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PRINTED: 03/05/2003

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: JEMISON

ALTERNATE NAMES:

JAMISON  
MAMMOUTH #1  
CHICO

MOHAVE COUNTY MILS NUMBER: 112D

LOCATION: TOWNSHIP 23 N RANGE 17 W SECTION 31 QUARTER SE  
LATITUDE: N 35DEG 20MIN 10SEC LONGITUDE: W 114DEG 08MIN 06SEC  
TOPO MAP NAME: CERBAT - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:

SILVER SULFIDE  
COPPER SULFIDE  
GOLD LODE  
LEAD SULFIDE  
ZINC SULFIDE  
IRON SULFIDE  
URANIUM

BIBLIOGRAPHY:

ADMMR JEMISON MINE FILE  
ADMMR MOHAVE CUSTOM MILL PROJECT  
WEED'S MINE HANDBOOK, VOL. XIII, P. 370  
A.E.C. PRELIM. RECONN. RPT. 172-485, P. 67  
DINGS, M. "WALLAPAI MNG DIST, CRBT MTNS, AZ"  
USGS BULL 978-E, (MAP), PLATE 18  
HAURY, P.S. "ZINC-LEAD MINES IN WALLAPAI MNG  
DIST, MOH. CTY, AZ" USBM RI 4101, MAP

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COMMODITY:

SILVER-(M) SULFIDE-PRIMARY  
COPPER-(M) SULFIDE-COPRODUCT  
GOLD-(M) LODE-BYPRODUCT  
LEAD-(M) SULFIDE-BYPRODUCT  
ZINC-(M) SULFIDE-BYPRODUCT  
IRON-(M) SULFIDE-BYPRODUCT  
URANIUM-(M) U308 CONTENT-BYPROD

BIBLIOGRAPHY:

USGS CERBAT QUAD  
ADMR MOHAVE CUSTOM MILL PROJ. CARD FILE  
ADMR MOHAVE CARD FILE  
ADMR JEMISON MINE FILE  
WEED, W., MINES HNDBK. VOL. XIII, P. 370  
A.E.C. PRELIM. RECONN. PRT. 172-485, P. 67  
DINGS, M. & SIMS, P., USGS BULL 978-E, (MAP),  
PLATE 18  
RI 4101, Map (Jemison Mine)



Jamison(f)

NAME: ① JAMESON

COUNTY: MOHAVE

T 23 N R 17 W 31 SEC. Elev 4480

DISTRICT: WALLAPAI  
CHLORIDE

Mineralization: (Ag C.) dd  
off development

Geology:

Type Operation:

Production:

References: (Addresses)

Mohave Cty. Card File

JEMISON MINES COMPANY

MOHAVE COUNTY

RRB WR 10/23/81: Bill Vanderwall of Pacific Regional Operations, Inc. 7333 E. Monterey Way, Scottsdale, AZ 994-3247 called. He was looking for a custom mill to treat 1000 tons of 2% copper ore carrying some silver, lead and zinc (approximately \$83/ton of Cu and Ag) which is stockpiled at the Chico claims adjacent to the south side of Duval's Mineral Park property in Mohave County.

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RRB WR 11/20/81: George Boyd reports that a man by the name of Charles E. Goetz has 51 claims (2 patented) next to Duval's Mineral Park property for which he is asking \$2.5 million on pay out basis or less for each and wanted us to refer possible buyers to him. However, he would not give me any particulars for our files.

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JAMISON MINE

MOHAVE COUNTY 9 mi S of  
Chloride 46  
7 mi E. of Boulder  
Dam Highway.  
FTJ QR 7-1-70 on eastern  
slope of Lagne  
Springs Canyon

Exploration work was done at the Chico property during the quarter. FTJ QR 7-1-70

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Chico mine idle. FTJ WR 9-4-70

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Visited the Chico mines - idle. FTJ WR 11-6-70

---

Chico mine idle. FTJ WR 1-8-71

---

The Chico mine was inactive as was Buffalo Lakes Mines at White Hills. FTJ QR 1-13-71

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Mr. Dick Ranie, Wickiup, came in for information on the Chico Mine (Jamison) south of Chloride. GW WR 6-11-73

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Charles Murray of Post Realty wanted information on the Mint claim of Chico mines. Silver predominate with wire silver and ruby silver also galena. Mr. Murray is having a geologist from Phelps Dodge examine the Chico mine. FTJ WR 6 24-74

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It was reported at the ASMOA 1/7/75 meeting that Dupont has acquired the Golconda and Chico properties in the Cerbats. VBD WR 1/7/75

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Messrs. Dave Cook and Kevin Kenney, P.M.C. Co., came in to discuss the Chico mine property of Mr. Geotz, from whom they have a lease. They spoke of building about a 50 T/day portable mill and wanted the laws with regard to tailings dams. They were advised to consult the BLM, but that a substantial dam would be required in order to reclaim the water. GW WR 12/22/75

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Walt Statler said that most of his samples are coming from the Chico property north of Kingman. GW WR 1/7/76

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George Boyd is investigating an operating proposal for the Chico mine near Mineral Park. He will apparently attempt to raise money for the project. KAP WR 6/7/76

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RRB WR 4/24/81: Bill Vanderwall, Scottsdale, has Chico Mines bordering Duvals Mineral Park Property in Mohave County and was looking for someone to do feasibility studies and/or operate property.

