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EXHIBIT 10

UNITED STATES
DEPARTMENT OF THE INTERIOR
SECRETARY OF THE INTERIOR, D. MCKAY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION III

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED

MAR 13 1953

DMEA 2448, Mt. Diablo Quicksilver Mine

Contra Costa County, California

E. H. Pampeyan, Geologist
U. S. Geological Survey

February 27, 1953

Reviewed by
DMEA OPERATING COMMITTEE

3-20-53

(date)

Summary

A DREA application was filed in December, 1952 by Mr. Ronnie Smith requesting Government aid to explore the Mt. Diablo mercury mine in Contra Costa County, California. The field examination was made by E. H. Papeyan, J. F. Robertson, and D. B. Tatlock, of the U. S. Geological Survey.

The original application proposed two phases of underground exploration with a total project cost of \$75,000. On the advice of the Geological Survey, Mr. Smith filed an alternate proposal that changes the first phase to 330 feet of shaft sinking and 625 feet of drifting and crosscutting at a cost of \$73,050. Phase two, which would depend on the results of phase one, consists of an additional 1300 feet of drifting at a cost of \$52,000, bringing the total cost to \$125,050.

At the present market price of mercury, the first phase of exploration might develop enough ore to permit the applicant to repay the Government's share of the exploration costs. Phase two, however, appears to offer much less hope for potential production. The application for exploration for phase one is recommended if the current need for mercury justifies Government participation.

Introduction

The Mt. Diablo Quicksilver mine is located in the SW $\frac{1}{4}$ of sec. 29, T. 1 N., R. 1 E., MURKIN, on the northeast side of Mt. Diablo Contra Costa County, California. The property is owned by the Mt. Diablo Quicksilver Company, Ltd., of Clayton, California, and has been leased to Ronnie Smith. The mine is $\frac{1}{2}$ miles by paved road from San Francisco and is easily accessible by automobile. It is reached by travelling $\frac{1}{2}$ miles southeast from Clayton on the Marsh Creek road, then turning right on the Livermore road for $\frac{1}{2}$ mile to Mine Way, which is the entrance to the property.

The Mt. Diablo mine area was visited by E. H. Papeyan, J. F. Robertson, and D. B. Tatlock, of the U. S. Geological Survey, for several days between December 1952 and February 1953. During this time, a topographic and geologic plane table map of the area under consideration was made.

The property was discovered between 1867 and 1875 and has been operated sporadically since that time. According to Mr. Vic Blomberg president of the Mt. Diablo Quicksilver Company, principal mercury production from the western end of the property was from 1875 to 1877. As much as 3,000 flasks of mercury is said to have been produced, but the amount probably was closer to 300 flasks judging by the extent of the underground workings. The greatest recorded production was between 1937 and 1947 when 10,454 flasks of mercury were produced from the Hill workings at the eastern end of the property. The most recent production was from November 1951 to January 1952 when 123 flasks were produced from the open

pit operations in the Mill area. This operation was halted by landslides into the pit that rendered surface work no longer feasible.

Workings

The workings in the Mill area amounted to some 3,400 feet of drifting and crosscutting on four levels with a vertical range of 210 feet. The proposed exploration would be at an elevation of 600 feet, or about 100 feet below the lowest level, on the down-dip extension of the ore zone. The adit level, as well as lower levels of the Mill Workings was caved at the beginning of 1952. Most of the workings above the 80 level were uncovered by open pit operations.

Underground work at the western end of the property consisted of 2,100 feet, more or less, of drifting and crosscutting with a vertical range of 230 feet. The Camp, Jones, and Ryno tunnels have been caved for almost 15 years. The Kitchen tunnel is open but does not expose any ore.

The surface workings consist of a pit 50 feet long, in an east-west direction, by 200 feet wide and 150 to 200 feet deep, with three main benches. The highest bench, No. 5 on the map, was being mined for ore when slides from the steep south face terminated the operation.

The property has furnacing, retorting, and housing facilities, all of which are in good condition and could be put into use on short notice.

Geology

The mines are located on the northeast side of the "plug" of Franciscan rocks and serpentine which has intruded Jurassic and younger sediments in a way comparable to the intrusion of a salt dome. The Franciscan formation in the mine area is made up of massive, poorly bedded siliceified sandstone, in part greywacke, with lesser amounts of sheared shale and thin-bedded chert. Serpentine intrudes the Franciscan rocks as irregular lenticular masses, the contacts of which strike from N. 50° W. to west and dip about 50° northeast. This trend is pronounced in the regional structure. To the north and east, just beyond the limit of the mapped area, lower Cretaceous shales are exposed and form low rolling slopes. About one mile to the east, some Tertiary biotite andesite intrudes the Cretaceous sediments.

Silice carbonate rock, or hydrothermally altered serpentine, appears throughout most of the mapped area. It is similar to the silice-carbonate rock of other Coast Range quicksilver deposits and consists largely of chalcedony and quartz, with some dolomite and other carbonates with small amounts of pyrite, marcasite, and opal. Usually massive, it is locally banded or laminated in white and black. The bands are, in some places, parallel to the foliation of the serpentine and probably represent relic textures.