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BANNER COORDINATES
4700N , 5000E

N-50°W

DDH 35
Proj. 38' N-40-E

DAISY SHAFT

SURFACE

Elevation Shaft Collar: 3368' (Approx)

0

ls

Gc

Some Garn.

Gc

ls

Slt

100 Level

DDH 38
Proj 26'
S-40-W

ls

ORE ZONE

Ca Si R

ls

ls

Slt

Slt

215 Level

Very gradational Contact

Gc and chl

ls

ls

Slt

330 Level

ORE ZONE

ls

ls

ls

430 Level

Projection from 330 level

ls, shale, and some Quartzite

Granite

Granite Breccia ls, with hornblend in linear structure

Siliceous breccia

Granite

EXPLANATION

ls	Black limestone
Gc	Garnet - Clay (Garnet Hornfels)
Ca Si R	Lime silicate rock (Diopside Hornfels)
Chl	Chlorite
Slt	Siltstone
Sulfide / Oxide	Ore

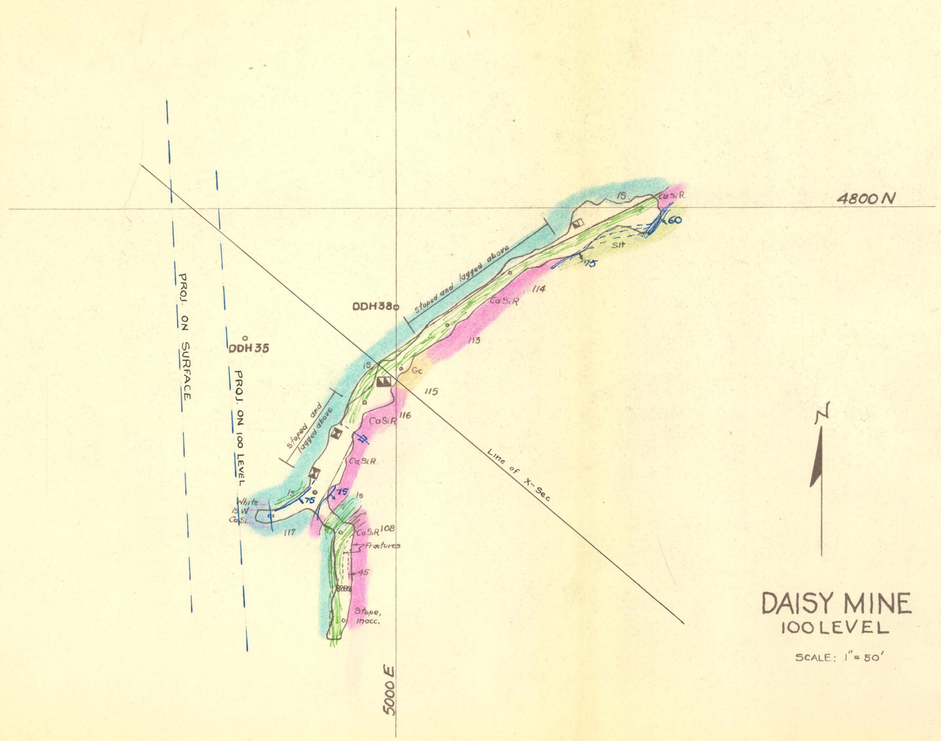
CYPRUS MINES CORPORATION
TUCSON, ARIZONA

