is flat and mainly near the present surface, erosion has in places cut through it and into the diabase, and removed any ore that might have existed. Further, mineralization is by no means continuously good along the contact in the uneroded portions. Starting at the northwest end of the map: the Upper Cut is on the northwest nose of the diabase ridge. Four feet of ochre, with silica-carbonate rock above, is exposed on the SW flank of this diabase "ridge"; but the contact swings around convexly to the north, and the ore gives out. There is no evidence that ore continues southeastward either.

The Middle Tunnel and incline, together with surface cuts and shallow tunnels, expose about 25' of ore on the NE flank of the diabase "ridge". This ore body dips gently NE, down the diabase contact. But the Upper Tunnel, only about 50' NW of these workings, shows nothing that looks like ore. It does show an apparent thrust fault, at any rate, thick, flat-lying gouge. Major quicksilver ore bodies commonly occur in a porous receptacle rock beneath an impervious trap, like gouge or serpentine. The trap is here, but evidently no receptacle rock, for the rock beneath the gouge is soft, mushy, and itself impervious. There is about a foot of ore directly beneath the main fault gouge.

Again, the "fishhook" tunnel, even closer to the incline, looks poor. It seems very unlikely, therefore, that the Incline ore body extends any distance NW of the incline. Poor surface showings make it

equally doubtful that this ore body has any considerable extension southeast. At the foot of the incline the ore body is dipping ~~NE~~, into the hill, and nothing may be said concerning a possible extension here. But the short strike length of the ore shoot makes any great dip length doubtful.

The Lower Tunnel marks another focus of mineralization; but it looks poor, and its eastern extension is prohibited by the stream bed to the east.

Between the Lower Tunnel and the Lower Cut, erosion has removed any ore that might have existed.

The Lower Cut shows about 10' of ochre, lying on the diabase "whaleback" and beneath silica-carbonate rock. There is a great abundance of silica-carbonate float between the Lower Cut and the old filled shaft. The Lower Cut Ore Body definitely quits to the SE and NW; one may walk around the whole ore body. It has no extension in depth, for the diabase mass here slopes down toward the stream, parallel to the present surface, and at no great depth beneath it.

The quicksilver occurs as cinnabar and probably metaeinnabar. The best ore seems to lie in the ochreous "bed" immediately on top of the diabase. Above ^{the ochre} ~~that~~ hard silica-carbonate rock is usually found, and above the silica-carbonate rock, light-colored Franciscan sandstone. Thus the structure is precisely the reverse of the trap-receptacle structure described above. Quicksilver solutions rise from below; they must be trapped from above. Here the "trap" lies below, and the sandstone, a possible trap under other circumstances, lies above. Lack of a trap accounts for the low grade of the ore, and the presence of the impervious diabase whaleback below accounts for the spotty nature of the mineralization and lack of large ore bodies.

GRADE OF THE ORE.

No time was available for sampling, and little for panning. Mr. Dickinson panned samples from the main exposures, in my presence. He claims that the ore bodies will average 5-6 pounds quicksilver per ton. Judging by the tails seen in the pan, I think this is about correct. Doubtless there are higher-grade spots, but the cinnabar is peppered through the ore rather uniformly, so that more reliance may be placed on sampling than ordinarily.

TONNAGE.

There are two ore bodies for which tonnage may be estimated, the Incline Ore Body and the Lower Cut Ore Body.

Incline Ore Body.- The limits to the NW and SE have been discussed. Ore extends an unknown distance down the dip, but in view of the manner in which ore peters out along the strike, it is unsafe to allow any great extension down the dip. Allowing such an extension of 15' from the bottom of the incline, I estimate tonnage of this ore body at 2400 tons.

Lower Cut Ore Body.- Here I allow a thickness of 15', a length of 80' and a width of 50'. This gives 4000 tons.

Total Ore.- 6400 tons, averaging say 5 lbs. quicksilver per ton. Unless some other showings happen to develop, not examined by the writer, I do not see any promise of materially increasing the tonnage in sight.

BUSINESS ANGLE.

