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D. R. MacLaren

July 30, 1965

Memorandum

To: Chief, Office of Minerals Exploration

From: Harold Kirkemo, U. S. Geological Survey

Subject: On-site examination report
OME-6445 (Silver)
Gold Nugget Syndicate, Ltd.
Silver Coin Mine
Lewis and Clark County, Montana

INTRODUCTION

The Silver Coin mine and nearby workings were examined by the writer on June 26, 1965, in company with Mr. Louis Faura, Clancy, Montana, who is the local partner of Gold Nugget Syndicate, Ltd., the Applicant. About six hours were spent examining the surface and underground geology and workings. Preliminary review of the application had shown no geologic justification for the original proposal, and the field examination supported that judgment. This was discussed with the Applicant; and thereafter, the time was spent examining the prospects and surface geology west of the main workings.

The Applicant proposes an exploration program consisting of 500 feet of drift on the main tunnel level, 110 feet of raise, 75 feet of trenching, 500 feet of rehabilitation, and 1,000 feet of long-hole drilling. Total cost is estimated to be $40,000.00.

RECOMMENDATIONS

It is recommended that the application for exploration assistance be denied because the geologic facts do not support the expectations for ore discovery. The proposed work would be at least 120 feet below the lower limits of the small, secondarily enriched ore bodies whose downward extensions are the targets of exploration.

Possible targets containing high-grade silver ore may exist in small ore bodies near the surface elsewhere on the property. The Applicant is aware of this possibility, and probably would submit an amended application for OME assistance if encouraged to do so. The limited exploration work needed to test the alternate targets could be accomplished with the funds he must have on hand to qualify for the application already submitted.

The possibility is remote for repayment of an OME loan from production royalties on the typical ore bodies that may be found; and therefore, Government assistance for an alternate proposal is not recommended.

LOCATION AND ACCESSIBILITY

The Silver Coin mine is about five miles northwest of Helena, Montana, and about 1.5 miles due west of Fort William Henry Harrison, as shown on Figure 1. The two unpatented mining claims (Coffee No. 1 and Coffee No. 2) comprising the property are situated in the Grass Valley mining district, unorganized, in sec. 20, T. 10 N., R. 4 W. The property is reached from Helena on a road which extends around the north and west sides of Fort Harrison and continues west into the hills south of Stemwinder Hill. The two claims are situated on the crest and upper slopes of a grass-covered ridge. Elevations range from about 4,600 to 5,200 feet.

DEVELOPMENT AND PRODUCTION

Workings on Coffee No. 1 claim consist of a near-surface stope which was mined in part as an open pit, two tunnels totalling about 1,450 feet of crosscuts and drifts, a 45-foot shaft, and two shallow surface cuts. These are shown on Figure 1 together with the Applicant's proposed exploration program.

On Coffee No. 2 claim, workings consist of four shafts and scattered surface cuts and trenches as shown on Figure 1. The shafts are 15 to 40 feet deep and are inaccessible because of the absence of timber.

Shipments totalling 3,305 tons of ore averaging 21.96 ounces silver and 0.01 ounces gold per ton and several percent each of lead and zinc have been made from the property.

GEOLOGY

The geology of the Silver Coin mine was described by J. T. Pardee and F. C. Schrader in 1933 in U. S. Geol. Survey Bull. 842, page 58 as follows:

> "The Silver Coin mine, 1 mile west of Fort Harrison, has produced a considerable amount of rich silver ore. It was operated in 1928 by Tony Maras under a lease from Owen Byrnes and others. The workings are near the top of a hill and include two tunnels that, together with drifts and crosscuts, have an aggregate length of 400 feet or more. These workings explore a body of Helena limestone that is invaded by a stock of quartz monzonite. The limestone is changed by contact metamorphism to a hard, tough gray banded hornstone in which the bands represent the bedding. The pitch and strike of the banding changes abruptly from place to place as a result of dislocations that accompanied the invasion of the monzonite. The ore bodies are parts of certain layers of the hornstone that usually show a little copper stain but otherwise do not, as a rule, differ much in appearance from the barren parts of the rock. The following minerals were identified in the ore by W. T. Schaller: Argentite, cerargyrite (horn silver), cerusite, cupredescloizite (a vanadate of lead and zinc containing also copper and arsenic), azurite, and a yellow stain containing antimony, probably stibiconite. Chalcedonic quartz occurs in cavities, and thin films of manganese oxides are deposited in seams. In places there are seams and bunches of coarsely crystalline calcite. Fracture planes in the monzonite exposed in the lower of the two tunnels are coated yellow with nontronite, a hydrated silicate of iron. Probably all these minerals are secondary forms derived from the original minerals in the general process of oxidation.
>
> "The ore bodies are irregular and indefinitely bounded. Reported assays of samples run as high as 1,000/8 ounces in silver to a ton."