DAISY MINE

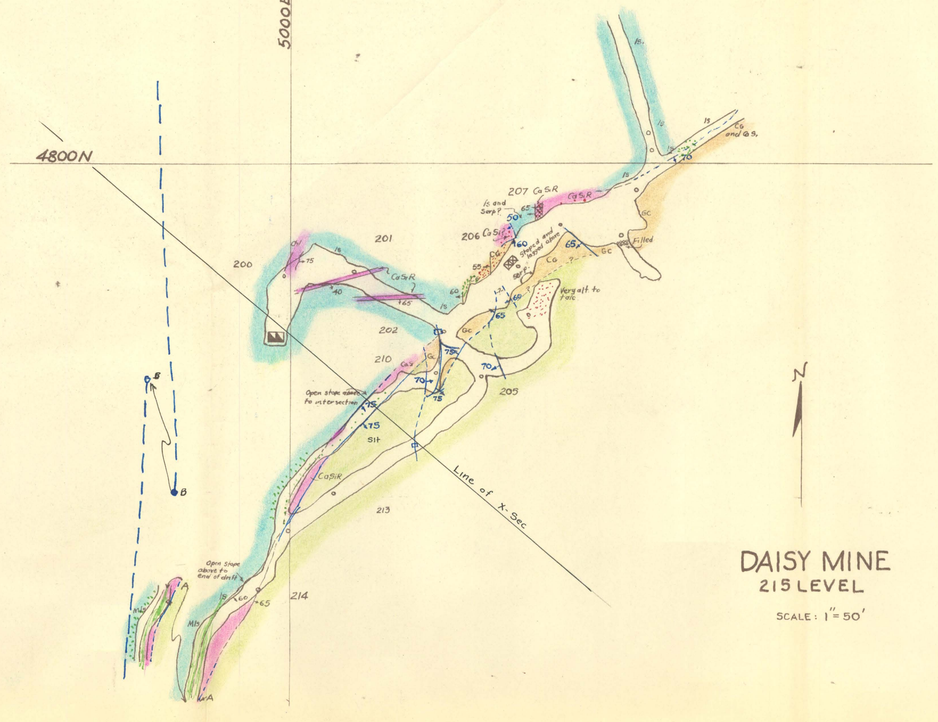
GEOLOGIC SECTION N-50°-W
THROUGH COORD. 4700N, 5000 E
Looking Northeast

SCALE: 1" = 50'
JANUARY 1955
GEOLOGY BY: JEK

PC 30



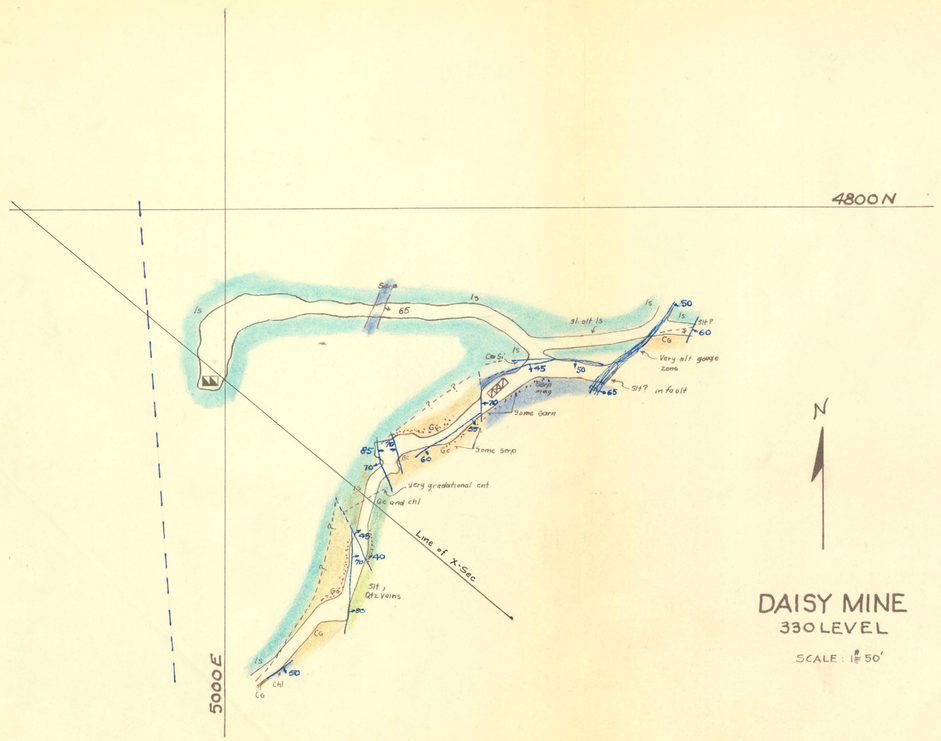
DAISY MINE
100 LEVEL
SCALE: 1" = 50'