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*[Handwritten scribbles]*

To Jamison mine (Chico Mines) They are drifting east on the 300' level and also on the 200' level. 5 employees. FTJ WR 9-10-68

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Visited the Chico mines. Work consists of a new headframe on the 98 claim which is about  $\frac{1}{2}$  mile southeast of the Jamison adit. J. R. Simplot Co. of Idaho were sampling and examining the Jamison and adjoining claims. FTJ WR 11-8-68

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Active Mine List Oct. 1968

Visited Chico Mine which was idle during holidays, but were getting underway again - sinking operation on the 98 claim above and southeast of the Jamison adit. Ellis brothers of Kingman are mining on the Mohawk claim which is southwest of the Chico operation. All work is by hand tools. FTJ WR 1-10-69

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Last three miles to Chico mine impassable. Three men underground drifting. FTJ WR 3-7-69

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Active Mine List April 1969 - 5 men - Roy Montague, Mgr.

Rumored that some Utah company was examining the Jamison mine. FTJ WR 6-6-69

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Visited Chico mines - gate at mine closed - no one around. Roy Montague is in the hospital. FTJ WR 7-11-69

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Phoned Roy Montague re Chico, he said Big Horn Mining Co., of Salt Lake City, Clyde Davis geologist, had taken option on the Chico Mines property. They also have option on Golden Eagle and the Golconda properties. FTJ WR 7-18-69

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Visited the Jamison mine - no one around - Roy Montague is the manager, but not in. Was told a Salt Lake outfit has an option on the property. FTJ WR 9-5-69

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Active Mine List Oct. 1969 - 2 men - Roy Montague, Mgr.

Visited Chico Mine (Jamison) Interview with Roy Montague. He said Big Horn Mining Co. of Salt Lake, Clyde Davis, geologist, have examined the Chico Mining Co. holdings and located other claims. Hanna Mining Co. and Big Horn may make a joint venture of the properties. FTJ WR 11-7-69

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To Chico mine - idle and no one around. FTJ WR 3-6-70

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Visited Chico mine - gate locked. FTJ WR 5-8-70

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Visited Chico mine - idle - gate locked. FTJ WR 7-11-70

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Visited the Jamison mine - Chico Mining Co. Interview with Roy Montague and Charles Goetz. They are cleaning out and repairing the old shaft and have stockpiled about 300-400 tons of mill grade ore. Shaft is repaired to 85' level from adit level, and making about 3,500 gallons of water per day. Long holes are driven from the walls of 85' level to enlarge ore reserves. Four employed. Mr. Goetz now owns the John Slak property at Junction of Bumble Bee-Crown King Road and Cortes Road. No definite plans at the time of interview. FTJ WR 3-11-67

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Active Mine List April 1967 - 4 men

Visited Jamison Property (Chico Mining Co.) - interview with Charles Goetz and Roy Montague. They are planning to set up a mill and believe they can develop an open pit operation. They continue to explore and develop reserves from adit level. FTJ WR 5-5-67

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Visited Jamison mine - they are rehabilitating shaft - some drifting. Shaft is to 246' level. The pump motor had burned out but they had been pumping 40,000 gal. per day. FTJ WR 7-7-67

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Interview with Roy Montague at the Jamison mine. Shaft is rehabilitated to the bottom - 300' level. Excellent ore was being stockpiled. Construction of a pilot mill is taking place. FTJ WR 9-8-67

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Interview with Roy Montague at the Chico. Their small pilot mill is nearly completed. It is supposed to treat 1 ton/hr. by table and flotation. FTJ WR 11-10-67

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Visited the Chico Mining Co. (Jamison) - work confined to the Mint Claim above the Jamison. Cleaning a tunnel and making a cut on high grade (500 oz.) Ag. ore. FTJ WR 1-5-68

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Visited the Jamison mine (Chico Mining Co.) They were crosscutting and drifting on the 300' level. Montague said they have 450,000 tons of mill grade ore blocked out. They also are drilling from the surface about 1000' northwest of the Jamison adit. 8 men working. FTJ WR 3-8-68

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Active Mine List Nov. 1967 - 5 men  
Active Mine List April 1968 - 5 men

Visit Chico Mines Co. They have been drilling about 1000' northwest of the Jamison portal. Stuck the bit at 940' and had retrieved 340' of rod. Hole abandoned. FTJ WR 5-10-68

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Visited Jamison mine - exploration and development on the 260' level. FTJ WR 7-12-68

---

Phone call from Earl Baier for information on the Chico Mining Co. He says he is a stockholder. FTJ WR 7-19-68

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In DOCKET

at the request of

When recorded, mail to:  
John P. Phillips  
SNELL & WILMER  
3100 Valley Bank Center  
Phoenix, Arizona 85073

Recorded in Official Records  
of Mohave County, Arizona  
AUG - 8 '85 - 8 00 AM  
Joan McCall, Recorder

\$ 7.00 1 of 3

Deputy Recorder



### QUIT CLAIM DEED

For the consideration of Ten Dollars, and other valuable considerations, FERN FOSTER, Personal Representative of the Estate of Charles E. Goetz, deceased,

hereby quit-claim to ALEX PROHOROFF, a single man,

all right, title, or interest in the following real property situated in Mohave County, Arizona:

The real property set forth on Schedule A attached hereto and made a part hereof, SUBJECT to 1985 real property taxes, liens, encumbrances, rights of way, and reservations of record. FURTHER SUBJECT to 1985 mine assessment work.

It is understood that the Grantor hereby reserves for itself and the remainder devisees of the Estate of Charles E. Goetz, deceased, a five percent (5%) over-riding royalty interest in the gross receipts produced from minerals taken from the property conveyed herein. It is understood that the Grantor, by reserving this over-riding royalty, does not obligate itself or the beneficiaries of the Estate of Charles E. Goetz, deceased, for payment of any sums in the production of such minerals. The undersigned further reserves for itself and the remainder devisees of the Estate of Charles E. Goetz, deceased, five percent (5%) of the sales price received for such property over and above the sum of Nine Thousand Dollars (\$9,000.00). It is understood that ninety percent (90%) of the real property is being conveyed herein; however, this reservation pertains to one hundred percent (100%) of the property.