Little additional information is disclosed in the crosscuts and drifts completed since the study by Pardee and Schrader. The field

examination confirmed the conclusions of the pre-examination analysis of the application. These conclusions were: (1) the mineralized streaks in the Upper and Main Tunnel levels do not warrant additional development on these levels, (2) ore mined to date was derived from near-surface deposits, and (3) projections of the granite-limestone contact cannot be made with any degree of certainty.

The field examination revealed that bulldozer trenching is perhaps not the best method to explore the surface of this type of deposit. The hard, silicified rocks have a rough, irregular surface which cannot be uniformly exposed with a bulldozer blade.

There are numerous pits and shallow adits on the western portions of the two claims which are not shown on the Applicant's maps. These workings disclosed no new information that would be useful for exploration.

Three old shafts in the southern portion of Coffee No. 2 claim and one in the northern portion of Coffee No. 1 claim have small waste dumps. This suggests that much of the material mined was ore and was shipped. These shafts probably date from the earliest mining activity on the property. The worn path of a horse whim hoist set-up is visible beside the shaft on Coffee No. 1 claim.

The extent of workings from these old shafts could not be determined because they were inaccessible. The wall rocks are firm but there were no timbers or ladders available. A vein at the collar of the shaft on Coffee No. 1 claim was one foot wide and appeared to be 4 to 5 feet wide at a depth of 10 to 15 feet. Green stains and yellow spots were noted in the quartz vein. Veins noted near the collars of the other shafts ranged in width from 6 to 15 inches.

EXPLORATION POSSIBILITIES

The record of ore shipments shows that in 1918, 1922, 1924, and 1927 about 180 tons of ore assaying more than 100 ounces silver per ton was shipped, probably in the period when these shafts were worked. In response to the field examiner's query whether the source of the better grade ore shipments could be determined, Mr. Peuse replied by letter on July 2, 1965, as follows:

"After talking with Mr. Bob Maras I find, Tony Maras did mine some of the real hi-grade out of the two shafts on top of the hill, also I was told before this that James Coffey took out some real hi-grade shipments from the incline shaft which is one of the real early day operations; going $500.00 per ton, but I couldn't find any records of this at the A.S. & R. smelter, however it may have had another name or else shipped elsewhere."

In view of Mr. Feura's letter, perhaps a modest program of exploration is warranted in the interval of 400 feet between the two southern shafts. Apparently this has not been tested, although the extent of present workings from the shafts is unknown. Possible methods of testing this area would be to extend present workings from existing shafts or to crosscut or drill into the area from the hillside below the collars of the shafts. The horizontal distance necessary to intersect the vein in the shaft on the Coffee No. 1 claim at a depth of 50 to 60 feet is between 125 and 140 feet.

These methods of exploration were discussed with Mr. Feura in the event an OME project was justified by the information he might be able to supply later concerning the source of the high-grade ore shipments. Perhaps this discussion with Mr. Feura will encourage him to undertake this exploration entirely with the Applicant's funds. A crosscut as suggested above would cost $5,000.00 to $6,000.00, a sum which the Applicant should have on hand to qualify for the proposal already submitted to OME.

The facts suggest that the ore shoots may be small but high grade. The close spacing of three of the shafts suggests that they were developed on small pockets of ore. The shallow depth and short strike length of minable ore in the main workings support this suggestion.

The record of production submitted with the application indicates infrequent, small-lot shipments of high-grade ore. This suggests extraction of small, rich pockets of ore.