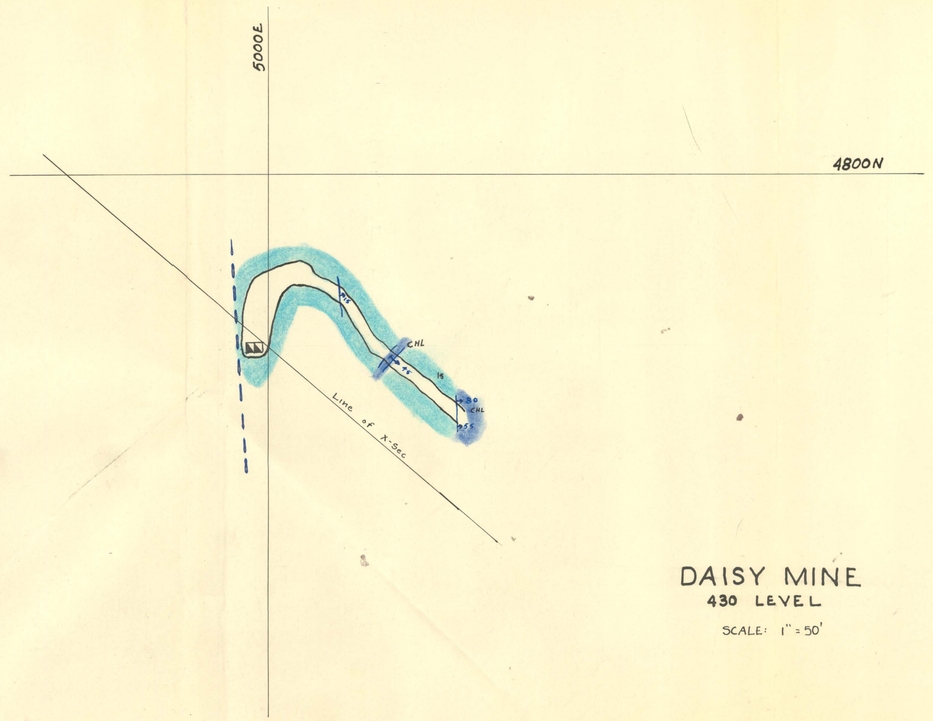
DAISY MINE
215 LEVEL
SCALE: 1" = 50'

EXPLANATION

- Is / Mls — Black limestone / White marble
- Gc / Cg — Garnet-Clay / Clay-garnet } Garnet Hornfels
- CaSiR — Lime silicate rock } Diopside Hornfels
- Serp / Chl — Serpentine / Chlorite
- Slt — Siltstone
- Sulfide / Oxide } Ore
- Fault
- Contact



DAISY MINE
330 LEVEL
SCALE: 1" = 50'



DAISY MINE
430 LEVEL
SCALE: 1" = 50'

CYPRUS MINES CORPORATION
TUCSON, ARIZONA

DAISY MINE
GEOLOGIC MAPS

SCALE: 1" = 50'
JANUARY 1955
GEOLOGY BY JEK

PB 8

February 23, 1955

Mr. K. K. Welker
Cyprus Mines Corporation
1206 Pacific Mutual Building
523 West 6th Street
Los Angeles 14, California

Dear Mr. Welker:

According to your request, I have here summarized the geology of the Daisy Mine, Pima County, Arizona. The following report is the result of several days work, carried on intermittently during December of 1954 and January of 1955. Accompanying this report is an underground geological map and cross section.

Geology of the Daisy Mine

Introduction: The Daisy Mine is located on claims belonging to the Banner Mining Company and adjoins the Pima property on its west boundary. The Daisy Shaft is located about 1450 feet N. 87 degrees W. from the Pima Shaft.

The Daisy Mine is developed by a vertical shaft 400 feet deep with four levels. Drifts and crosscuts total about 2000 feet.

Geology:

Rocks: The rocks of the Daisy mine may be grouped within three main types: (1) pyroclastic, (2) silicated limestone, and (3) unaltered limestone. Ore and gangue minerals are listed in Table 1.

Pyroclastic: The pyroclastic rock is a moderately soft, light brown, siliceous - appearing rock with conspicuous jointing in several directions. Stratigraphically it overlies the limestone zone. On the geologic map it is termed siltstone, which was the field name used during mapping. Subsequent microscopic work by Dr. Campbell indicates it to be a very fine-grained rhyolitic tuff. In general appearance the pyroclastic of the Daisy Mine is very similar to the hanging wall pyroclastic of the Pima Mine.