Pursuant to Arizona Revised Statutes Section 33-401, the beneficiaries for whom the above property is held are:

FERN FOSTER  
6522 North 5th Avenue  
Phoenix, AZ 85013

STEVEN SCHEINER  
2500 Valley Bank Center  
Phoenix, AZ 85073

Dated this 1 day of August, 19 85

*Fern Foster*  
FERN FOSTER

STATE OF ARIZONA }  
County of Maricopa } ss.

This instrument was acknowledged before me this 1 day of August, 19 85, by FERN FOSTER, as Personal Representative of the Estate of Charles E. Goetz, deceased. *Spencer J. Phillips*  
Notary Public

My commission will expire My Commission Expires March 14, 1989

STATE OF \_\_\_\_\_ }  
County of \_\_\_\_\_ } ss.

This instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_, by \_\_\_\_\_

My commission will expire

Notary Public

CHICO PROPERTY  
ORE POTENTIAL  
SUMMARY

All the attendant geological features or conditions which are responsible for the formation of economic ore deposits in the Wallapai Mining District occur on the Chico Property.

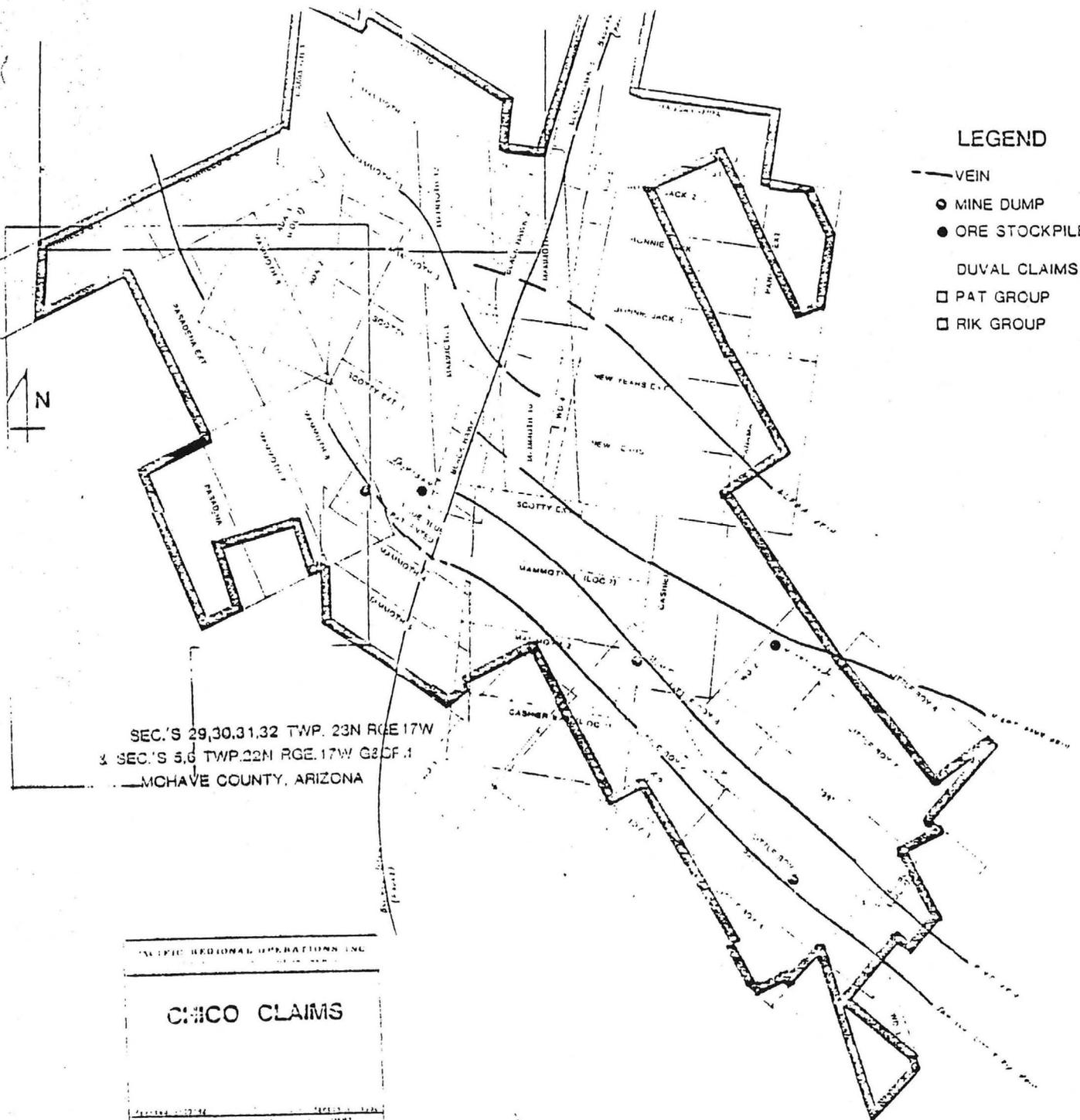
Direct evidence of ore underground exists in most old workings which exploited the oxidized portions of the veins. The size and extent of mine dumps suggest fifty thousand tons of ore have been removed from the upper portion of the orebodies. The primary sulfide zones are shown to persist for depths exceeding four hundred feet. Assayed sulfide material yields as high as 12 ounces gold per ton and 50 ounces silver per ton with 12% copper, average tenure is 0.5 ounces gold per ton and 10 ounces silver per ton with 2% each of copper, lead and zinc. We consider that at least an additional fifty thousand tons of such sulfide ore remains, drilling could significantly increase that estimate.

