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01/03/95

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: COPPER CHIEF MINE

ALTERNATE NAMES:
DARLING
MOUNTAIN CHIEF
UNCLE SAM

LA PAZ COUNTY MILS NUMBER: 112

LOCATION: TOWNSHIP 5 N RANGE 20 W SECTION 33 QUARTER NE
LATITUDE: N 33DEG 44MIN 15SEC LONGITUDE: W 114DEG 19MIN 59SEC
TOPO MAP NAME: MIDDLE CAMP MTN - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
TUNGSTEN
COPPER
GOLD LODE
STONE MARBLE
STONE EPIDOTE
CALCIUM MARBLE

BIBLIOGRAPHY:
ADMMR COPPER CHIEF MINE FILE
DALE, V.B., 1959, TUNGSTEN DPSTS OF YUMA, MARICOPA, PINAL, AND GRAHAM COUNTIES, ARIZ: USBM RPT OF INV, RI 5516, P 20,21,68
KEITH, STANTON B., 1978, INDX OF MINING PROP IN YUMA COUNTY, AZ: AZBM BULL. 192, P 159

PRELIMINARY FIELD REPORT ON THE

DARLING MINE

YUMA COUNTY, ARIZONA

BY: G. W. Corfield, Mining Engineer, P.E.

TABLE OF CONTENTS

Letter of Transmittal

Location

Topography & Climate

History

Geology

Mineralogy

Analysis of Property

Recommendations and Conclusions

Claim Survey Map

LOCATION

The Darling Mine, which is located in Sections 28 and 33, Township 5N, Range 20W, SRB&M, Yuma County, Arizona, currently is owned by the "Rothco Mines" company. This property consists of five patented claims, the Copper Chief Group, Uncle Sam No. 1 and nine unpatented claims and lies approximately 11 miles Northwest of Quartzite, Arizona. The patent was on U.S. Mineral Survey 4019. The road to the property is passable at this time.

TOPOGRAPHY

This property lies in the Dome Rock Mountain range at an elevation of about 950 feet above sea level.

The area is characterized by typical desert topography with scant rainfall and sparse vegetation consisting mostly of a few cactus, greasewood bushes, mesquite and palo verde trees which are mostly in or near the washes. Summer daytime temperatures are high with very low humidity.

The Dome Rock Mountains in this area consist mainly of metamorphic rocks, schists, limestone, (marblelized) and quartzite. These mountains are near locations of considerable intrusive activity.

The rugged dry washes indicate the presence of severe thunderstorm activity at times, mostly in the late summer.

HISTORY

Not much is available on the history of this property except that it apparently was first explored as a copper prospect.

There are several iron outcroppings on the property and since some copper stain is visible from time to time, these may have been mistaken for a gossan. Since a deep shaft was sunk to intersect one of these and its limestone contact at the water level, prior management may have been seeking a secondary enrichment copper deposit of the "Mountain City," Nevada type. However, since no quantity of copper was ever encountered, the property was abandoned.

It was later picked up at a tax sale by Mr. Joe Traver who later sold out to the present owners. During this time some scheelite was mined, however, by people who did not realize that the property was patented. A small shipment of ore placered out of tactite breccia ran 73.69% WO_3. This was sold to the Pine Creek Mill of the Union Carbide Nuclear Corporation at Bishop, California in 1955. However, this shipment was for only 177 pounds.

GEOLOGY

The area involving these claims consists of an uplift of metamorphic rocks chiefly marblelized limestone, sericite or micaceous schist and quartzite. A fault about the schist-limestone contact has been

mineralized with alteration in some locations penetrating deeply into the limestone and to a lesser degree, the schist.

This contact strikes N 50° W and dips about 40° north. The contact line is predominated by the tactite type occurrence with lenses of massive epidote, a little garnet and magnetite. Very little quartz is noted, but in some places massive calcite does occur.

Night prospecting with UV light shows the only economic mineral, scheelite, to be present along the strike of the contact at numerous locations. These occurrences appear to intensify in the vicinity of the magnetite depositions, but occur mostly in the epidote. Some cross faulting, which is pre-mineralization, shows biotite and scheelite which is locally rich. However, only one of these has been explored which shows the main contact intersecting a cross fault with biotite, massive epidote, some magnetite, and locally rich scheelite.

A 20 foot cut here discloses a shoot of scheelite-bearing epidote to be at least 12-15 feet wide and raking west but with undetermined length. This is controlled by a fault which strikes N 15° W and dips steeply SW.

MINERALOGY

The iron mineralization is primarily magnetite with no noticeable areas having any relics of sulfides. It is my opinion that while this looks somewhat like a gossan, it is not, but is simply a contact metamorphic implacement (tactite) with massive magnetite lenses in the epidote. The following minerals were identified:

1) Magnetite
2) Epidote (major)
3) Garnet (minor)
4) Malacite (traces only)
5) Calcite
6) Scheelite
7) Biotite
8) Sericite
9) Hematite
10) Siderite
11) Limonite

There are no indications of powellite or apitite. No lead, zinc or moly minerals were observed.

The scheelite occurs in fractures in the epipote and is sometimes in massive coarse crystals which are finer grained when occurring with the biotite and more coarse near the limestone contact or hanging wall.

Scheelite was the only tungsten mineral noted although iron tungstate may exist with the magnetite.

Some scheelite crystals, white or light straw color, were seen which were over ½" across. Considering its mineralogy, this ore should process easily in a simple all-gravity type plant.

ANALYSIS OF PROPERTY

Except for the indeterminate presence of an intrusive, this prospect is an almost classic occurrence of a contact-metamorphic replacement (tactite) deposit. The property has a long contact 5000' to 6000' which shows very little evidence of systematic prospecting for scheelite.

Some short shafts and pits were noted in the iron areas which contain some quartz with limonite and a few green copper stains. These appear to be in the schist rather than the limestone.

Since a deep shaft cut the limestone contact with epidote at about 485 feet, it appears that the contact replacement remains to this depth at least in one location. Samples in the dump from this formation reportedly show scheelite, although this author did not have time to closely examine this in his few hours stay on the property.

Considering the extent of the epipote and the length of contact, I feel that a systematic prospecting of this property is advisable.

While some of the scheelite is very good as noted above, the depth or length of this shoot is not known. Scheelite "lamps" strongly at many locations along the contact, but since much of this is buried its extent is not easily determined.

While one bureau of mines report states that "30,000 units of scheelite exist on the property" there is not enough development to prove this.

RECOMMENDATIONS AND CONCLUSIONS

To properly prospect this property will require resources well beyond that of the average small company. However, I do recommend the following approach to further evaluation:

1) By means of a D-8 class cat dozer, with ripper, repair the current roads to obtain better access to the property. This will require only 2 or 3 days.

2) Use the cat to uncover the outcrops along the strike for proper sampling, assaying and evaluation of ore shoots, if any.

3) Use the cat to extend the workings on the established ore shoot to determine its surface length.

4) Sample, wall to wall, all shoots which appear to warrant and assay for WO_3 - a composite of these can be submitted for a mill test later.

5) Descend the old deep shaft and study all structures cut, particularly the zone of epidote on the hanging wall. Sample and assay for WO_3.

6) Study all results of the sampling to see if further exploration and/or development is justified. This could include diamond drilling and drifting in the deep shaft as well as sinking on the known ore shoot.

The above program should place this property in a position for maximum exposure at minimum cost such that further development can be properly analyzed.

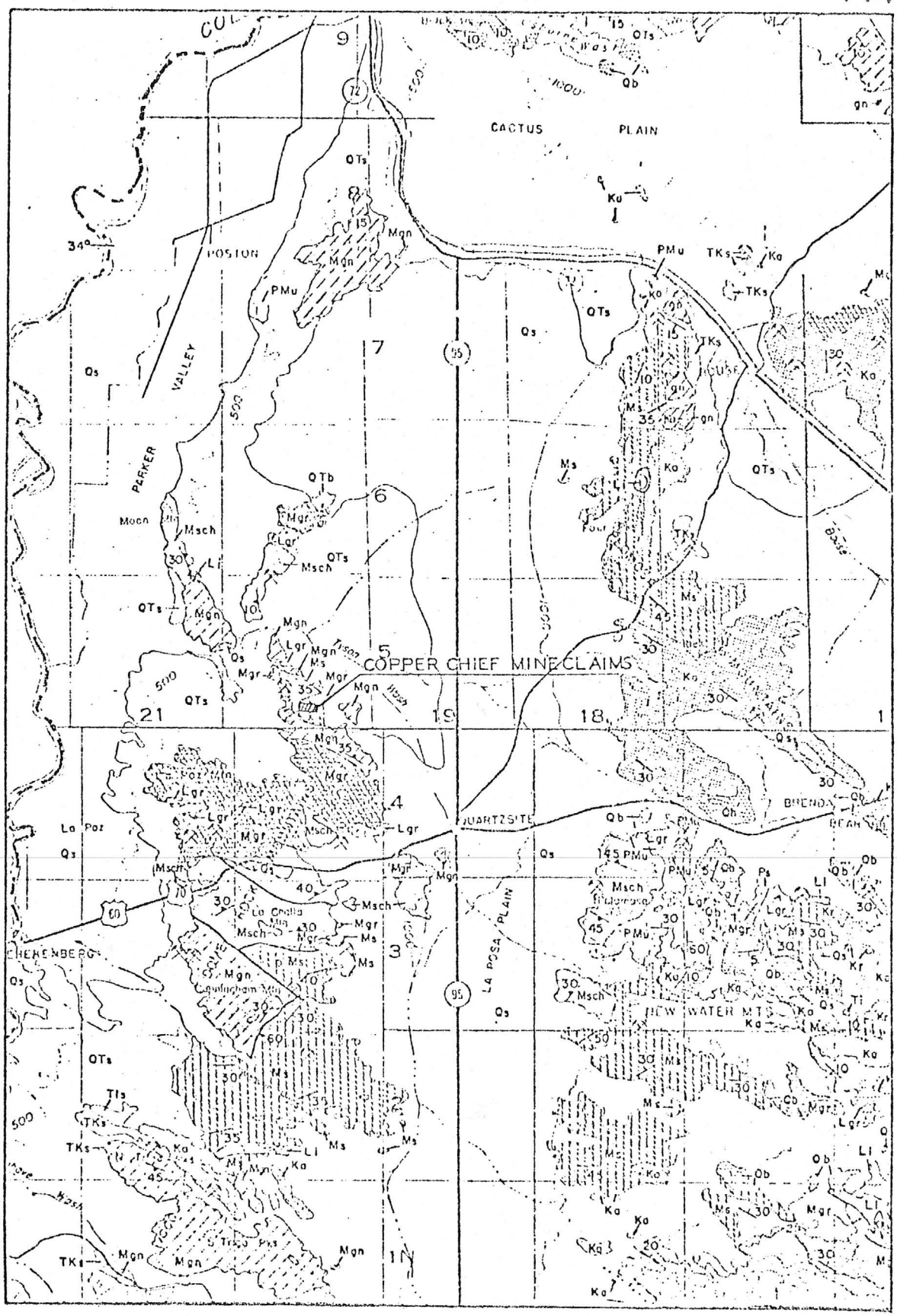
I feel that, with all facts considered, the Darling Mine does offer above average potential as a prospect to become a successful tungsten producer.

G. W. Corfield
Mining Engineer

Copper Chief Mine AKA Darling Mine
Quartzsite, Arizona

ROTBCO MINES
3016 W. Mercer Lane
Phoenix, AZ 85029
Ph. ~~942-4470~~ 934-6333

1979



LOCATION MAP

PORTION OF 1:375 000 SCALE GEOLOGIC MAP OF YUMA COUNTY, ARIZONA. ARIZONA BUREAU OF MINES.