Harold Kirkemo

Harold Kirkemo

HKirkemo/mm
cc: D. H. Maclaren (2)
USGS (SRO)
Kirkemo

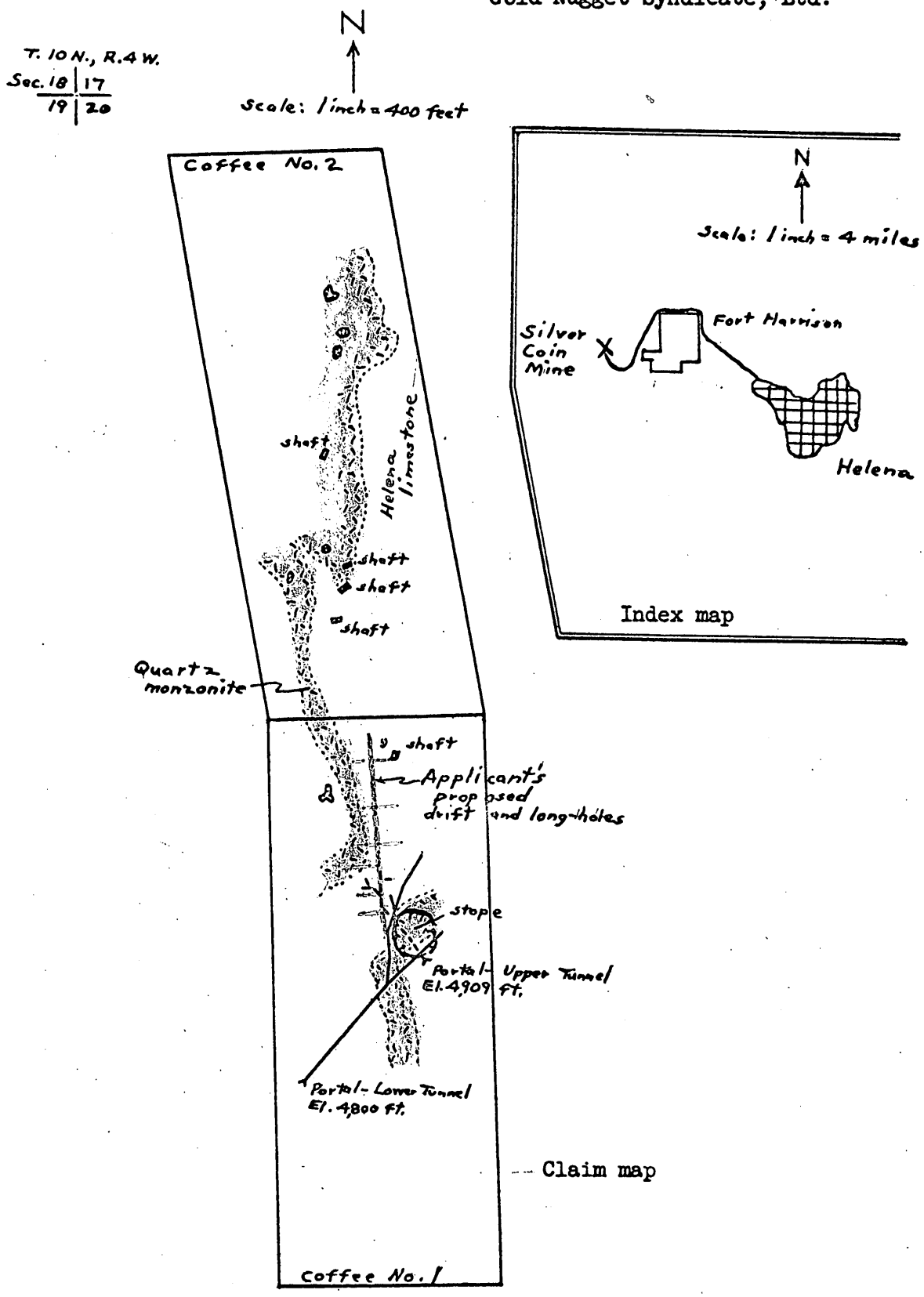
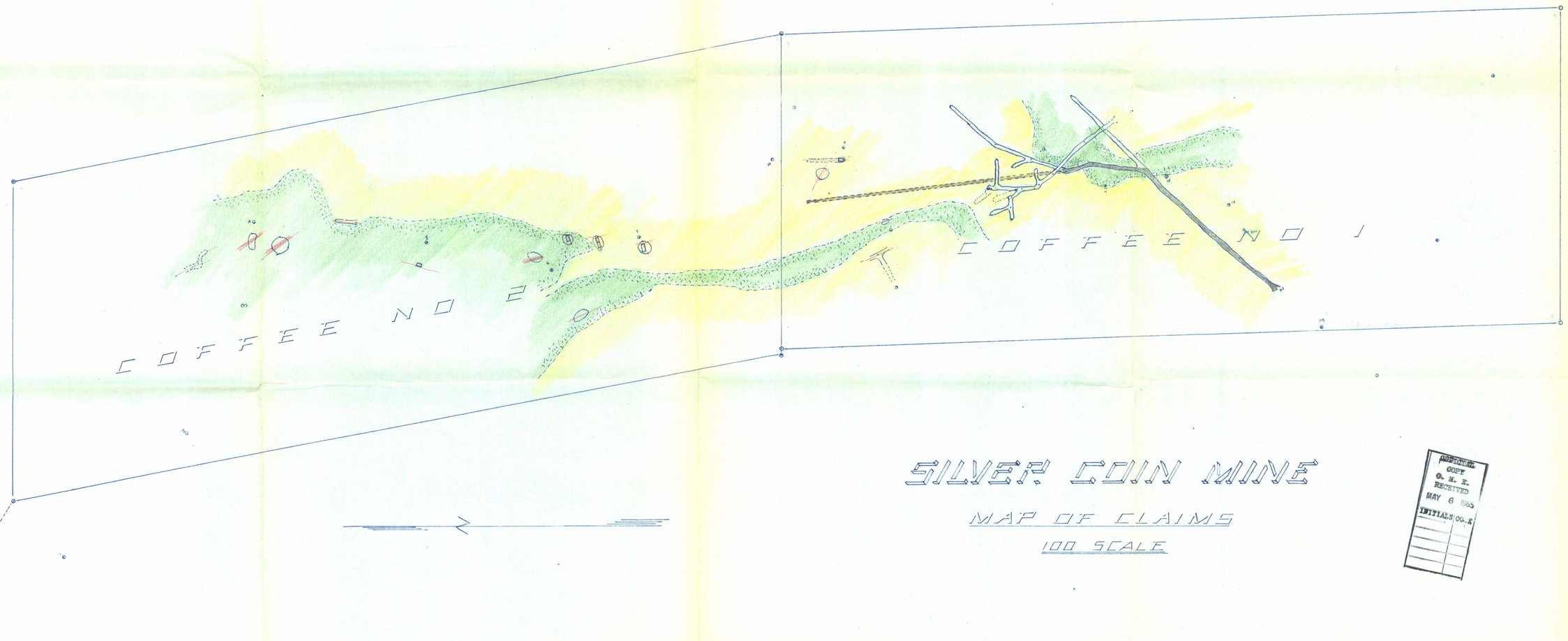