Indirect evidence of mineralization of the property exists in the form of extensive iron and manganese stained gossans, spring water testing 6.7 ppm copper, 87 ppm zinc and 2 ppb silver, and zones of secondary copper enrichment occurring in the largest structural component of the Chico Property. Silver enrichment of the gossans averages 3 ounces per ton and goes as high as 20 ounces per ton with minor amounts of gold. The sulfide equivalent of a gossan, drilled in July, 1981, assayed 1.3 ounces gold per ton but only 12.5 ounces silver. Perhaps the ground water, containing 80 ppm chlorine, preferentially enriches the oxide zone with cerargarite (Ag Cl) while transporting gold in various aurochloro compounds.

The largest structure, the Broncho Dyke, a fracture which traverses the property for three-fourths of a mile, is infilled primarily by Ithica Peak Granite, host rock of the Duval orebody. The granite in turn was intruded by diabase, rhyolite and quartz. Geochemical samples of the Dyke have revealed areas anomalous in silver, lead and zinc. Shallow drilling showed the quartz in the Dyke to average 6 feet in thickness and to carry 0.3 ounces gold per ton. If the quartz persists for the entire length of the Dyke, it could represent over one million tons of ore. The nature, rock associations and attitude of the Dyke enhances the possibility of secondary copper enrichment.

A development drilling program is paramount for the delineation of ore reserves on the Chico Property.

September 18, 1981



**LEGEND**

- VEIN
- MINE DUMP
- ORE STOCKPILE
- DUVAL CLAIMS
- PAT GROUP
- RIK GROUP

SEC'S 29,30,31,32 TWP. 23N RGE 17W  
 & SEC'S 5,6 TWP. 22N RGE. 17W G2 OF 1  
 MOHAVE COUNTY, ARIZONA

PACIFIC REGIONAL OPERATIONS INC.  
 CHICO CLAIMS

DUVAL

PATENTED CLAIMS  
CHICO AREA

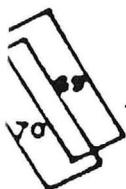
R18W

R17W

25

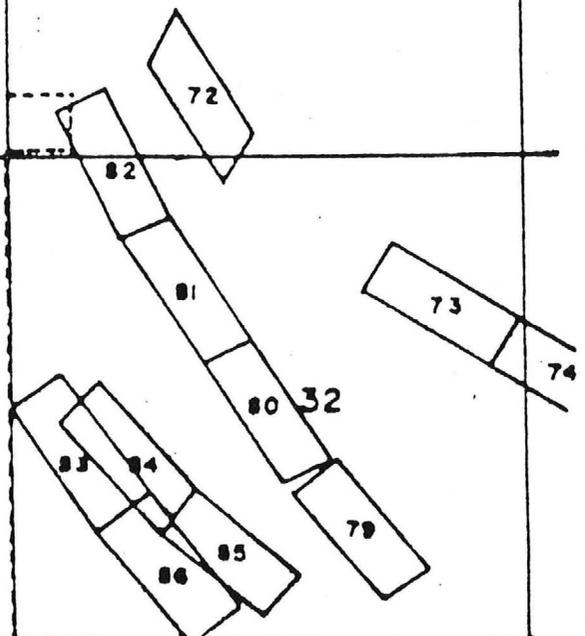
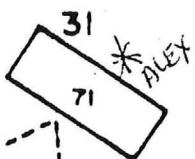
30

29



CHICO  
CLAIMS

36



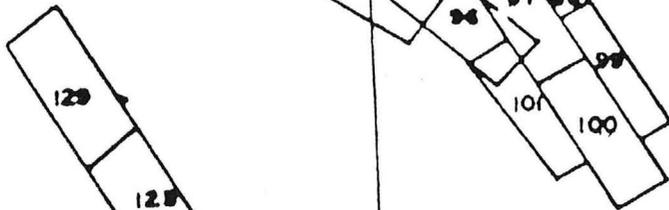
T23N

T22N

1

6

5



12

7

8

SUMMARY OF GEOLOGICAL REPORT  
CHICO MINES PROPERTY  
WALLAPAI DISTRICT, MOHAVE COUNTY, ARIZONA

The Chico Mines Property consists of 51 contiguous mining claims, two patented, located in Sections 29, 30 and 31, T23N, R17W, and Sections 5 and 6, T22N, R17W, GSRM, Mohave County, Arizona.

The property is bounded on the east by Stockton Hill Camp, a late 1800's silver bonanza, on the south by the Golconda Camp, once the largest lead-zinc-silver producer in the area and bounded on the north by the Pennzoil-Duval copper-moly porphyry, an active open pit mine.

The property is located in the central portion of the Cerbat Mountain Range, one of the many north-south trending, fault-block ranges of the southwest desert. Rocks exposed at the surface include metamorphosed pre-Cambrian igneous and sedimentary rocks cut by Mesozoic (?) intrusives and Tertiary extrusives.

The ore deposits on the Property may be of as many as three types; Vein deposits of primary base metal-silver sulfides; oxidized, near surface veins often greatly enriched in precious metals; and, copper-moly porphyry, an extension of the Duval orebody.

The most favorable loci for ore is at the junction of veins and randomly placed along the vein in shoots or lenses. Several major veins trend northwest and intersect with the northeast trending Broncho Dyke on the Chico Property.