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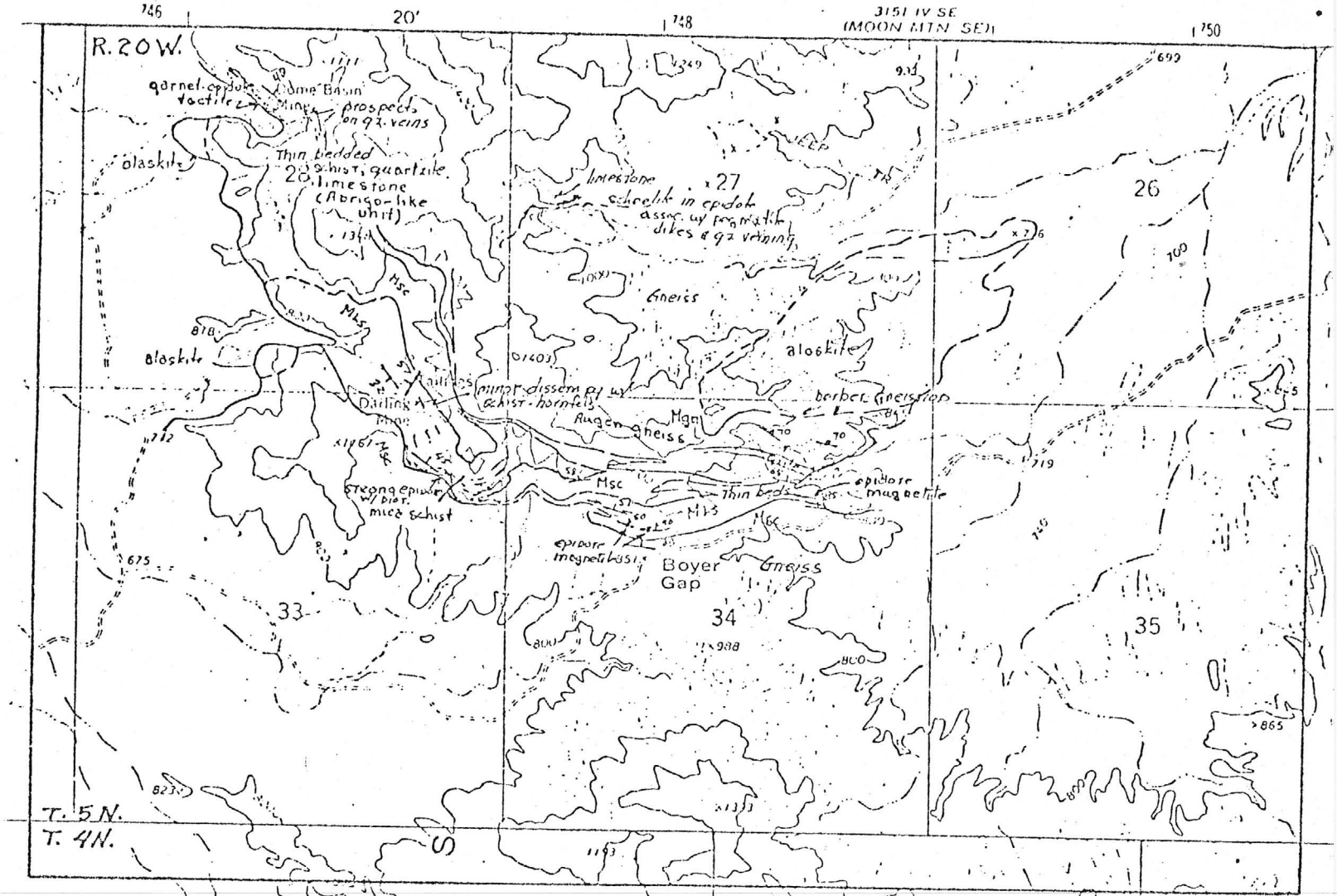

GEOLOGIC SKETCH MAP

COPPER CHIEF MINE PROPERTY

NORTHERN DOME ROCK MTNS.

YUMA COUNTY ARIZONA

SCALE: 1:24000

file no. 1866

TABLE 1

ASSAY RESULTS, COPPER CHIEF MINE PROPERTY,
DOME ROCK MOUNTAINS, ARIZONA

Sample No.	Cu(ppm)	Mo(ppm)	Pb(ppm)	Zn(ppm)	Au(ppm)	Ag(ppm)
6205	0.18%	15	90	130	-0.1	2
6206	0.22%	31	160	120	-0.1	10
6207	0.13%	40	120	90	-0.1	4
6208	40	18	20	50	-0.1	- 1
6209	10	2	60	80	-0.1	- 1
6210	0.15%	5	120	205	-0.1	1
6211	70	3	60	70	-0.1	1
6212	520	1	80	80	-0.1	2
6213	1.18%	5	100	135	0.2	33
6224	15000	< 2	180	185	---	22
6225	12500	2	60	195	---	350
6226	10000	2	50	215	---	11
6227	45	< 2	55	80	---	< 0.2
6228	270	8	45	85	---	0.2
6229	350	2	35	45	---	3.4
6230	35000	6	75	415	---	3.2
6231	100	< 2	50	65	---	0.2
6232	10	2	70	310	---	< 0.2

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TABLE 2

GEOCHEMICAL SAMPLE DESCRIPTION AND BRIEF LOCATION NOTATION, COPPER CHIEF MINE PROPERTY, DOME ROCK MOUNTAIN, ARIZONA

Sample No.	Description	Location
6205	Grab, schist with abundant magnetite content; dissem. limonite, minor Cuox.	Short incline, east main shafts. SE¼ NW¼ Sec 34 T5N R20W
6206	10' vertical sample - schist, magnetite, minor carbonate, epidote with trace Cuox.	Eastern main incline shaft, SE¼ NW¼ Sec 34 T5N R20W
6207	Grab from dump, schist-marble with abundant magnetite, minor Cuox.	Western main incline shaft SE¼NW¼ Sec 34 T5N R20W
6208	15' horizontal sample, phyllitic schist (sericite-chloride) with quartz veining, minor rusty colored limonite.	Northwest last station ~700' NW¼NW¼ Sec 34 T5N R20W
6209	Grab, white bull quartz in basal schist bed in marble.	Prospect west northwest 400' station 6207 NW¼ NW¼ Sec 34 T5N R20W
6210	Grab, epidote rich zone, some white quartz veining with coarse biotite.	Prospect, south Darling Mine NE¼ NE¼ Sec 33 T5N R20W
6211	Grab, dump material, fine-grained epidote-chlorite rock with minor dissem. pyrite.	Darling Mine NE¼ NE¼ Sec 33 T5N R20W
6212	Grab, dump - high pyrite in fine-grained chlorite-epidote rock.	Darling Mine NE¼ NE¼ Sec 33 T5N R20W
6213	Grab, stock pile (?) quartz-garnet-epidote skarn with spotty pyrite-chalcopyrite	Dome Basin Mine SE¼ NW¼ Sec 28 T5N R20W
6224	3' vertical sample, chlorite schist with epidote, quartz, magnetite, minor Cuox yellow to brown limonite	Prospect ~900' west of incline shafts SW¼ NW¼ Sec 34 T5N R20W
6225	1' chip sample quartz vein, parallel foliation, contains some yellow, brown and black limonite.	Same as 6224
6226	3' vertical sample chlorite schist, contains some epidote, magnetite.	Same as 6224

TABLE 2

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Sample No.	Description	Location
6227	Grab, biotite-feldspar schist with small pods epidote w/92-calc-biot.	400' northwest st.6224 NW¼ NW¼ Sec 34 T5N R20W
6228	Grab, epidote-magnetite lens in schist.	300' southwest st. 6224 SW¼ NW¼ Sec 34 T5N R20W
6229	Grab, sand from wash	Canyon west of st. 6224 SW¼ NW¼ Sec 34 T5N R20W
6230	Grab, small quartz vein with limonite and minor Cuox in alaskite intrusive.	In southeast corner SE¼ SE¼ Sec 27 T5N R20W
6231	Grab sample, quartz-biotite-calcite-feldspar pegmatite vein in epidote-schist rock.	Tunghill Mine, 1st stope to left of upper adite NW¼ SE¼ Sec 27 T5N R20W
6232	Grab sample, quartz-biotite-calcite-feldspar pegmatite in schist-marble.	At back adite NW¼ SE¼ Sec 27 T5N R20W

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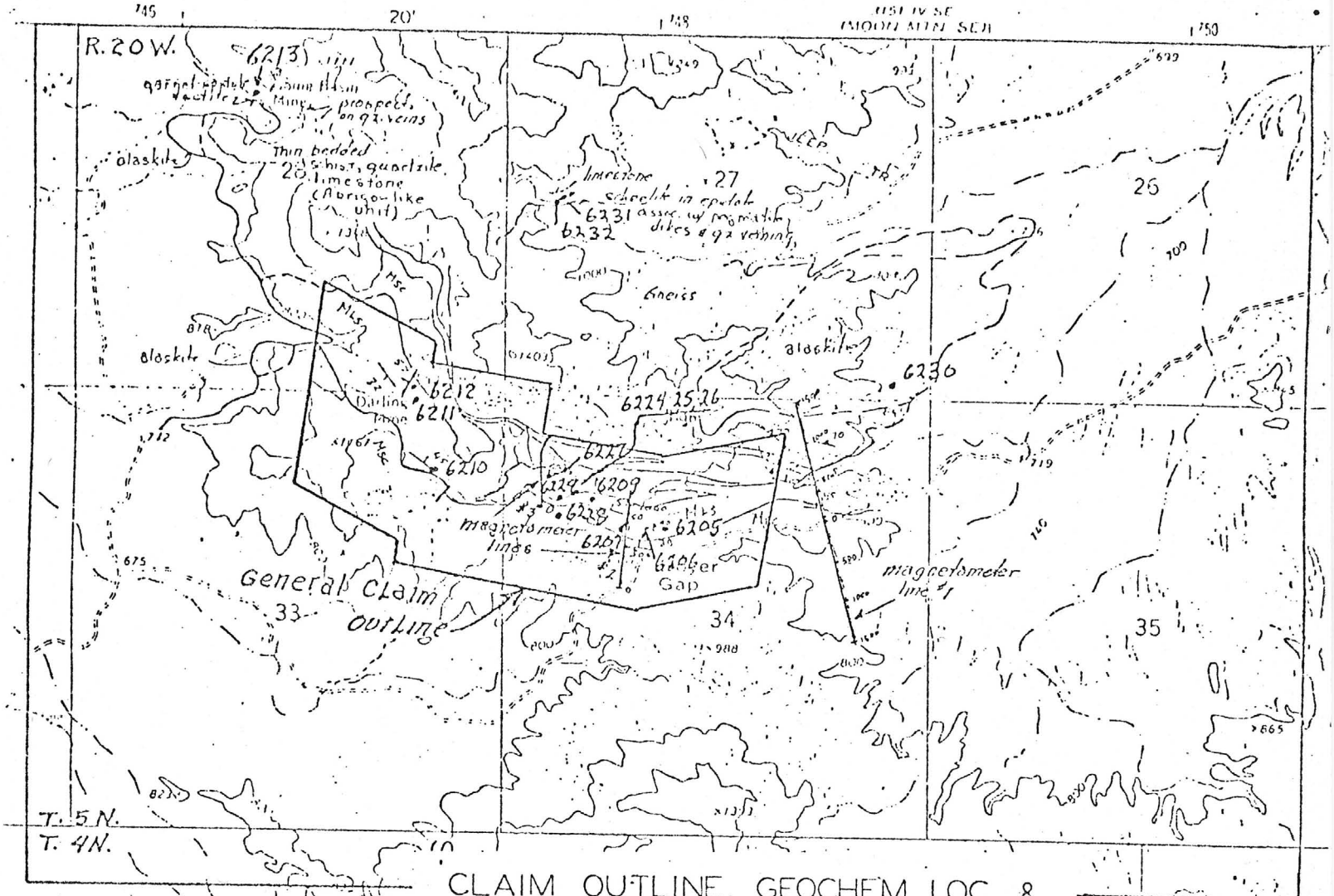

CLAIM OUTLINE, GEOCHEM LOC. & MAGNETOMETER LINES.

COPPER CHIEF MINE PROPERTY

NORTHERN DOME ROCK MTNS.