Silicated limestone: The host rock for the Daisy ore body is an altered limestone, with typical lime silicate minerals. The types distinguished are very similar to the various hornfels of the Pima Mine. They have been mapped as clay-garnet and garnet-clay, lime-silicate rock, and chlorite and serpentine rock. The clay-garnet

rock is the same as the garnet hornfels of the Pima Mine, and the lime silicate rock the same as the diopside hornfels. The chlorite and serpentine rocks, unlike the "serpentine rock" (now termed tremolite hornfels) of the Pima Mine, contain practically no magnetite. The only noticeable amount of magnetite occurs on the 350 level drift near the main crosscut. Crushed fragment determination showed one chlorite rock to contain calcite and chlorite, and possibly a small amount of serpentine. The distinction between serpentine rock and chlorite rock was based on a megoscopic determination of chlorite and serpentine, and is probably not completely reliable inall cases.

Unaltered limestone: The footwall of the mineralized zone is a black, massive limestone, which is lithologically similar to the Permian Snyder Hill limestone. Thin bands of silicate material occur within the unaltered limestone. The contact between the unaltered limestone and the silicated ore zone is generally sharp; the only exception noted occuring on the 350 level in the drift to the southwest.

On the 350 level the garnet and chlorite rocks appear to occur in "bands", similar to their occurance in the Pima Mine, but no definite relations were determined.

Structure: The structural trend of the formations is best shown by the pyroclastic-silicated limestone contact. Parallel to this contact are many small faults in the silicated zone. The structual trend is best described by referring to the geological map. It will be noted that this structure bends from a northeast to a more easterly direction. Numerous cross faults produce small offsets in the ore zone.

The pyroclastic rock is in fault contact with the limestone series, but the amount of displacement is unknown. Where exposed in the 215 level crosscut, the contact is a very thin seam of gauge, and does not appear to have undergone a large movement.

To the west of the mine workings a north trending fault is exposed on the surface, and has been penetrated by two diamond drill holes. As established from the drill holes, the dip is about 80 degrees to the east. This fault separates the Permian Manzano group on the west and the Permian Shyder Hill (?) limestone on the east.

Ore Control: The principal ore control is the pyroclastic formation. The silicated limestone and the ore form a narrow band 10 to 25 feet wide adjacent to the overlying pyroclastic unit. Within this altered zone the ore shoots may be controlled by other features, such as cross fractures, but this was not established. The best sulfide ore appears to occur on the 215 level, but this is largely stoped out. All of the ore on the 100 level is oxidized,

and has been stoped nearly to the surface. The ore southwest of the main crosscut on the 215 level is oxidized, and stoping had begun in January. The ore on the 330 level is all sulfide, but appears very spotty. The ore zone on the 430 level had not been reached at the time of my last visit.

Extension of ore: The extension of the ore in depth is problematical. The only comment possible is to note that the ore on the 330 level seems to be more spotty than that on the 215 level. The lateral extent of the ore has not been determined. To the southwest, the ore zone approaches the north-south fault mentioned above. This fault is mineralized in places as shown by old workings to the north, and its intersection with the Daisy ore zone would probably be the best area for lateral exploration.

Respectfully,

John E. Kinnison

JEK:jm
encl.

TABLE 1

Sulfide Minerals:

Primary:
- Chalcopyrite
- Pyrite

Secondary:
- Chalcocite (Not common)

Oxidized Minerals:

- Chrysocolla
- Malachite (Not common)
- Tenorite
- Melaconite (This name is used by Banner geologists for a brown copper bearing mineral which looks like goethite)
- Limonite
- Hematite

Gangue Minerals:

Lime Silicate Zone:
- Garnet
- Diopside?
- Wollastonite?? (Not common)
- Chlorite
- Serpentine
- Asbestos(probably serpentine)
- Talc
- Quartz (Not abundant)
- Magnetite(Not Common)

Pyroclastic formation:

- Talc (One occurrance; 215 level. Pyro. intensly altered to talc with some sulfide mineralization.)