Results of field reconnaissance indicate the following:

- A.) Primary sulfide minerals, mostly pyrite, arsenopyrite, galena, sphalerite and chalcopyrite, are found in most of the accessible workings on the property.
- B.) An oxidized zone, 50-300 feet deep, consisting of a vein swarm greatly enriched in precious metal, and representing a considerable amount of ore, is present in the southwest portion of the property bordering Stockton Hill. This zone may be minable by surface methods and amenable to cyanidation.
- C.) Rock equivalents of the Duval orebody are present on the Chico Property and abundant copper sulfate precipitate may be noted in the stream bed located in the west-central portion of the Property. This suggests the southward extension of the Duval orebody into the Chico Claims.
- D.) Previous mining operations on the Chico Claims have produced some sizable mine dumps. The possibility of precious metal recovery from these dumps should not be overlooked. cursory examination indicates in excess of 150,000 tons of material averaging 0.02 ounces gold per ton and 1.5 ounces silver per ton.

SILAS C. BROWN & ASSOCIATES  
GEOLOGICAL CONSULTANTS

UNDERGROUND DEVELOPMENT

(Phase III)

The most favorable location for an initial mining operation is on the Little Boy and '98 Claims, located in the northwest quarter of Section 5, Township 22 North, Range 17 West. Several mineralized veins intersect in this area which show abnormally high gold and silver values.

The Little Boy, Goetz and '98 Shafts all penetrate mineralized veins, indicating considerable ore reserves. Values increase significantly with depth.

The '98 Shaft is approximately 100 feet in depth with short horizontal tunnels developed along the vein. Oxide ore is in place in the shaft and the tunnels are bordered by altered material. At the 100 foot level, the vein and altered material average about 3 feet in width. Assay samples across this zone gave values of 3.3 ounces gold and 23.0 ounces silver per ton. Surface exposures showed only a trace of gold and 0.78 ounces of silver, indicating increasing values with depth.

The Goetz shaft is on an extension of the '98 Vein and is reported to be about 220 feet in depth, but is caved at the 10 foot level. Assays of stockpiled ore from the 50 foot level showed values of gold ranged from 0.384 to 0.55 ounces per ton and silver ranged between 35.64 and 63.0 ounces per ton. The vein is oxidized to the 200 foot level where assay values showed gold to be 0.256 and silver 13.42 ounces per ton. At this level the vein is 2.5 feet in width. By contrast, surface samples at the Little Boy Vein had values of gold showing 0.15 and silver 1.79 ounces per ton. The vein at the surface is only one foot in width.

GEOLOGICAL SUMMARY  
CHICO MINING CLAIMS  
WALLAPAI DISTRICT, MOHAVE COUNTY, ARIZONA

- (1) The Chico Mines property comprises 51 claims (2 patented) located in Sections 31 and 32, Township 23N, Range 17W, and Sections 5 and 6, Township 22N, Range 17W, GSRM.
- (2) The claims are bounded on the north by the Pennzoil-Duval claims; an active open pit porphyry copper operation; and bounded on the south by the Golconda Mines group which was the second largest base metal producer in the district.
- (3) Rocks exposed at the surface include pre-Cambrian igneous and metamorphic rocks intruded by the Ithaca Peak granite which is centered just north of the Chico claims. This intrusive is thought to be the source of most mineralization since mineralized zones radiate out from the center of the granite intrusion.
- (4) The ore deposits on the claims may be of as many as three types. Porphyry copper-molybdenum in the north, a continuation of the Duval ore body; vein deposits of primary sulfide minerals which extend to depths of 1,500 feet or more, and possibly widening with depth; and the oxidized portions of the vein deposits which occur near or at the surface and are often greatly enriched in silver.
- (5) The most favorable loci for ore is at the junction of veins. At least four major veins trend northwest from Stockton Hill and intersect with the manganese stained "Black Dyke" (Broncho Dyke) which traverses the Chico claims. These are the Alpha Vein, the Cashier Vein, the Little Boy Vein, and the 98 Vein, (see Project map).
- (6) Results of spot check assays and preliminary field reconnaissance indicate the following:
  - (A) An oxidized zone, enriched in silver is present in the southeast half of the Chico claims and on the entire Black Hawk claims.
  - (B) Considerable ore lies in the oxidized zone 50-300 feet deep, averaging approximately 20 ozs. of silver per ton and 0. ozs. of gold per ton.
  - (C) This oxidized zone may be mined by surface methods or shallow underground methods.

## HISTORY AND PRODUCTION

The Chico Mines Property lies centrally in an area rich and colorful in Arizona mining history. Bordering the claims on the east is the famous Silver Bonanza Ghost Camp of Stockton Hill, where rich silver discoveries brought miners to the area in 1863. Oxidized silver ores (up to 3,000 ounces per ton) were mined at Stockton Hill with the bulk of production during the 1870-1880 period. Bordering the claims to the south is the Golconda, whose namesake mine was reportedly "shot in" by its German owners at the outbreak of World War I. The owners abandoned the claims by returning to Germany. The Union Basin Mining Company immediately re-entered the Golconda, and their smelter receipts show the company producing more than three million dollars worth of zinc, gold and silver during the duration of the war. During this time, the Jamison, True Blue and Little Boy Mines (located on the Chico Claims) carried on minor operations and shipped ore to the Golconda Mill. A disastrous fire at the mill halted operations in 1919, and the Golconda has been dormant since.

During the second world war, premium prices for copper, lead and zinc renewed activity in the area. The Alpha Mine and the Summit Mine, both located immediately to the east on veins which cross the Chico Properties, shipped ore to the Tennessee Mill. The Tennessee-Schuylkill Mine, located 7 miles north of the Chico Claims, produced 150 tons per day of crude ore averaging 7% zinc, 3.5% lead and 20 ounces of silver per ton. For the duration of WW II, mill capacity limited development in the area.