YUMA COUNTY ARIZONA

SCALE: 1:24000

file no. 1866

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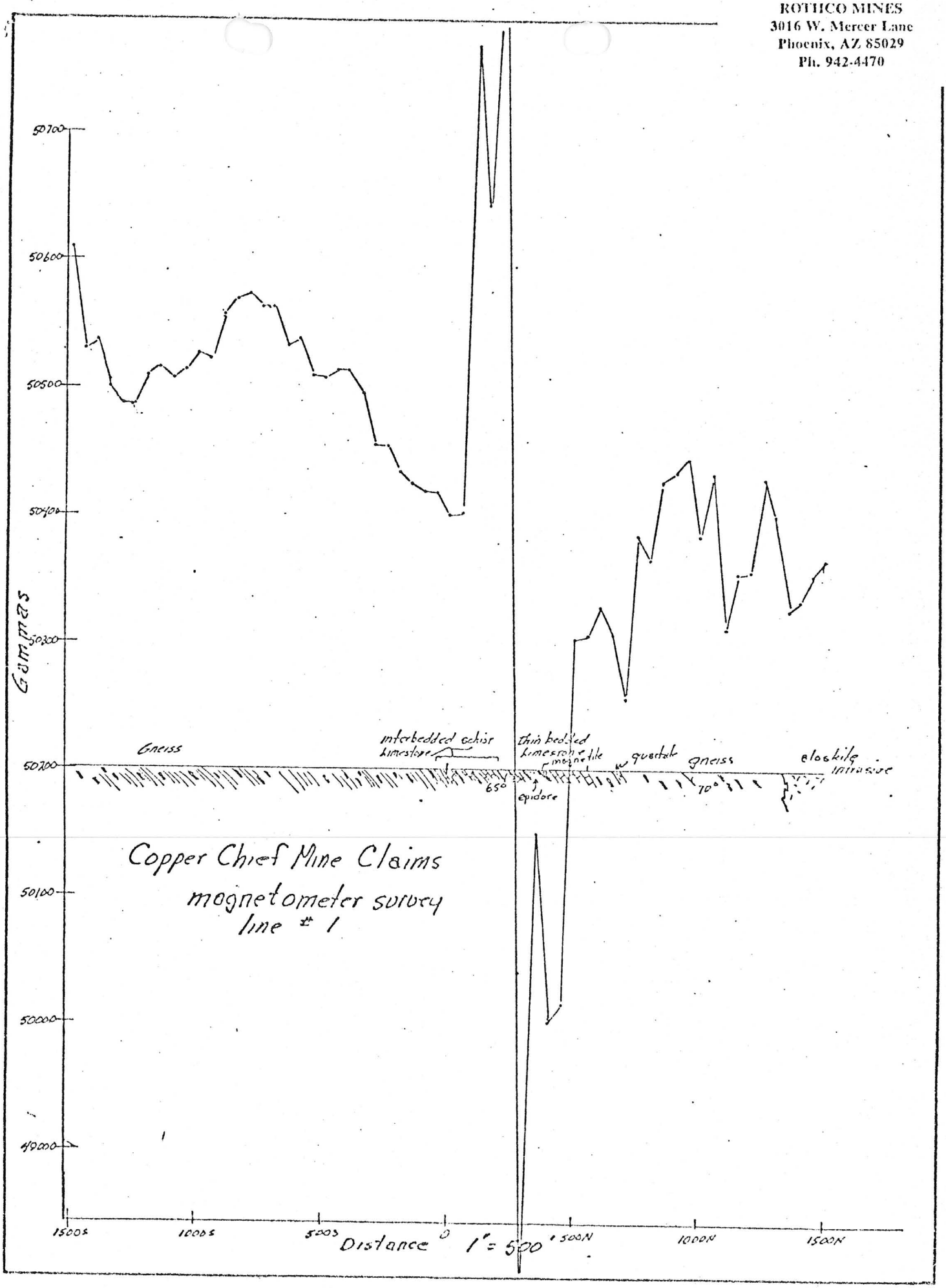

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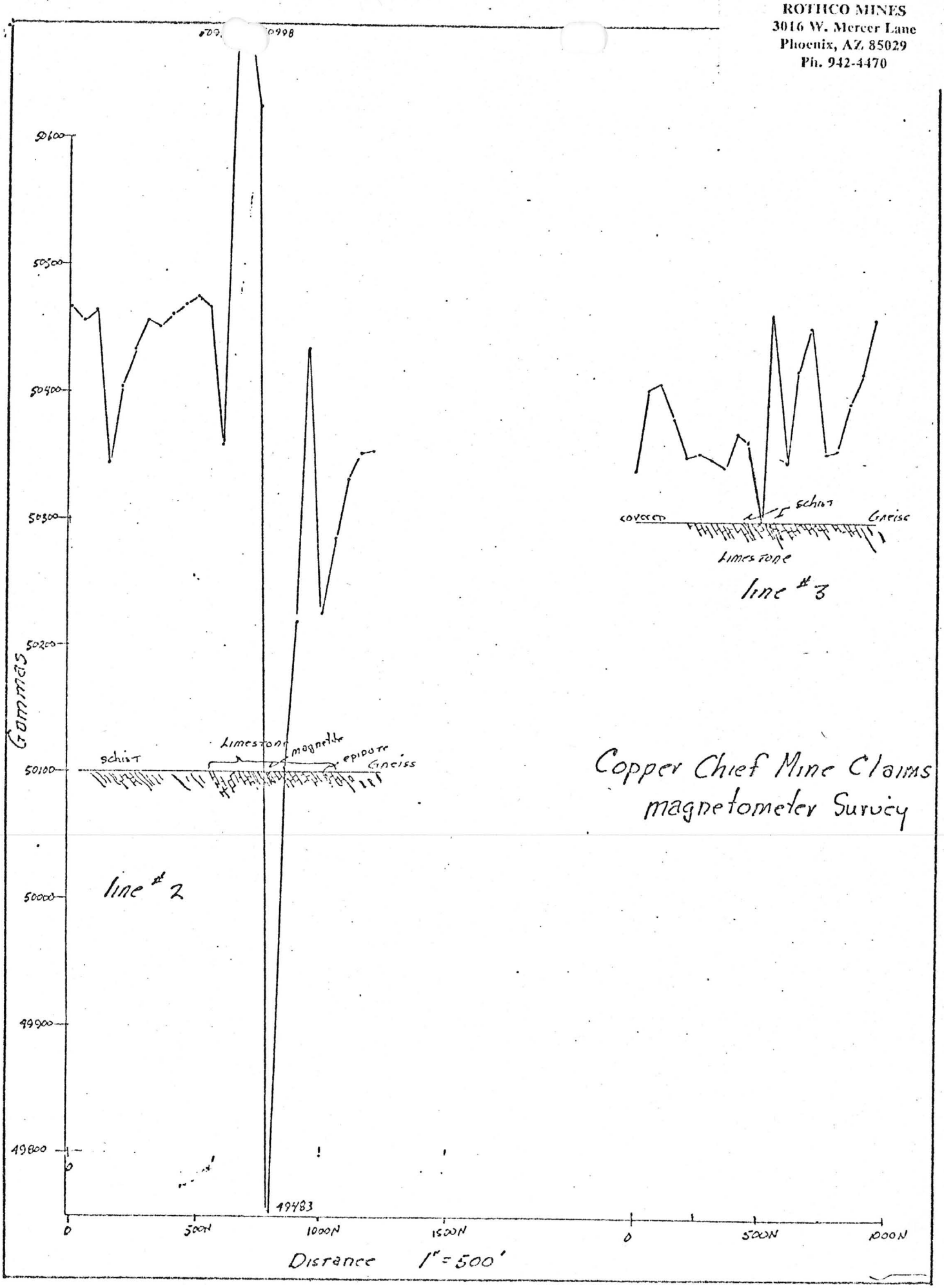


Copper Chief Mine Claims
magnetometer Survey

VIS9.32

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

VERBAL INFORMATION SUMMARY

1. Information from: Ken Hodgson
2. Company: Riken Resources
3. Address: P. O. Box 271, Chloride, AZ 86431
4. Phone: (602) 565-9545
5. Mine or property name: Copper Chief Mine
6. ADMMR Mine file: Copper Chief Mine
7. County: La Paz
8. MILS number: 112
9. Summary of information received, comments, etc:

Ken Hodgson reported he owns the Copper Chief Mine which he calls the Darling (Darling is an old AKA for the property). Historically he has promoted the property as a copper prospect and a tungsten prospect. He currently believes that its potential to produce decorative and dimension stone may be its highest use, especially since the best material occurs on patented portions of the property. In 1975 Ted Eyde, then of Superior Oil Company's Tucson mineral exploration office visited the property and reported that "...contains significant reserve of dimension and building stone as well as epidote-actinolite which could be valuable as crushed landscape rock."

Information for the mine file was provided.

Date: May 29, 1992 Engineer: Ken A. Phillips

COPPER CHIEF MINE

AKA Darling Mine
Uncle Sam

Yuma County
Oro Fino Mining District
T5N, R20W Sec. 33

John Rothermel, Phoenix, came in for information on the Copper Chief mine in Sec.33, T5N, R20W, north of Quartzsite. He said he had purchased the 5 patented claims. GW WR 7/21/75

John Rothermel, Phoenix, phoned to learn something of the Harvey Research & Mining Company, Palm Springs, California, who ran a biochem survey on his Darling property north to Quartzsite. I have no knowledge of this concern. GW WR 12/9/75

WR MG 1/9/78 Tony Lane of Tucson called to get information on the Copper Chief near Quartzsite, Yuma County. He said a small shipment of tungsten ore was made in 1955.

Samples here described from the mine listed below are are contained in the AzDMMR collection of reference samples.

Date Taken: 12/29/92
Date Logged: 10/04/93
Sample Number: 12/29/92-038

MINE: Darling Mine COPPER CHIEF MINE (file)
COUNTY: La Paz
LOCATION: Various locations from the patented claims.
DESCRIPTION: Green, white, and red decorative stone samples.
MATERIAL: Marble, limestone, jasper, chlorite.
COMMENTS: Samples were provided by Ken Hodgson as typical of material that can be produced from the claims for possible sale into the Southern California and Arizona landscape stone market.

G. MONTAGUE BUTLER
GEOLOGIST AND MINING ENGINEER
TUCSON, ARIZONA

Copper Chief Mines Co.
Yuma Co.
LA PAZ

REPORT ON THE PROPERTY

of the

COPPER CHIEF MINES COMPANY
Yuma County, Arizona.

Summary.

Extensive outcrops that contain much oxide of iron and some oxidized copper minerals exist on the property. This material is too low grade to constitute ore, and it is recognized that the value of the property depends upon the existence of a secondary sulphide enrichment at or near the ground water level which has been proven in the shaft already sunk to lie at a depth of 610 feet below the collar.

The conditions existing on the property are such as to indicate that there is not better than an even chance of the existence of such an enriched ore body, but, in view of the amount of money that has already been spent on the development of the property, it seems highly desirable to investigate all the possibilities before deciding that this money has been irretrievably lost, and it is recommended that a small cross-cut be driven southwesterly from the bottom of the shaft in order to ascertain definitely whether an enriched ore body does exist at the ground water level.

Purpose of this Report.

Pursuant to instructions received from Messrs. Ralph M. and Richard Darling, the writer has made no attempt to write a report on this property since fairly

comprehensive reports, written by Louis A. Dunham and J. W. Norton, are already available. The statements made in these reports are hereby corroborated as apparently true unless explicitly denied in this report. The writer was asked and has attempted to answer only the following question: "Is it probable that a secondary enrichment of copper will be encountered with deeper development?" It should be mentioned that only one trip over the property was made, and only first impressions are herein recorded. It is, therefore, possible that more intensive study might result in a revision of opinion as to some details, but it is believed that changes then made would be unimportant.

Geology of the Area.

The northern end of the Dome Rock Mountains consists essentially of schist and more or less metamorphosed limestone. The former is exposed not far above the bottom of the western slope of the range, and is overlaid by a great thickness of the limestone which evidently makes up most of this part of these mountains, altho it is reported that quartzite occurs on some of the higher elevations to the east. Altho no fossils were observed in the limestone, it is similar in character to material known to be of Carboniferous age elsewhere in the state, and may be tentatively so correlated. Its bedding planes are parallel to the schistosity of the underlying schist, and the two rocks appear to be conformable. Both limestone and schist now dip from 30 to 40 degrees to the northeast, and their strike is northwest-southeast.

The conditions just mentioned are described in both of the reports to which reference has been made, but the writers of these reports also refer to a dike of "greenstone", 10 to 200 feet wide and probably two miles long, which has intruded into the limestone at or near the limestone-schist

G. M. Butler

contact.

The writer could find no evidence of the presence of any considerable amount of igneous rock along this contact. It is true that epidote (a green silicate of calcium, aluminum, and iron) is extensively developed along this contact, as is a dense substance that it doubtless some form of hornfels, but everything seen indicates that the substances mentioned are merely highly metamorphosed clayey limestone. Elsewhere on the property, purer limestone beds have been metamorphosed to fine, white marble.

Ore Exposures.