Figure 1. Index map and claim map showing mine workings, geology, and Applicant's proposed exploration program, Silver Coin Mine, Lewis and Clark County, Montana.

LEGEND

- LIMESTONE VARIATIONS
- QUARTZ MONZONITE PORPHRY
- APPROXIMATE CONTACT
- MINERAL & MINERALIZED STRUCTURE
- PROPOSED EXPLORATION
- PROPOSED REHABILITATION

SEC. 20 - T 10 N - R 4 W



SILVER COIN MINE

MAP OF CLAIMS

100 SCALE

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SILVER COIN MINE

PLAN MAP

50 SCALE

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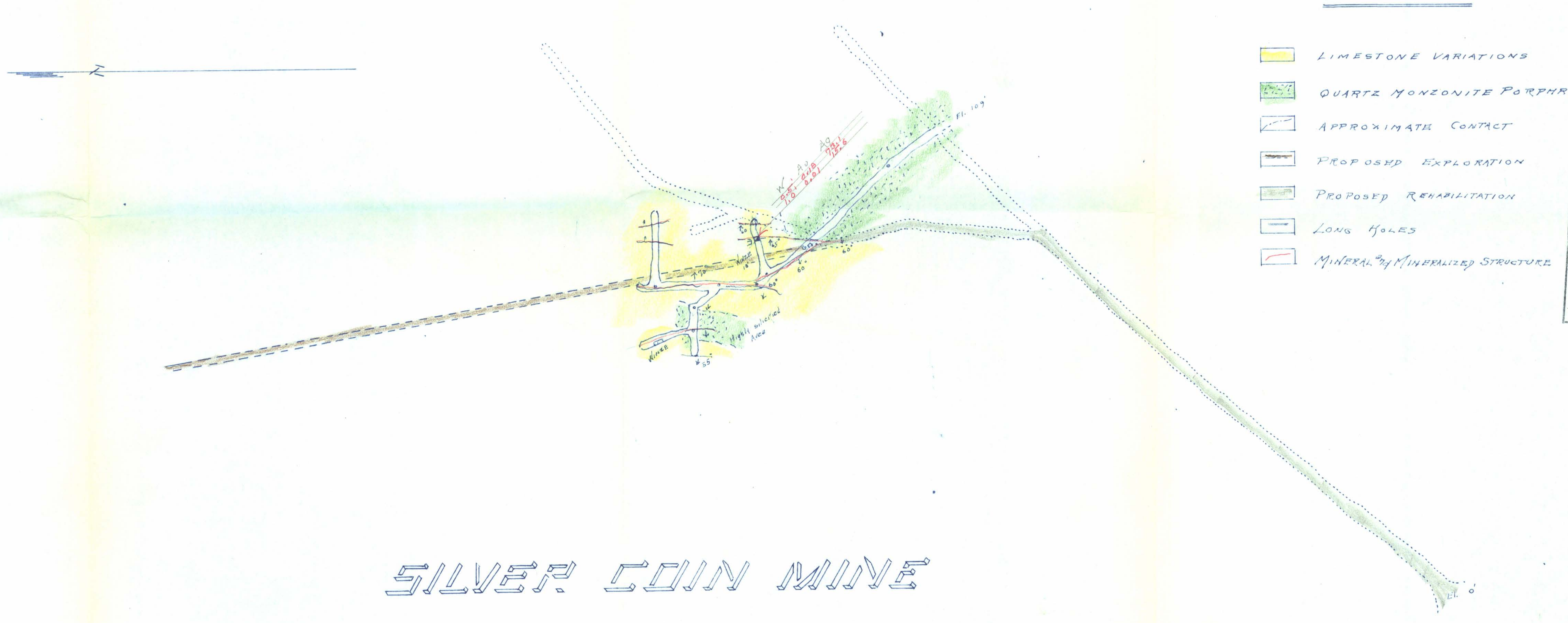

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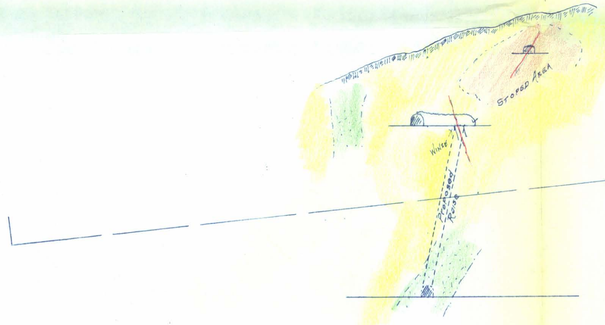
SILVER COIN MINE