The value of metals produced from the District during the years 1904 through 1948, (US Bureau of Mines, 1948 Annual Report) was about 22.5 million dollars at 1948 prices, (nearly one billion dollars at today's prices). Values were principally in lead and zinc, but with substantial amounts of copper, silver and gold.

During the 1950's and 1960's, there was sporadic development on the Chico Property when the government paid a bonus for silver. The Mint, Cashier and '98 Mines produced 20 to 50 ounces of silver per ton of ore. In this interim, the Jamison Mine was developed to the 400 foot level and stockpiled low grade copper, lead and zinc ore. A small mill was installed and operated for a brief time on the property, but production statistics are unavailable. Approximately 1,000 tons of ore remain stockpiled.

## History and Production (continued)

Currently Pennzoil-Duval Corporation, bordering the Chico Property to the Northwest, is reportedly producing 18,000 to 20,000 tons per day of open pit ore averaging 0.5% copper and 0.045% molybdenum, plus other precious metals.

### REGIONAL SETTING

The Cerbat Mountain Range constitutes one of the many north-south trending, fault block ranges of the southwestern desert. They consist primarily of metamorphosed pre-Cambrian igneous and sedimentary rocks, cut by later intrusions of Mesozoic(?) granite and monzonite porphyries, known locally as the Ithaca Peak Granite, and by Tertiary volcanic dikes. Centering around the Ithaca Peak intrusive, mineralization is typically copper and molybdenum sulfides, now being mined by Duval. Surrounding the intrusive is a zone several miles wide of lead-zinc-silver bearing veins which traditionally change into veins of intense silver mineralization.

### CHICO MINES GEOLOGY

The vein type ore deposits occur in clefts or cracks in the country rock in which the mineral material precipitated from aqueous solution (hydrothermal fissure veins). It is probable that these fissures formed from forces accompanying the emplacement of the Ithaca Peak intrusive.

Many veins, occurring in nearly vertical fault fissures, strike northwest and outcrop for considerable distances. The fault fissures are largely occupied by breccia with abundant shearing and some gouge. Ore lenses, or shoots, though not continuous, are numerous and tend to have greater vertical rather than horizontal extent. Concentrations of extremely high-grade ore appear to favor vein junctures.

Most of the veins appear to be associated with the Bronco Dike. The Dike is a prominent linear structure which traverses the Chico Property for three quarters of a mile. It varies from 20 to 70 feet in width, strikes North 10° East and dips 60° Southwest. The Dike is composed of a least four rock types and cuts all lithologic units in the area. It is composed primarily of Ithaca Peak granite, an equivalent of the Duval Ore-body. The Ithaca Peak

## Geology (continued)

granite is, in turn, intruded by smaller dikes of rhyolite, andesite, quartz and diabase. Conditions of rock associations are reported to be similar throughout the 400 foot depth of present workings, now flooded, on the Dike. The open, permeable nature of the Dike is evidenced by the considerable alteration (chloritic, sericitic) of all major rock units composing the dike, which also enhances the probability of secondary enrichment. Geochemical sampling has shown the Dike to be anomolous in silver, lead and zinc. Electromagnetic surveying has also indicated anomolous areas centered on the Dike.

At least six major vein systems traverse the Chico Claims, trending northwest from Stockton Hill towards intersections with the Bronco Dike. They are the Summit Vein, the Alpha, the Nighthawk-Cashier, the Mint-'98, the Logas, and the Little Bon-Jemison veins. These veins are primarily composed of sheared, fractured, crushed and recemented quartz. They are generally less than six feet in width with an attendant gouge zone of clays one or two feet in thickness which favors the foot wall, but often as not, occurs on both walls of the vein. These veins are separate structures which contain known concentrations, shoots or lenses of high-grade ore. The concentrations are of limited tonnage, perhaps several thousands of tons each, and are randomly contained within the veins with a tendency toward vein junctures with other structures, such as dikes or other veins. "Barren" quartz vein material is usually gray in color with pyrite laced microcrystalline chalcedony masses enclosing fragmented milky quartz. This "barren" material generally carries several ounces of silver per ton. Results from limited electromagnetic surveying are inconclusive, but suggest several anomolous areas which probably are indicative of shallow ore deposits along the vein.

The primary mineralization in the Chico Property is an assemblage of chalcopyrite, galena, sphalerite, argentite, pyrite and arsenopyrite together with a variety of sulfa salts and gangue minerals. The oxidized portion of the veins range from 50 to 300 feet in depth and may be very rich in silver chlorides, silver bromides and native silver with lesser concentrations of native gold.

## ORE RESERVES

The Chico Property contains base metal-silver veins, oxidized silver-gold veins and, possibly stockwork type copper. Data from past developments, publications and reports are insufficient, or unavailable to completely delineate the ore bodies for volumetric analysis. However, there is ore exposed in various underground workings and many places on the surface; prospect pits, trenches, dumps, etc.

More than 1,000 tons of base metal-silver ore has been stockpiled from the Bronco Dike and reportedly much more is exposed in the Jamison Mine which has been developed to the 400 foot level. Mill tests results reported by Denver Equipment Company's Ore Testing Division, averaged 0.03 ounces of gold, 6.0 ounces of silver per ton, 1.7% zinc, 0.92% lead and 9.5% iron. Results from laboratory batch selective floatation test show the ore can be beneficiated to recover nearly 90% of the copper, lead, zinc and silver and approximately 40% of the gold. High-grade shoots encountered in the Jamison Mine ran as high as 12 ounces gold per ton, 50 ounces silver, 12% copper, 6% lead and 2% zinc. The Dike traverses the property for nearly three-fourths of a mile. It could yield in excess of 10 million tons.