In or closely associated with the highly metamorphosed limestone which has previously been considered "greenstone," and below in the schist, are extensive outcrops of iron oxides. This material is prevailingly black in color on the surface, but is often red, yellow, or brown at some slight depth, and may show these colors at the outcrop. At several points, shallow pits have been sunk in this material, and some carbonate and silicate of copper have been exposed in them. Particularly at points where the copper stains are most plentiful, the iron oxide is very porous, and the material there shows every indication of extreme alteration. Some gypsum (hydrous sulphate of lime) occurs in connection with these croppings.

The two engineers who previously reported on the property regarded this extensive development of iron oxide, which contains a little copper, as a typical "iron hat" such as does overlie extensive enrichments of copper where conditions are favorable, and they both unqualifiedly recommended deep development with the confident expectation that such an enrichment would be found. They stated frankly that no commercially valuable ore had yet been found, and that the value of the property depended entirely on the results secured from such deep development.

S. H. Butler

Results of Deep Development Work Completed.

Acting on the recommendations already mentioned, a shaft was sunk to a depth of 610 feet, at a point several hundred feet northeast of a prominent iron oxide outcrop which contained some oxidized copper minerals. The topography was such, however, that the collar of this shaft was considerably below this outcrop, and the ore zone was cut at a depth of about 250 feet. It was there still highly oxidized and it is important to note that it was in schist, altho not far from limestone. Crystals and veinlets of gypsum occur throughout this oxidized material.

The shaft was then continued down to a depth of 610 feet where water was encountered. It was originally intended to drift northeast from the bottom of the shaft with the expectation of cutting the ore body at the ground water level, but a further study of conditions in the shaft showed there there is a reversal of dip below the 280-foot level, and it was suspected that the ore zone might have straightened up in or near the shaft and then dipped down to the southwest. Accordingly, a crosscut was driven some distance to the southwest on the 420-foot level, and the ore zone, still in schist, was cut as expected.

While there is still much alteration of part of the ore zone on this level, large masses of unaltered primary hematite (ferric oxide) or magnetite (intermediate oxide of iron) are said to occur. Certainly specimens of both of these minerals, some of which contain primary pyrite, were collected there, but the air was so bad in the openings said to contain the primary iron oxides in quantity that it was considered too dangerous to remain there long enough to do more than glance hurriedly at the walls.

Lack of time made it impossible to study the problem sufficiently to explain the reversal of dip mentioned. It may be due to folding of which

-4-

B. M. Butler

no evidence was seen on the surface, to rotary faulting along an inclined fault plane, or to the existence of an unconformity. Regardless of its cause, there is no doubt but that the dip of the beds is reversed below the 280-foot level.

Conditions Bearing on Secondary Enrichment.

It is well known that rainwater, which contains oxygen and carbonic acid gas, falling upon and sinking into outcrops of sulphide minerals, will gradually convert them to oxides, carbonates, or other oxidized products. At the same time, if pyrite (bi-sulphide to iron) is present (as is nearly always the case in copper deposits), sulphuric acid and iron sulphate will form. These substances will attack and dissolve the copper sulphides, and, unless substances are present that cause the copper to precipitate at once in oxidized form, the dissolved sulphides of copper will tend to work downward to a point where the solutions become neutralized and the copper is forced to deposit as secondary sulphide. Most of the iron is then left behind as limonite (hydrous ferric oxide) or hematite, and some oxidized copper minerals practically always remain in the leached zone. Where there is a fixed ground water level at a reasonable distance below the surface, a secondary sulphide enrichment is apt to form at or slightly below this level.

Now there is one common substance that will immediately neutralize sulphuric acid and prevent the downward migration of solutions, and that substance is calcium carbonate or carbonate of lime. This mineral, known as calcite, is the principal constituent of limestones. If an ore body contains calcite or has limestone walls, it may be oxidized, but copper will not be leached therefrom and carried downward. If such an ore body originally

D. M. Butler

contained copper, all of this metal will remain in the oxidized portion, usually as carbonate or silicate, and it is useless to seek a secondary enrichment below.

Probability of Enrichment of Copper in the Deposit Under Consideration.

Everything indicates that the deposit originally, before oxidation, consisted of primary magnetite or hematite which contained more or less cupriferous (copper-bearing) pyrite and possibly some chalcopyrite (copper-iron sulphide). The percentage of copper present was probably very low. In spite of its low copper tenor, if all of the copper in large quantities of this material were thoroly leached out, carried down, and precipitated at the groundwater level, a relatively large and rich body of copper ore would be formed. In attempting to decide whether such a process has occurred in this deposit, it is evident that factors or conditions that are both favorable and unfavorable to it prevail, as follows:

Favorable Factors. 1. The deposit shows much porous iron oxide which proves that extensive oxidation has occurred. 2. The material certainly contained some copper since residual copper carbonate and silicate show in the oxidized material. 3. Some slight migration of copper-bearing solutions is positively known to be taking place now since efflorescences of copper sulphate crystals appear in some of the lower workings. 4. Absolutely no calcite was recognized in the oxidized portions of the ore body. 5. The ore body does not have limestone walls -- at least none were noted underground. It is in schist.

Unfavorable Factors. 1. There is a tremendous development of limestone east of the ore body. Even tho it may not form a wall or walls of the ore body, it appears likely that atmospheric waters, falling upon and seeping

R. M. Butler

down thru the lime, would take carbonate of lime into solution, and that these solutions may have mingled with the acid solutions descending down thru the ore bodies. If the two solutions did so mingle, the acid solutions would be neutralised, and downward migration of the copper would be prevented. There is no proof that solutions did so mingle, but the possibility must be recognised. 2. It is very unlikely that the gypsum noted was primary or was formed by the action of acid solutions on calcite. It appears probable that this gypsum was leached out of the limestone, and carried into and deposited in the ore body. If it were so deposited, there must have been an intermingling of solutions that would have prevented the downward migration of the copper. Again, there is no proof that the solutions intermingled, but the presence of gypsum strengthens the supposition that they may have done so. 3. None of the primary pyrite found on the 420-foot level has any secondary copper sulphide deposited upon it as is often the case where residual pyrite is found in the oxidised zone of a deposit underlaid by an enrichment.

The favorable and unfavorable features so completely counterbalance each other that it is foolish to hazard a prediction as to just what will be found at the ground water level. Taking everything into consideration, there seems to be about a 50-50 chance that an enrichment will be found.

Recommendations.

(If no development work had been done on the property, the writer should not hesitate to recommend its abandonment, since he does not regard the surface showings and conditions to be such as would justify the expenditure of a large amount of money in deep development. Deep development is so expensive that all the conditions should be favorable before it is undertaken, and the proximity of limestone must certainly be considered an unfavorable condition.)

In view(however) of the fact that a considerable sum of money has been

B. M. Butler

spent in equipping the property and sinking a fine, two-compartment shaft to a depth of 610 feet, it would seem desirable to test out all the possibilities before abandoning the enterprise, especially if such a test can be made at a moderate expense. Since there appears to be a fair chance that an enrichment may have been formed at or near the ground water level, the writer recommends that a crosscut be driven to the southwest, perpendicular to the strike of the beds, until the ore zone is encountered. No survey of the property was made, and the writer did not attempt to determine how far this crosscut must be driven, but Mr. Richard Darling stated that his computations showed that it would be about 800 feet long. This crosscut should be made as small as possible so as to reduce the expense. Of course it can later be enlarged if ore is encountered. Unless the shaft makes a great deal of water so that the expense of pumping will be high, the crosscut should be driven below the ground water level so as to increase the chances of striking an enriched ore body, rather than passing above such an ore body.

While it might be cheaper to ~~determine~~ ascertain the existence of an enriched ore body by drilling, the topographic conditions are such that the drill holes would have to be very long, and, being drilled across inclined strata, it is likely that they would deviate materially from the course desired, and that they would fail to penetrate the ore body if it exists.

Respectfully submitted,

G. M. Butler

May 23, 1930.

Los Angeles, Cal. Sept. 21, 1910.

Mr. Richard Darling,

Los Angeles, California.

Dear Sir:-

THE COPPER CHIEF GROUP, which was visited Agust 18, 1910, lies some six miles North West of Quartzsite and about 25 miles South West from Bouse, Arizona, a station on the Santa Fe Railroad, 396 miles from Los Angeles. Road from Bouse to the mine is fair and wagon freight should not exceed $5.00 per ton.

CLAIMS:

The five claims of the group are shown on the map accompanying this report. They were located by the present owners early in the present year and title is now vested in a close corporation.

TOPOGRAPHY:

The country in the neighborhood of the claims is mountainous, they lying in the Dome Rock Range on the Eastern flank of the Colorado River Valley, some 14 miles from the River. Claims lie on the side of the mountains in a broad low pass through the Range, the most inaccessible part of the property being only some 200 feet vertically above the pass; roads can be cheaply built to any part of the Group. Elevation is about 800 feet above sea level and the climate is favorable for out-door work all the year round.

GEOLOGY:

The geology of this part of the country is simple, beds of lime and shist have been tipped up till they have a dip of 30 degrees to the North East with strike about North West and South East. The mountain range thus shows a geological section of the country. In the neighborhood of the claims an immense stratum of marbilized lime overlies the schist, while a dyke of ten to two hundred feet wide and probably two miles long of greenish eruptive rock locially called greenstone has been forced up near the schist-lime contact. There is some evidence of faulting. In the neighborhood of this dyke, and extending for amile or more, are seen on the surface, outcrops of black iron of varying sizes as shown on the map. This iron is of great importance as the chances are it overlies valuable copper ore. The iron outcrops are not continuous on the surface, but their occurrence in connection with so strong a showing of metamorpline lime and in proximity to a porphry dyke would indicate a possibility of ore bodies below the surface of larger area than the iron outcrops.

ORE:

As is to be expected, in a deposit of this kind, no ore of commercial grade is to be found on the surface. In the shallow open cuts made in some of the irondeposits, especially at the east end of the property copper carbonates arefound in thin laminations in the iron. From such a sample taken from the shaft 10 feet deep on the Copper Chief No. 2 Claim I secured this assay:

% Copper----------1.3%

but the area of iron outcrops is large and the presence of copper has been demonstrated. The value of the property lies wholly in the chance of finding bodies of high grade ore below each of the iron outcrops, and the evidence that such bodies exist is wholly favorable. Any ore found will have an immediate market either at the smelter of the Clara Consolidated Copper Company, some 50 miles North, or at Humboldt, Arizona.

NEIGHBORING MINES.

The nearest important mines are the mines of the Clara Consolidated Copper Company, of which George Mitchell, is the controlling spirit. These properties, the nearest of which is some twelve miles North East, are in similar formation, are valuable, are producing high grade copper and form good evidence that valuable copper ore will be found in the Copper Chief Group.

SUPPLIES.

The nearest water is found in a well on the plain out of the limits of the mountains on "Tyson's Wash", some four miles East of the property. All necessary water can be secured here by means of additional wells which will not be expensive. The chances are that water will be found in the property at a depth of less than 300 feet.

Labor is plenty in the neighborhood, at a cost of $3.50 per day for miners, as has been demonstrated by the works of the Clara Consolidated properties and others in that country.

Timber, fuel and miscellaneous supplies must come from the Railroad at Bouse, which is convenient to both Los Angeles and Phoenix, Arizona, markets.

OPINION OF PROPERTY.

My opinion of this property is that it is a prospect ofexceptional merit and that a comparatively small amount of development work will prove it to be a valuable mine. The property is attractive for these reasons:-

1. It is accessible being only a few hours ride over fair road from Bouse, Arizona, thirteen hours by rail from Los Angeles.

2. No roads or expensive works must be undertaken before actual development work can start; the first dollar spent can go right into sinking on the property.

3. Cost of supplies and of work will be very reasonable.

4. Indications are that ore found will be immediately available for shipping, there being no necessity for expensive concentrating mills or reduction works, and such ore can be immediately marketed at Smelters within a few miles of the property.

5. Evidence of other mines in thecountry is that high grade copper ore will be found under the remarkably favorable iron outcrops present on all the claims of the Copper Chief Group.

In my judgment, $15,000 spent in actual work on the Group mostly in sinking a shaft to a depth of at least 300 feet on the Uncle Sam Claim would show that the property is well worthy of much more extensive development and equipment.

Very truly yours,

Signed_____

Louis A. Dunham.

Copper Chief Mines Company

Location of Property

The Copper Chief Mines Company's property is located about 12 miles north West of Quartzite and about 20 miles southwest of Bouse, Yuma County, Arizona. Bouse is a station on the California cutoff of the Atchison, Topeka and Santa Fe Railroad, 396 miles from Los Angeles, California.