UNDERGROUND WORKINGS

UPPER TUNNEL

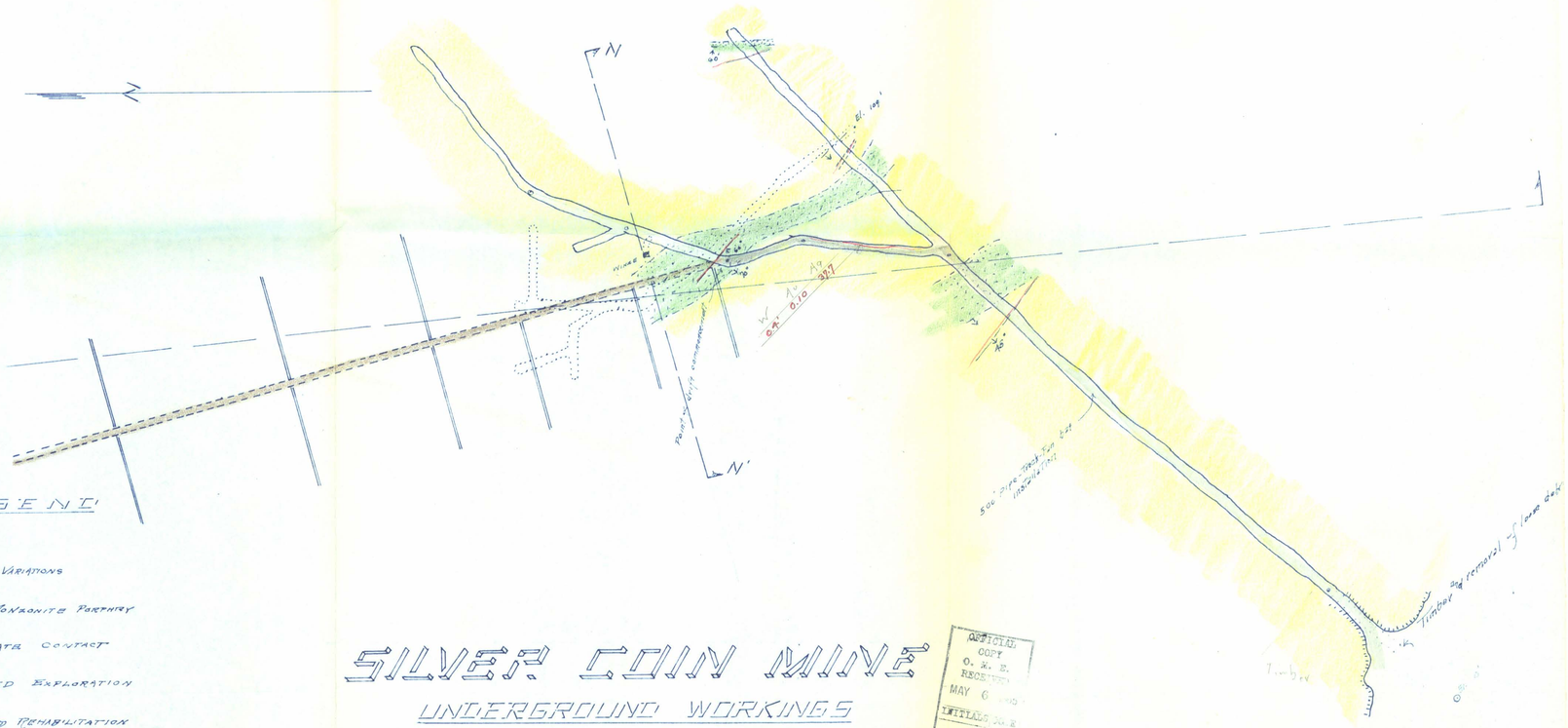
50 SCALE



SECTION THRU N-N'

LEGEND

- LIMESTONE VARIATIONS
- QUARTZ MONZONITE PORPHYRY
- APPROXIMATE CONTACT
- PROPOSED EXPLORATION
- PROPOSED REHABILITATION
- LONG HOLES - APPROXIMATE LOCATION
- MINERAL & MINERALIZED STRUCTURE



SILVER COIN MINE

UNDERGROUND WORKINGS

MAIN TUNNEL

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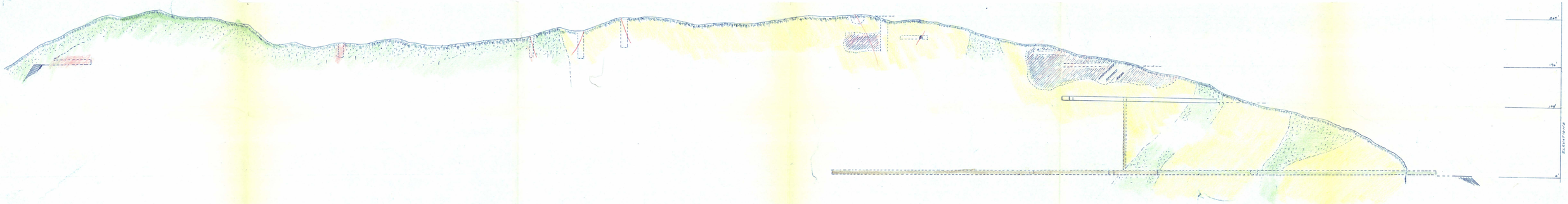

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- PROPOSED REHABILITATION
- MINERAL & MINERALIZED STRUCTURE

SILVER COIN MINE

VERTICAL LONG SECTION

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