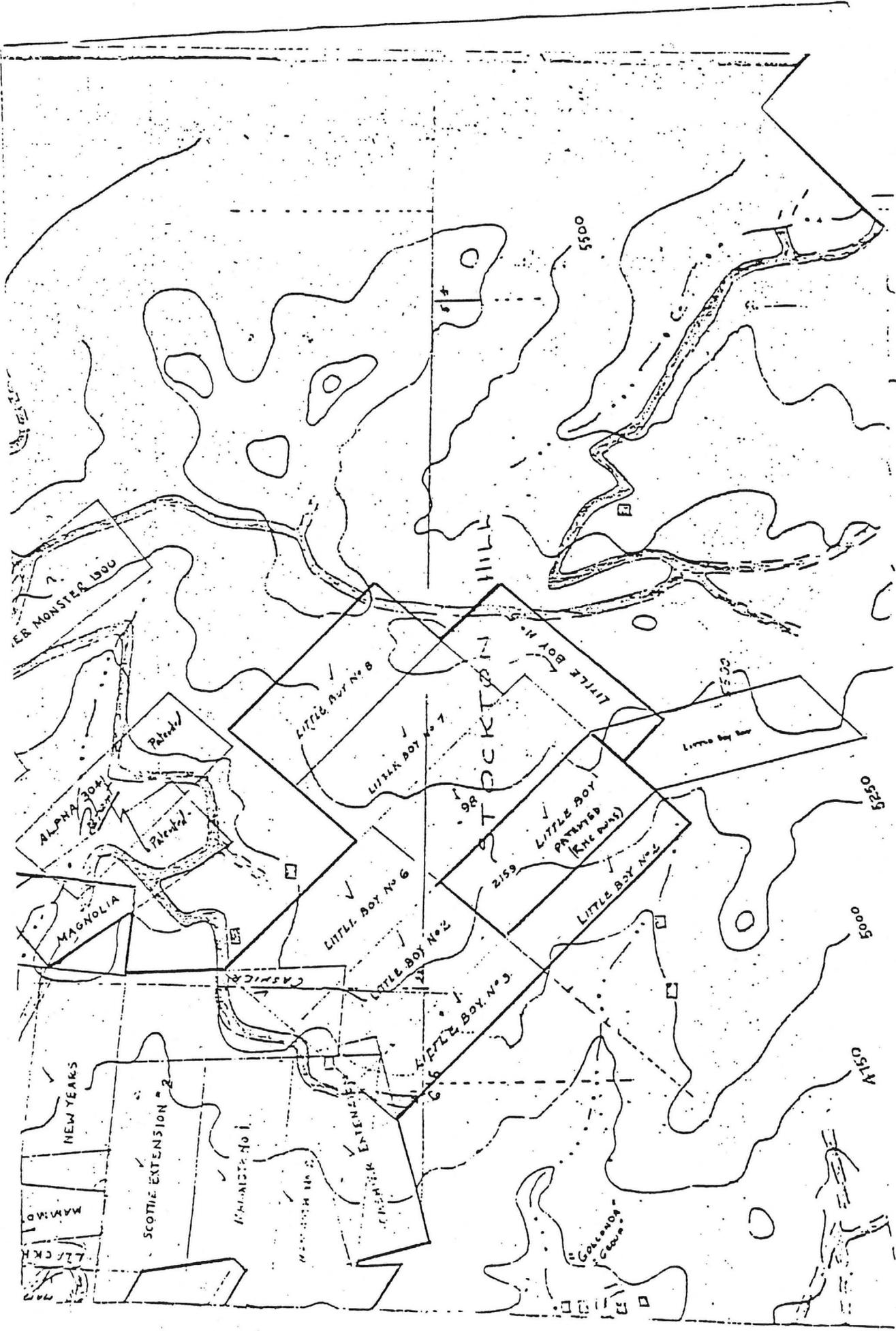
Numerous veins traverse the Chico Property. Oxidized portions of these veins are known to contain ore shoots rich in silver and gold. Assays imply these shoots can be surface worked for 20 ounces silver per ton. The shoots are generally less than three feet wide and extend to an average depth of 100 feet. Although some of these oxidized ore shoots have been completely mine out, many high-grade ore shoots remain, many of which may be traced on the surface. One ore shoot averaging 14 inches in width was traced by Wm. Vanderwall, geologist, for over a quarter mile. Surface assays averaged 27 ounces silver and 0.08 ounces gold per ton. Samples from the underground workings at the 50 foot level on this same vein, averaged 47 ounces silver and 1.9 ounces gold per ton. The extent and tenure of these underground workings is unknown since they are presently caved near the 50 foot level.

Previous mining operations on the Chico Claims have produced some sizable mine dumps. The possibility of precious metal recovery from these dumps should not be overlooked. cursory examination indicates in excess of 150,000 tons of material averaging 0.02 ounces gold and 1.5 ounces silver per ton.

Rock equivalents of the Duval orebody are present on the Chico Property and abundant copper sulfate precipitate may be noted in the stream bed located in the west-central portion of the Property. This suggests the southward extension of the Duval orebody into the Chico Claims.

Adjacent Mines (continued)

The Tennessee-Schuylkill Mine records from 1901 through August of 1944, indicate 599,058 tons of ore were mined. Through 1948, the total tonnage mined would probably be between 600,000 and 700,000 tons. Most of the records of production on other mines in the District are quite brief or non-existent.