Due west about 14 miles, the Colorado River cuts its way along the west flank of a broad flood plain. The mine is located in a low chain of mountains known as the Dome Rock Range rising about 500 to 600 feet above the valley level.

Area of Property

The original Copper Chief group consisted of five contiguous claims. These have been added to until at the present time there are 32 and a fraction claims covering about 640 acres comprised in a compact contiguous group.

Accessibility

An excellent desert road suitable for motor truck hauling the year round provides easy and convenient transportation to Bouse. At Bouse supplies are obtained direct from Los Angeles, California or Phoenix, Arizona.

Every part of the property has been linked with the main camp by good roads.

Geology

The geology of this section is simple. In the southern end of the property there is a mountain range with a northwest -- southeast strike or trend. This structure has been formed by the tilting up of the rocks until they dip to the northeast 30 to 45 degrees. This exposes on the southwest side a complete geological section. At the base lies what is probably a pre-Cambrian schist, a very old complex rock mass. Above

this is an immense stratum of limestone. Forcing its way up near the contact of the schist and limestone is a great eruptive dyke, said to be ten to two hundred feet wide and probably two miles long, composed of what is locally called greenstone.

The contact can be traced for nearly 6,000 feet across four claims.

Outcrops

Near the dyke and extending throughout the length of the contact there is an almost continuous outcropping of "black iron". This great iron gossan is spectacular and is of extreme importance in indicating the probability possibility of ore underneath especially along the limestone contact.

Ore Deposits

It is a decidedly encouraging feature that no ore of commercial grade has been found at the surface. As many as ten open cuts, shallow trenches or shafts have been made near the mineralized contact.

I have examined specimens of ore from these cuts especially from the short Incline shaft sunk on the contact. One of the most interesting features in connection with the minerals found in this area is the ominpresence of hematite (iron oxide) in the gossans on top the veins. In general this hematite is a hard compact variety having a dark red to black color. In places, however, it is soft and earthy.

In any but arid and hot regions this oxidation product of pyrite (iron sulphide) would be Limonite (Hydrous iron oxide). The vast quantity of hematite present in the region and its apparently universal distribution as an alteration of pyrite is indicative of very extensive oxidation.

Copper carbonates and most of the gangue minerals which are characteristic of limestone replacement deposits were found in the samples taken from the Coughlin shaft where the orebody was crossed at the 250 foot horizon.

done the real development of ore has been confined to the ground underlying an enormous iron gossan which on the surface is said to be about 200 feet by 100 feet found in an area of 500 feet North and South and 200 feet to 300 feet East and West over which iron shows very generally.

An incline shaft has been sunk near the contact from which good samples of carbonate ore have been taken all showing the intense oxidation. The ore occurs as a replacement in the limestone near the contact with the greenstone dyke.

Having proved the existence of ore a two compartment vertical shaft has been sunk on the opposite side of the mountain about 500 feet northeast. Where the incline shaft was sunk the ore body was dipping about 42 degrees. Accordingly as was to be expected at a depth of about 250 feet to 300 feet the ore was crossed in the Coughlin shaft. At this point the ore was about 20 feet across showing a width in the shaft of over 40 feet.

The shaft is being continued and is now over 600 feet deep. The purpose is to find the water level and then crosscut or tunnell to pick up the downward extension of the ore shoot. At this point the ore body should be of such size and richness as to warrant extraction and direct shipment to smelter.

Theory of Ore Enrichment

Because of the character of the residual gossan minerals it is within reason to expect a zone of enriched copper ore at or near the permanent water level. During the oxidation of a deposit where, as is the case here, one or more metals go into solution under conditions which permit migration, the metals commonly descend to the water level where they are precipitated as secondary and very rich sulphides. This process of enrichment is probably most thorough and accomplishes its most important results in deposits whose primary ore consisted in part of pyritic sulphides which upon oxidation yield solutions of sulphates and free

sulphuric acid. In passing through the limestone chemical action takes place and some of the copper is deposited in the form of blue and green carbonate and sulphates. The hematite or iron gossan at the surface is the final product of the oxidation of the pyrite — iron sulphide.

When the greenstone eruptive forced its way up between the schist and limestone it was a molten body and in cooling there was shattering and cracking of the limestone. This provided the channels through which the metal bearing solutions could migrate. Due to its solubility in acid solution the limestone was easily eaten out and replaced by the metal solutions hence the formation of the replacement ore body.

The oxidation commonly reaches to or somewhat below the water level and the sulphides enriched by the solutions migrating from above generally occur at or just below this horizon.

Most the water which seeps into the earth finds a level below which the rock is saturated. The level is known as the water level. Above it oxidation and leaching freely occurs but below it there can be no oxidation.

At the Copper Chief property it is believed that the water level is about 650 feet in the Coughlin shaft. This would mean that there is only a very short distance to go from the point to which the shaft is now sunk.

Ore at the Water Level

As will be noted on the accompanying sketch, it will be necessary to crosscut about 400 feet to tap the downward extension of the ore body at the supposed water level.

It is highly probably that at this point a highly enriched ore will be found. In point of values this ore should vary between five and ten per cent copper and should carry $1 or $2 in gold. This would be the logical expectation. If it does not occur it will be an exception to the rule for every geological and mineralogical criteria present

points to this probability.

Mine Equipment

I am informed that the mine is thoroughly equipped to handle ore in the Coughlin shaft from a depth of 800 feet. The hoist is run on distillate. At the camp there is a Semi-Diesel engine using fuel oil which furnishes sufficient power to run a four drill compressor and electric generator which can provide for all the immediate electric power and lighting requirements.

There will be no need for concentrator or mill as the ore is direct smelting.

Supplies

Sufficient water is obtained about four miles east of the property. Wells are inexpensive.

Distillate for the hoist can be secured laid down at Bouse for under 20 cents a gallon and fuel oil for the Diesel engine at 10 cents a gallon. Total fuel costs would not be over $25 a day running on a 24 hour day.

Lumber and timber costs about $60 a thousand and is an important item. This is brought from California markets. Other supplies are easily obtainable from Phoenix or Los Angeles at normal market prices.

Costs

Labor is good and plentiful the best miners and skilled mechanics receiving about $5 a day.

Transportation to Bouse can be contracted for at $4 to $5 a ton. Freight and smelter charges would probably total $12 to $15 a ton. I estimate that without further equipment the Company could handle about 50 tons a day of smelting ore at a total cost of $ a ton. This ore should average $ a ton in value which would mean a net profit of $ a day or $ a month.

This estimate, of course, is for immediate results and no doubt

daily the profits ought to run $15,000 a month.

Conclusion

I am more than ordinarily impressed with the showing at the Copper Chief and feel quite content in my own mind that a very substantial body of commercial shipping ore will be quickly developed if development proceeds along the plans now laid out.

Without unforseen mishap the crosscut should be driven to the ore within four months from the time it is started from the shaft. This is allowing only three feet a day headway. They should make five or six feet most the time. I would say that Copper Chief should enter the shipping class within six months and immediately show very satisfactory earnings.

The present plans of financing appear satisfactory in every way and I feel confident that Mr. Darling, the Manager, is fully capable of bringing the property to a satisfactory and highly gratifying position as a mine of importance.

J. W. Norton
Mining Engineer.

New York
September 30, 1919.

J. W. Norton

ANNUAL MEETING OF STOCKHOLDERS Phoenix

The regular annual meeting of the stockholders of the Copper Chief Mines Co., for the election of a board of directors and the transaction of such other business as may come before it, will be held at the Commercial Hotel, Phoenix, Arizona, on Monday, March 3d, 1919, at 1 o'clock.

FEB 20 1919

B. A. DARLING, Secretary.
Phoenix, Ariz., Feb. 17th, 1919.

NOTICE OF 2-4-20
STOCKHOLDERS' MEETING

The annual meeting of the stockholders of the Copper Chief Mines Co., for the election of a Board of Directors and such other business as it may transact will be held at the Commercial hotel, Phoenix, Arizona, on Monday, March 1, 1920, at 1 p. m.

Phoenix

B. A. DARLING,
Secretary.

Quartzite—A sulphide vein nearly 5 ft. wide, that samples 12½ per cent copper and material values in gold and silver has been cut at a depth of 600 ft. in the Copper Chief mine, twelve miles northwest of Quartzite. 3-26-21

19407 North 33rd Avenue
Phoenix, Arizona 85027
November 18, 1987

Mr. Ken Hodgson
2995 Jamaica Blvd. So.
Lake Havasu City
Arizona 86403

Dear Ken:

I bought the DARLING MINE from Joseph Treuer in 1975. Mr. Treuer purchased the mine from Tony Darling, who is the son of Richard Darling, the man who operated the mine under the name of Copper Chief Mines Company and who took it to patent.

I have examined the property on at least 50 seperate occasions and I have always been quite impressed with it. I have prepared a report which summarizes about thirteen years of evaluation not only by myself but by several well known companies and individuals. The Darling Mine was originally located as a copper deposit by Richard Darling in 1910 and considerable development was done in the form of a 650 foot double compartment vertical shaft with about 900 feet of drifts. They believed that at water level they would find a secondary enrichment of copper ore. However, they did not consider that the host material contained enough calcite, some gypsum, to prevent the entire percolation of copper minerals. This undertaken did not prove successful and the property was basically abandoned by 1929.

It is paradoxical that Newmont Mining, Jim Guthrie, senior geologist, later in the late 1970's found what appears to be disseminated copper off the patented claims just northeast of the main shaft by performing magnetic studies. This deposit seems to be big enough for a medium sized open pit operation but additional work must be done to exactly delineate the boundaries of the deposit.

During the Korean Conflict, the Bureau of Mines studied the Darling Mine because scheelite was found and their preliminary study indicated about 30,000 units of Tungsten trioxide, which is substantial. I hired George Corfield, P.E., who previously worked with Union Carbide tungsten mine at Bishop. Although he did not dispute the 30,000 units, he felt that some trenching along the contact between the schist and limestone must be completed before reserves can be actually calculated. I feel that the 30,000 units can be verified by a thorough examination at night by the use of a black light and I did such tests on three separate occasions.

In the early 1980's I started to feel that the mineralization on much of the Darling Mine is present over such wide and long areas and I assayed much of the highly iron oxidized material for gold and results varied from nil to as high as 0.25 oz. per ton over widths often exceeding several hundred feet. American Integrated sampled this material and according to conversations with Tim Callaway, President, the average for all their testing was about 0.06 ozs. per ton Au on the surface. These were random samples and I supervised much of this sampling program. I am very conservative when it comes to property evaluations.

In addition, on the ground of the Copper Chief Nos. 1 & 2 there is a large chloride schist formation and I channeled sampled this across widths of 45 feet

with assays averaging 6 oz. Ag per ton. I feel this represents an excellent possibility of containing disseminated silver.

In 1979, Mr. Ted H. Eyde, senior geologist with Superior Oil Company, examined the Darling Mine was quite impressed with the large reserves of attractive building stone. He also brought back a rock with highgrade scheelite in it.

Ken, I have four large files of material on the Darling Mine and basically this report I am sending you summarizes all the work that was ever done. No drilling was ever done and all studies were based on surface examination, geologic studies and assaying of mineralized structures so prevalent on the property.

For ten years I was chief mining engineer for the State of Arizona and I have never examined a property that shows more heavy mineralization on the surface than the Darling Mine. No one who ever examined it reported that the mine lacks potential, all agreed that the surface showings are substantial. Also with the price of gold around $450 oz. and silver $7.00 oz., the large lodes of disseminated mineralization is much more favorable.