Ackerman's report describes the equipment on the property, including a 2'x20' rotary furnace, condenser etc. The plant is quite inadequate, in poor condition and poorly designed. To operate, an entirely new plant would be necessary. A plant capable of treating about 50 tons per day would probably cost at least \$20,000. While the

4000 tons in the Lower Cut Ore Body could be mined by power shovel, the 2400 tons in the Incline Ore Body could not be as easily mined in that manner. Costs, therefore, would be relatively high. I guess total cost of mining and reduction at \$3,00 per ton. Mining equipment would have to be purchased. The set-up therefore is about as follows:

(Price of quicksilver assumed as \$2.00 per lb.)

6400 tons @ 5 lb./T or \$10.00.....	\$64,000
Less 10% royalty.....	57,600
Less cost to mine and treat.....	38,400

Net operating profit therefore is	\$38,400.
Cost of plant, mining machinery etc.	25,000.
Net profit of the operation.....	<u>\$13,400.</u>

CONCLUSION.

These figures are admittedly guesswork. Also, considerably more ore may eventually be developed. But the property looks unattractive to me because of the limited chances for more ore, the smallness of the ore bodies in relation to the low grade of 5 lb.s per ton, and especially because the structural conditions-the trap and receptacle rock- that make major quicksilver ore bodies in California, here cannot function because the trap lies below the receptacle rock.

The property has one attractive speculative feature: if the diabase is a thin sill and not a major mass, then it may be a trap, and there may be important ore bodies below it. In that case the ore above is merely "leakage" through the trap. A company with plenty of capital and an adventurous spirit might do worse than try a drill-hole vertically downwards in the diabase. If the latter is thin, and sandstone is found beneath it, then a shaft would be a promising gamble, designed to penetrate the diabase sill and permit exploration beneath it.

Ignoring this speculative feature, I do not recommend putting money in this property for the purpose of mining and treating the ore above the diabase. The indicated returns from this are too small in relation to the required investment.

If, however, it is decided to go into this deal, then another day should be spent on the property in taking careful samples for assay, together with panning.

San Francisco, Calif.

May 3rd, 1941.

E.W.
Edward Wisser
Mining Geologist.

5912
Mr. Charles Schlessinger.

1069 M. in Bldg

San Francisco, May 3rd, 1941.

Mr. Charles Schlessinger,
1069 Mills Building,
San Francisco, Calif.

Dear Mr. Schlessinger:

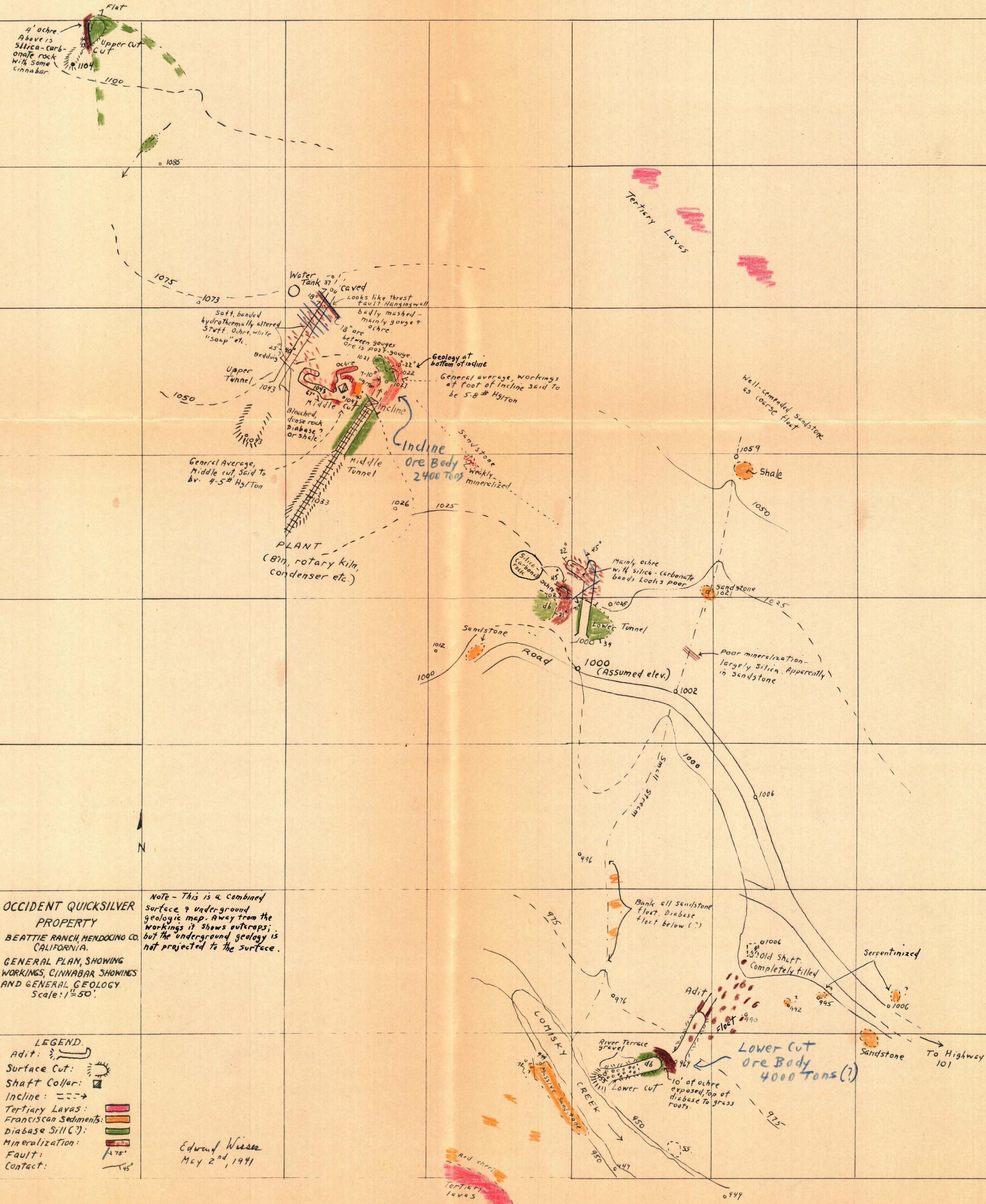
I am sorry this turned out a slightly bigger job than I anticipated. I thought I could do it all in one day, then merely write a brief letter about it. As it happened, the property was a little too good to turn down outright, and not good enough for me to come back and recommend to you a more thorough examination. It is sort of on the fence, and I had to draw up my map and do quite a bit of studying before I could decide it wasn't quite good enough. If you feel I am charging too much I am ready to stick to my bargain, but the extra time was necessary to give you the picture you wanted.

I will add a word about the way I feel about the property. If I were Dickinson or Spackman, surely, I should try to get some money interested to put the property in operation. But if I were the person with the money, I should look around for a more attractive proposition. When you put money in mines, it's the speculative factor, the chances for a lot more ore than is in sight, that makes the gamble really attractive. The ideal set-up is where you know you'll get your money back, and have good reasons for hoping there'll be a lot more ore and profit. I do not know what deal is proposed between yourself and Dickinson, but, in spite of my pessimistic figures, I am ready to admit the good possibility of your getting your money back plus a small profit, if the deal is right. But I should wait for a property with better chances. (I have none to sell).

I am going to New Almaden mine for a weeks geological work there. If I can be of any further services this coming week, call me at Ballard 4270, San Jose.

Yours very truly,

Edward Wisser



OCCIDENT QUICKSILVER PROPERTY
 BEATTIE RANCH, MENOCING CO. CALIFORNIA.
 GENERAL PLAN, SHOWING WORKINGS, CINNABAR SHOWINGS AND GENERAL GEOLOGY.
 Scale: 1"=50'

Note - This is a combined surface & underground geologic map. Away from the workings it shows outcrops, but the underground geology is not projected to the surface.

- LEGEND.**
- Adit:
 - Surface Cut:
 - Shaft Collar:
 - Incline:
 - Tertiary Lavas:
 - Franciscan Sediments:
 - Diabase Sill (?):
 - Mineralization:
 - Fault:
 - Contact:

Edward Wiese
 May 2nd, 1941

Red ochre
 Tertiary lavas