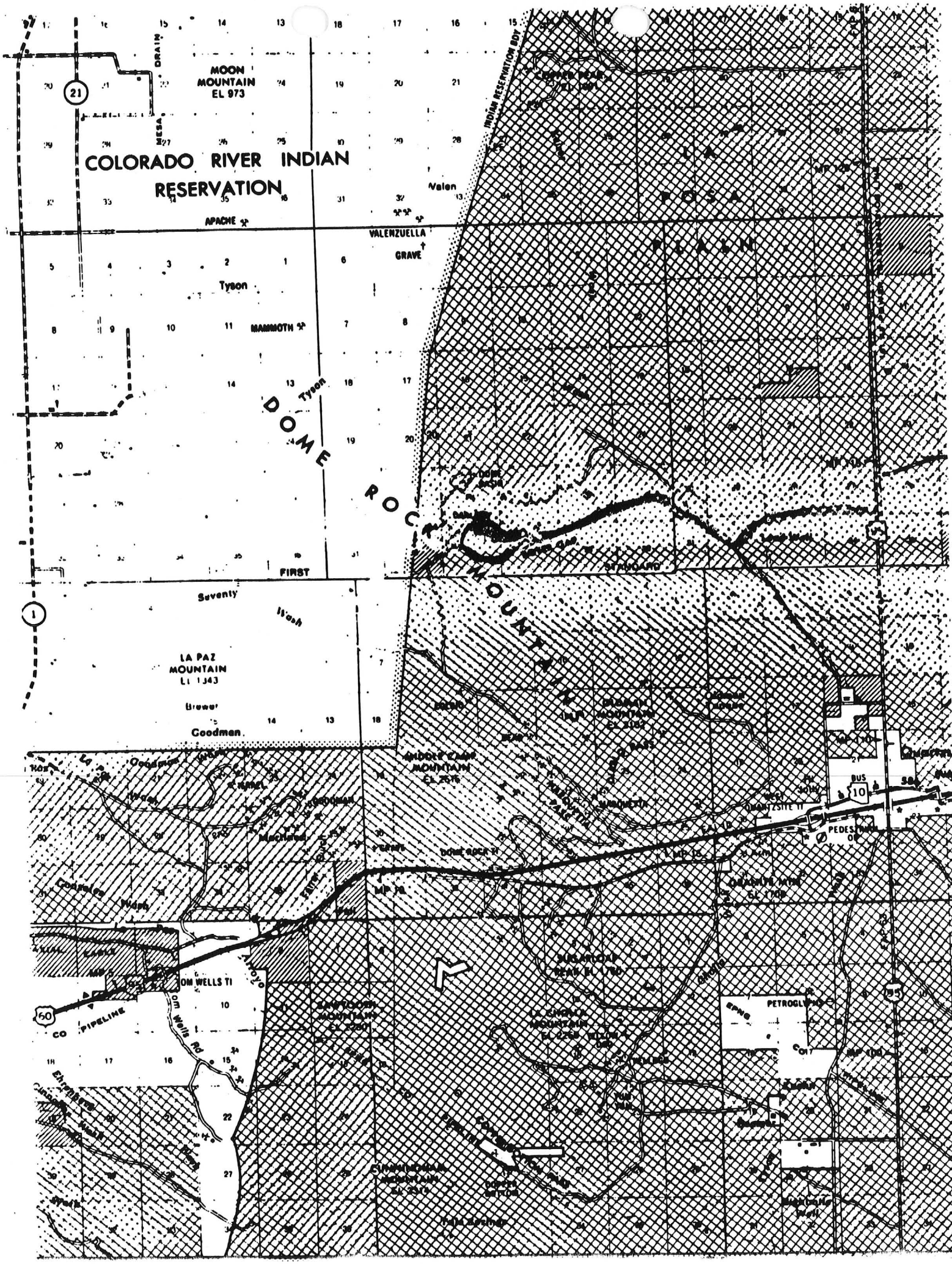
After you read these pages, you will probably know what it took me 13 years to know. Each time I visit the property, I find myself learning either something or having to modify my theory. When I was teaching classes at the University I would take my students to areas containing so much different types of mineralization and if I return to teaching, I would choose the Darling Mine as a field trip.

When you visit the Darling Mine and have any questions, please contact me and I will try to answer them. I definitely feel that this is an excellent property not because I own it or consider myself an expert in the field of mineral economics, but because of hearing the evaluations of so many known companies and individuals over a 13 year period.

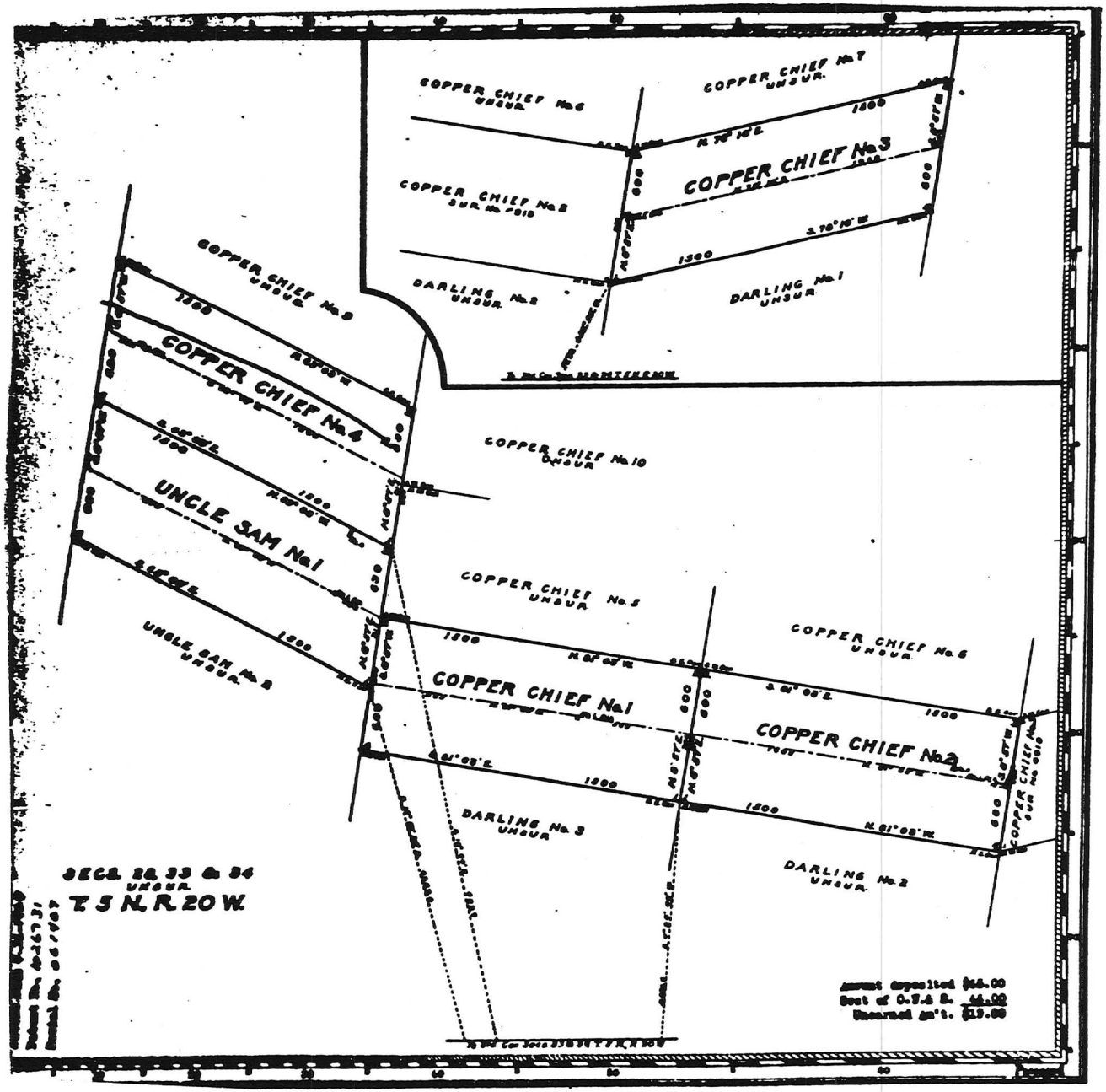
Sincerely,

Fred

Frederic M. Rothermel, Ph.D.
Professional Mineral Economist



MOON MOUNTAIN EL 973
COLORADO RIVER INDIAN RESERVATION
INDIAN RESERVATION BDY
LA POSA PLAIN
APACHE
VALENZUELLA
GRAVE
Tyson
MAMMOTH
DOME ROCK MOUNTAIN
FIRST
Seventy Wash
LA PAZ MOUNTAIN EL 1343
Brewer
Goodman
MIDDLE CAMP MOUNTAIN EL 2616
DOME ROCK TI
OM WELLS TI
PIPELINE
PETROGLYPHS



Mineral Survey No. 4018

ARIZONA 4 Land District

PLAT

OF THE CLAIM OF

The Copper Chief Mines Co.

KNOWN AS THE

UNCLE SAM NO.1, COPPER CHIEF NO.1, COPPER CHIEF NO.2, COPPER CHIEF NO.3, and COPPER CHIEF NO.4 lodes

IN Florence MINING DISTRICT, Yuma COUNTY, Arizona

Containing an Area of 101.[illegible] Acres

Scale of 400 Feet to the inch.

Variation 14° 30' E.

SURVEYED July 10 - [illegible] 19[illegible] BY

C. C. Thompson

U.S. Mineral Surveyor

The Original Field Notes of the Survey of the Mining Claim from which this plat has been made under my direction, have been examined and approved, and are on file in this Office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon, or for the benefit of, each location embraced in said mining claim by claimant or its grantors and that said improvements consist of 5 shafts, 2 cuts, total value $[illegible].

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

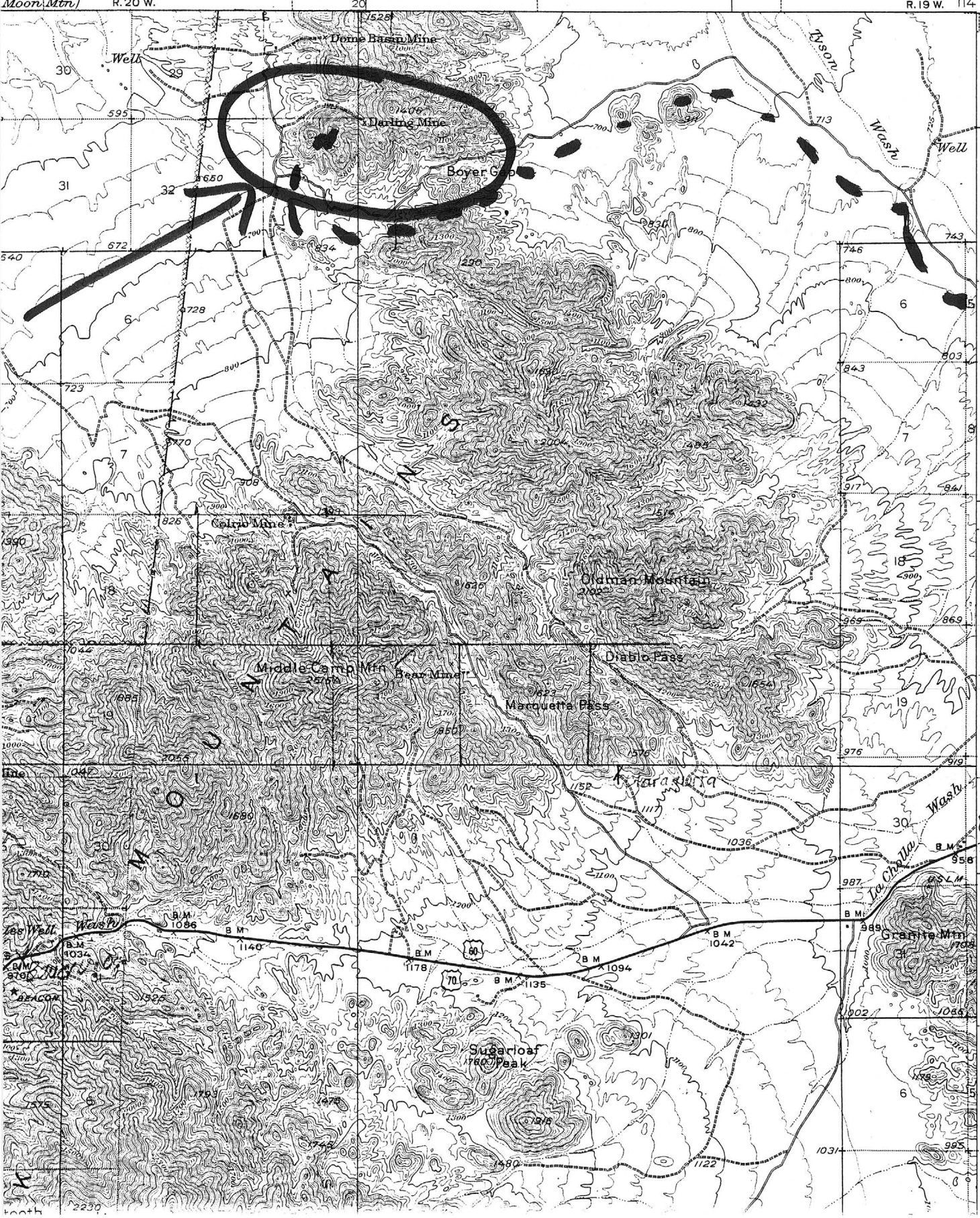
Public Survey Office

Phoenix, Arizona, Office Cadastral Engineer

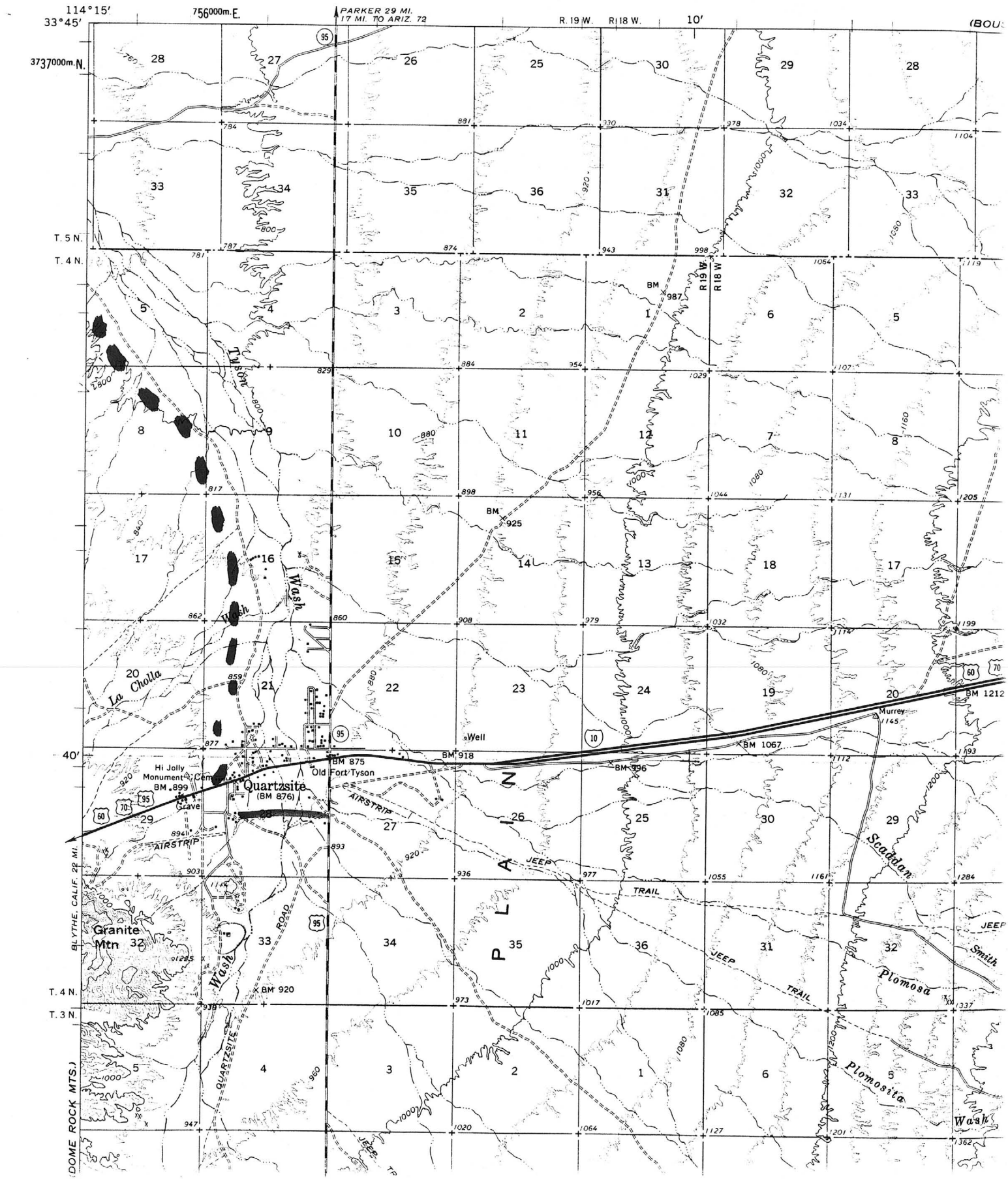
March 1, 1927 Phoenix, Arizona

ARIZONA-CALIFORNIA

DOME ROCK MTS. QUADRANGLE (Linskey)



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



DARLING MINE

The Darling Mine consists of 5 patented mining claims of approximately 102 acres and 300 acres in unpatented claims. The mine was operated in the early 1900's for copper and much of this ore averaged between 6%-20% with gold between .05-.6 ozs. per ton. Some silver was found as well.

In 1985, American Integrated Resources of California did extensive tests on the Uncle Sam No. 1 and Copper Chiefs Nos. 1 thru 4 and results from these tests reflected disseminated amounts of gold on a wide area on the west end of the property. Mr. Tim Callaway, President, took out immediately an exploration option on the Darling Mine.

In the late 1970's. Mr. Jim Guthrie of Newmont Mining Company did extensive assaying and geologic studies on the property. His results indicated a medium size open pit area containing disseminated copper oxides on the unpatented claims. Because Newmont was tied up with projects in the Carlin, Nevada area, no drilling was done.

During the 1950's, the United States Bureau of Mines did some tungsten studies on the Darling aka Copper Chief Mine, and this study indicated that this property appears to contain 30,000 units of WO_3.

In 1977, Dr. Frederic M. Rothermel, professional Mineral Economist, sampled a large deposit of chloride schist on the Copper Chief No. 1 and 2 with results that seemed to indicated about 6 ozs. Ag and .05 oz. Au over a width of approximately 40 feet. A channel cut was made across the entire face.
In 1977, Ted Eyde, Senior Geologist with Superior Oil Company evaluated the Darling Mine and found large reserves of high class building stone which could be marketed in the Los Angeles and Phoenix urban centers.

On the main wash on the Copper Chief No.4 claim, some panning was done which revealed small and course colors of gold. Additional testing of these gravels is anticipated.

The property contains several shafts showing oxidized iron and copper mineralization and assays indicate about 6-8 ozs. Ag per ton with about .08 Au (oz.) per ton. These structures appear to run almost the entire 6,000 feet of the patented claim group.

The Darling Mine appears to have numerous possibilities of becoming a commercial enterprise. As a mining property, very little actual mining was ever done and everywhere on the surface, significant mineralization can be seen.

About 7 miles north of the Darling Mine is the Copperstone Mine of Cyprus Mining and this property is scheduled to produce approximately 60,000 ozs. Au per year.

The writer feels that there is a good possibility of disseminated gold of open pit proportions being on the Darling Mine based on previous examinations and tests by American Integrated Resources.

The property is also attractive because it is the only deeded land lying north of Quartzsite, Arizona. It is the closest deeded land to the Copperstone Mine. There are also 300 acres of federal mineral rights under claim surrounding the deeded claims. Most of the potential area for disseminated gold and silver is on the patented ground, thus affording protection of these potential valuable mineral deposits.

The writer feels that the Quartzsite area of Arizona contains signficant glod mineralization, especially in the Dome Rock Mountains, where the Darling Mine is located.

The attractiveness of this mining property lies in the fact that it contains so many possibilites of becoming an economic producer of several commodities.

Respectfully submitted;

Frederic M. Rothermel, Ph.D.
Mineral Economist
November 18, 1987

THE SUPERIOR OIL COMPANY

MINERALS DIVISION

TUCSON, ARIZONA 85732

MAILING ADDRESS
P. O. BOX 12467

6245 EAST BROADWAY
SUITE 460
TELEPHONE: (602) 747-0770
TELEX: 66-6414

January 27, 1976

Mr. John Rothermel
Rothco Mines
3016 West Mercer Lane
Phoenix, AZ 85029

Dear Mr. Rothermel:

Many thanks for showing me the Copper Chief property near Quartzite, Arizona. Though the property is of no interest to The Superior Oil Company it does contain a significant reserve of attractive dimension stone and epidote-actinolite which could be of value as a green crushed rock yard cover. I would certainly urge you to continue to hold the property.

Some of the samples I brought back to Tucson contain scheelite, therefore, I would suggest you contact Mr. James E. Morgan, Jr. Regional Geologist, Union Carbide Corporation, Mining & Metals Division, 751 Ryland Street, Reno, Nevada 89503. Union Carbide has a very active tungsten exploration program underway. Please keep us in mind if you should happen to run into any more interesting prospects. Very best of luck to all of you.

Very truly yours,

Ted H. Eyde

Ted H. Eyde
Senior Geologist

THE/ym

COPPER CHIEF MINE

Mineral Evaluation Report

June 16, 1983

(TUNGSTEN)

1) Above average potential to be a successful Tungsten producer. 1975 report by George W. Corfield, P.E. (Registered mining engineer).

(STONE)

2) Contains significant reserve of dimension and building stone as well as epidote-actinolite which could be valuable as crushed yard cover. 1975 report by Ted H. Eyde (Senior geologist, Superior Oil Company).

(COPPER)

3) Geochemical and Magnetometer Study completed in 1976 by Newmont Mining Company (Magma Copper Corporation) revealed presence of a large alaskite intrusive on eastern end of property. Newmont Mining Corporation indicated that the size of this mineralized (copper) intrusive should make it suitable for a medium sized open pit operation. (File No. 1866 Newmont Mining Corporation)

(SILVER)

4) Some silver mineralization was found in Chlorite Schist on the Copper Chief No. I claim in 1976.

ARIZONA SMALL MINE OPERATORS ASSOCIATION

OFFICE OF STATE SECRETARY
CHARLES F. WILLIS
508 TITLE AND TRUST BLDG.
PHOENIX, ARIZONA

October 17, 1952

RECEIVED
OCT 30 1952
DEPT. MINERAL RESOURCES
PHOENIX, ARIZONA

COUNCILS

AGUILA
AJO
ALAMO
ARIVACA
BENSON
BISBEE
BOUSE
CASA GRANDE
CAVE CREEK
CHERRY
CHLORIDE
CLEATOR
CLIFTON
CONGRESS
CROWN KING
DOUGLAS
DUNCAN
ELLSWORTH
FLORENCE
GLOBE
HUACHUCA
KINGMAN
KIRKLAND
KLONDYKE
MAYER
MESA
MIAMI
MORENCI
MORRISTOWN
NOGALES
OATMAN
ORACLE
PARKER
PATAGONIA
PAYSON
PEARCE
PHOENIX
PRESCOTT
QUARTZSITE
QUIJOTOA
RAY
SAFFORD
SALOME
SELLS
SUNFLOWER
SUPERIOR
TEMPE
TOMBSTONE
TUCSON
VERDE
WICKENBURG
WILLCOX
WINKELMAN
YARNELL
YUMA

Roger I.C. Manning, Director
Department of Mineral Resources,
Mineral Building, Fairgrounds,
Phoenix, Arizona.

Dear Roger:

Will you please have the engineer who covers the Quartzside area check into the following the next time he is in that area?

What is the present ownership of the land once held by the Copper Chief Mines Co., Richard Darling, president, Bouse, Arizona?

Between 1910 and 1926 they did a lot of work on a large number of patented claims in Dome Rock Mountains, Plomosa district, Yuma County, 14 miles Northwest of Quartzsite and 20 miles Southwest of Bouse. They had a 650 ft. shaft with regular levels below 280 ft., and had a lot of equipment. In other words, it was a rather extensive operator while it was going for a number of years up to 1926.

I thought possibly the field engineer covering the above district could make inquiry among some of the old-timers in the area as to who now owns the land and by what process it was acquired. The company is out of existence as their charter expired in 1935 and was not renewed.

DARLING

My understanding is that Richard Dowling and his wife died in a murder-suicide pact after the mine shut down but I would like to find out what happened to the property.

Thanking you, I am

Very sincerely,

Charlie

Charles F. Willis

CFW:VSW

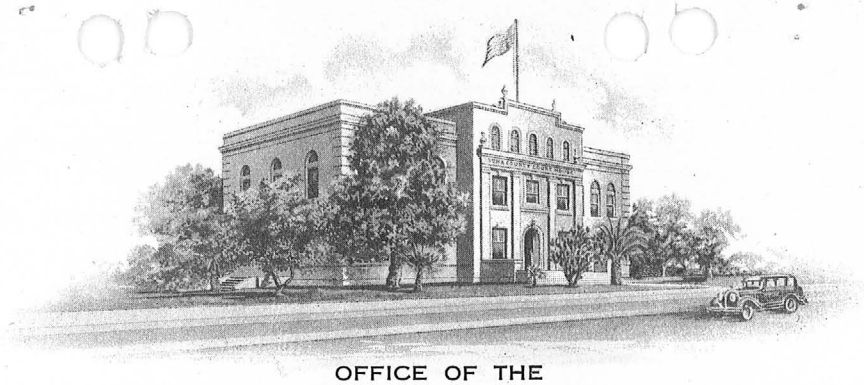
T 5 N.
R 20 W.
Sec 33-34
#4009
U.S. No 1
CC " 2
" 3
" 4

VERNON C. WRIGHT
RECORDER

CARA N. BETTS
DEPUTY

ERVIN E. SMITH
DEPUTY

PAULINE LIPSCOMB
DEPUTY



OFFICE OF THE

COUNTY RECORDER

YUMA COUNTY

YUMA, ARIZONA

Oct. 29, 1952

J. E. Bush
Dept. of Mineral Resources
Phoenix, Ariz.

Dear Mr. Bush:

According to the records the Copper Chief No. 1, 2, 3, 4 and Uncle Sam No. 1 belong to Joseph Treuer of 1802 E Princeton, Phoenix, Arizona.

He bought this property in August 1952.

I checked on the taxes and found that the taxes are due for the years 1949, 1950, 1951 and 1952.

Best of wishes to both you and Mrs. Busch.

Yours very truly,

Cara N. Betts,
Deputy Recorder

Ken & Rita Hodgson
Riken Resources, Ltd.
P.O. Box 101
Sumpter, OR 97877

May 25, 1992

Dear Ken,

Thanks for your help on the Pikes Peak Project. I may wind up with it.

The Darling Mine AKA Copper Chief I own is 6 mi N. of Quartzsite And is a real good potential for White marble, wide massive exposeurer Also there is a Beautiful Epidote that could make green yard cover.

This property is patented and open for any reasonable deal.

Will be back home in Chloride, AZ After the October mining Convention in Las Vegas.

Yours truly,

[signature]

RECEIVED
MAY 29 1992

GEOLOGY OF THE COPPER CHIEF MINE

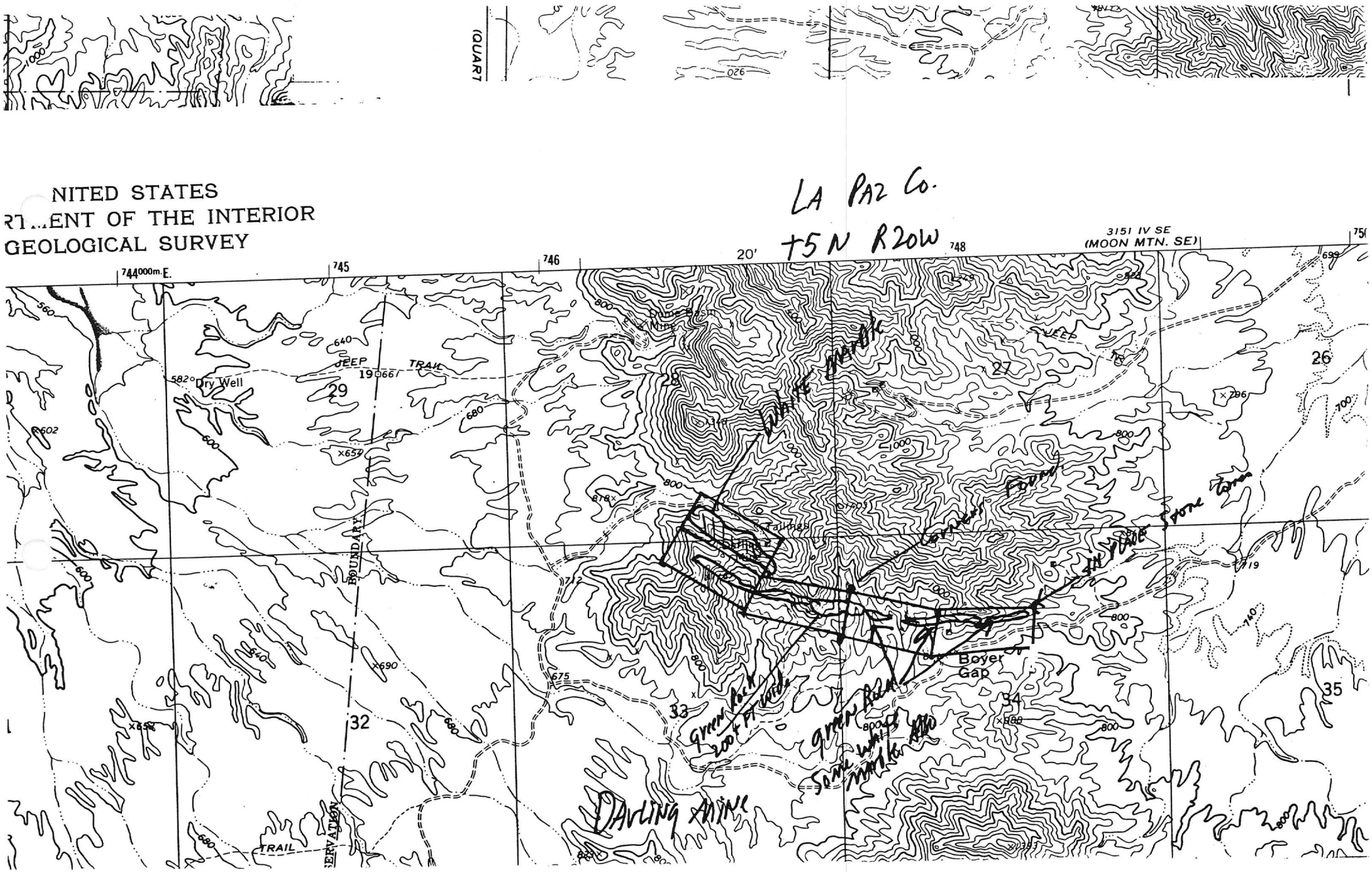
The geology of the Copper Chief Mine is quite complex due to extensive metamorphism which occurred in successive stages. Tactite is evident on the claim group and has resulted from metamorphism of impure limestone beds. The metamorphism proceeds in zones along the channels which the solutions move. The process is one of solution and the formation of deposition of new minerals and the emigration of old minerals and the interchange of minerals.

The chief minerals of the tactite zones on the Copper Chief Mines are epidote, actinotite, hornfel, vesuviante, quartz, calcite, magnetite, molybdenite, sphalerite, hematite, green garnet and other lime-silicate minerals. There is a great thickness of limestone beds exposed on the group which dip from 30° to 40° to the northeast. The epidote zones of the tactite are mineralized with scheelite. Scheelite has, in part at least, come into the deposits after the formation of the epidote and has formed in cracks in dark-green epidote. The epidote zones in the mine contain disseminated scheelite in the dark green epidote-actinolite zones on the Uncle Sam, Copper Chief nos. 1, 2, 3 & 4 and in some of the quartz veins.

A Pegmatite dike is evident on the east end line of the mine group and is extremely altered. Granite gneiss exposed on the property displays abundant biotite crystals in flow line. Mica schist is also exposed on the group but the important mineralization is in the chlorite schist. The main body of chlorite schist is on the Copper Chief No. 2 Patented Claim but it is covered by a loose covering of alluvium and mica schist. The chlorite schist is mineralized with copper and silver and contains interlaminated quartz and calcite veinlets and is dark green in color due to the chlorite mineralization. Copper staining is present and the chlorite schist averages 6.5 ounces of silver per ton.

The strongest mineralization examined on the Copper Chief Mine is the scheelite in the dark green epidote-actinolite zones on the Uncle Sam, Copper Chief I and Copper Chief II Patented Claims and the silver-copper in the chlorite schist as exposed by shallow workings on the Copper Chief No. 2 claim.

There are several hematite zones on the claim group and extensive work was done on these zones exploring for a secondary enrichment deposit of copper. The potential of the Copper Chief Mine is in the scheelite found in the extensive epidote-actinolite zones and the silver-copper in the chlorite schist. The chlorite schist appears extensive enough for open pit mining while the probable ore reserves of scheelite are quite large and will be proven by development.


NITED STATES
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GEOLOGICAL SURVEY
LA PAZ Co.
T5N R20W
3151 IV SE
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745
746
748
20'
Dry Well
JEEP TRAIL
Dome Basin Mine
Tailings
Boyer Gap
BOUNDARY
TRAIL
29
28
27
26
32
33
34
35
White Marble
Corners Found
In Place Stone Corner
Green Rock 200+ Ft Wide
Green Rock Some White Marble Also
Darling Mine

Copied from
The Mines Handbook, 1922

COPPER CHIEF MINES CO. ARIZONA

Offices: Chas. W. Chubbuck, 20 W. 34th St., New York. Mine at Quartzite, Yuma County, Ariz.

Officers: Richard Darling, pres.treas.-mgr. Quartzite, Ariz.; Richard Darling, Jr., v.p.; B. A. Darling, sec.

Inc. 1910, in Arizona. Cap. $5,000,000; $1 par; outstanding 3,000,000.

Property: 28 claims, patented, 560 acres, in Plomosa district, Yuma County, 20 miles S. W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper. Gold runs from $1 to $12.80 per ton.

Development: by 2-compartment 650' vertical shaft, which has passed through greenstone into a replacement body of copper ore in limestone. Shaft is down to water-level, and crosscutting has reached 490' on the 648' level, 165' on the 420' level and 100' on the 250' level, in ore said to assay 6-20% copper.

Examined by L. A. Dunham, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

Equipment: includes a 25 h. p. gasoline hoist, a small compressor, 50 h. p. engine, triplex pump, two 20 k. w. generators, 20 h. p. motor, auto-trucks, and complete camp site.

July 20, 1945

Mr. W. G. Hokett
2322 North 9th St.
Phoenix, Arizona

Dear Mr. Hokett:

We have your request for information regarding the Copper Chief Mines in Yuma County, Arizona

Our field engineer, Mr. Macfarlane, made a brief inspection of this property last month but failed to render a report before he left the employ of this department on June 30th.

We find that Weed's Mines Handbook for 1922 gives some description of the property from which we quote as follows:

Inc. 1910, in Arizona. Cap. $5,000,000; $1 par; outstanding 3,000,000.

Property: 28 claims, patented, 560 acres, in Plomosa district, Yuma County, 20 miles S.W. of Bouse, shows schist and greenstone with a contact deposit dipping at 35° and containing copper and gold ore that assays 1.3% to 20% copper. Gold runs from $1 to $12.80 per ton.

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Examined by L. A. Dunham, who reported that the remarkably favorable iron outcrops on all the claims of this company would probably be underlain by high-grade copper ore.

Equipment: includes a 25 h.p. gasoline hoist, a small compressor, 50 h.p. engine, triplex pump, two 20 k.w. generators, 20 h.p. motor, auto-trucks, and complete camp site.

We understand, however, that the statement above that there are 28 patented claims is in error but that there are 5 claims patented, the balance were unpatented.

Trusting the above information will be of value to you.

Yours very truly,

Chas. H. Dunning, Director

CHD:LP

Oct. 30, 1952.

Mr. Charles F. Willis,
508 Title & Trust Bldg.,
Phoenix, Arizona.

Dear Charlie:-

Re: Copper Chief Mines Co.

The County Recorder, Yuma county, has advised that the above named property is now owned by Joseph Treuer, 1802 E. Princeton St., Phoenix, Arizona. He bought the property in August 1952. Taxes are due for the years 1949, 1950, 1951 and 1952, but total amount of taxes was not stated.

This information relates to the patented claims - 5 in number - known as Copper Chief Nos. 1, 2, 3, 4, and Uncle Sam No. 1.

The patented claims are within Sections 33 & 34, Tp. 5 N., R. 20 W., and the mineral survey number is 4019, Arizona.

This is in answer to your inquiry of Oct. 17th.

Sincerely yours,

JEB

R.I.C.Manning, Director.

Oct. 24, 1952.

Vernon Wright,
County Recorder,
Yuma, Arizona.

Dear Mr. Wright:-

Will you please give me the name and address of the present day owner of certain patented mining property located in Secs 33 & 34, T. 5 N., R. 20 W., and originally owned and patented by the Copper Chief Mines Co. ?

I think there are 5 patented claims; the mineral survey is # 4019, and the claims are Copper Chief No 1,2,3,4 and Uncle Sam No 1. I believe the company originally had quite a few adjoining unpatented claims but these are probably abandoned or lapsed by this time.

Please ask assessor re taxes on above patented claims, and, if you can tell me anything further re any recent work or development it will be appreciated.

Thanking you, and with best wishes to you and your staff,

Cordially,

J. E. Busch.