ASSAY SAMPLE DESCRIPTIONS

Map I.D. No/Identification No	Description
1/1	Surface of Bronco Dyke, Cu-Mn stains on diabase (?) - no visible minerals except green chloritic (?) alteration throughout.
2/2	Shallow underground sample from fault gouge along Bronco Dyke. Blue-black mudlike gouge with ubiquitous euhedral pyrite (Ca. 1mm)
3/3	Dump sample of upper Mint vein - mostly Qtz., py., py. xlt stepped and silvery colored, milky Qtz., some black oxide.
4/4	Underground sample of upper Mint vein, Qtz., py., galena, spalerite, good xlt sample high grade (?). Vein 18" wide at sample location, appears continuous with respect to Qtz., but py., ga., sp, spotty.
5/5	UG sample of Cashier vein. Primarily Qtz, py., sp.; vein 1' wide at sample location with green and white mudlike gouge 1' each side of vein. Sample taken at cave-in 50' down shaft.
6/6	Underground sample at unnamed prospect tunnel, oxidized sample with some residual pyrite. Brown color, oxidized, friable zone about 2' wide and continuous.
7/C-1	Dump sample at cashier tunnel - high grade ore reported from this tunnel but presently inaccessible. Sample partly oxidized with blue-green, white and black alteration visible minerals are Qtz., ccp., py., ga., sp. very dense and hard.
8/G-10S	Ore stockpile sample from Goetz shaft. Copper and iron oxides in fractures of very hard Qtz. vein. 5-10 tons stockpiled. Shaft caved and inaccessible but vein 2' wide at surface.
9/J-10S	Ore stockpile from Jamison 300 (?) foot level, massive chalcopyrite, pyrite and galena in Qtz host. Very high grade sample from ore shoot (?).

ASSAY SAMPLE DESCRIPTIONS (cont'd.)

Map I.D. No/Idenfication No.	Description
10/LB-1C	Underground sample of in-place oxidized ore pod ca. 1' wide, massive black coated ( $MnO_2$ ?) very hard Qtz. with brown limonitic (?) streaks, vugs with gypsum needles.
11/LB-IV	Same as above but sample cut across vein plus 1' gouge zone either side. Clay gouge brown to grey. Slickenslide surface adjacent to gouge.
12/M-IV	Underground sample from lower Mint vein - comb Qtz. with comb filled with calcite plus black oxide and few residual pyrite crystals. 4'-6' vein width.
13/water	Stream water approximately 100 yards from spring, here rocks in stream bed are blue-green from copper precipitation. White zinc precipitate downstream. Spring appears to drain dyke-vein system.
14/1	Surface sample from shallow pit oxidized vein - blue-green and brown coloration - vein 6" wide.
15/2	Same vein as above 400' uphill vein slightly wider and difficult to trace.
16/3	Underground sample from Bluebird mine; sample similar to 14/1&15/2 so same type vein
17/4	Wall rock to 16/3
18/5	Surface sample - same vein as 14/1 & 15/2 This vein tracable for 1/4 mile.
19/5	Ore stockpile sample of American Legion 400' level ore. Galena, pyrite sphalerite, high grade sample.
20/6	Ore stockpile sample at location of very high grade ore, now mined out - sample black, very heavy and hard. No visible minerals.
21/LB-1C	Fire assay of sample 10/LB-1C
22/J-10S	Fire assay of sample 9/J-10S

PACIFIC  
REGIONAL  
OPERATIONS, INC.

P.O. Box 716 • Scottsdale, Arizona 85252 • (602) 994-3147

MEMO

TO: File

SUBJECT: 1980-81 Annual Assessment Work - Chico Property

FROM: William Vanderwall, Geologist

The Chico Property contains 49 unpatented mining claims requiring not less than \$100 worth of labor, per claim, be performed each year. According to our agreement to purchase the property, we are required to perform said labor.

Toward this end, and our need for subsurface information on specific structures on the property, our geological staff selected four drill-hole sites. Three exploratory holes were drilled, the fourth being inaccessible to the drill rig. Clark-Oliver Drilling Company, Inc., 419 S 113th Place, Apache Junction, Arizona, 85220, was contracted to perform the drilling.

Hole #1, located approximately 1,750' WEL and 1,650' NSL, Section 31, designed to explore the junction of the Jamison vein with the Bronco Dyke is collared in the dyke near the adit of the Jamison Mine. Three rock types were encountered while drilling hole #1 to 115', namely granite porphyry, rhyolite and diorite, all of which yielded small amounts of sulfide minerals when panned. A grey quartz vein was encountered in the interval 70'-75' which assayed 0.21 ounces Au/ton, 1.32 ounces Ag and 2.1% zinc with a small amount of copper and lead. Considering the angle of the hole and the dip of the dyke, the quartz vein is approximately 3' wide.

Hole #2, located approximately 1,625' WEL and 2,700' NSL of Section 31, is also collared in the Bronco Dyke and was designed to explore the dyke as well as the junction of the cashier vein with the dyke. Three rock types were encountered while drilling to 120', namely, rhyolite, diabase and diorite, all of which yielded small amounts of sulfides when panned. Red and green quartz veins closely associated with the diabase assayed 0.31 ounces Au/ton, 1.63 ounces Ag and 2.7% zinc with lesser amounts of copper and lead. The quartz veins cut the diabase and appear to accumulate 7'-9' in total width.

Hole #3, located approximately 1,200' EWL and 1,100' SNL of Section 31, in the center of the Chico Basin near Duval property. It is collared just east of a rhyolite dyke and was designed to explore a gossanized quartz vein below the level of oxidation. Diorite and rhyolite were encountered while drilling hole #3. The target quartz vein appears from 120' to 127.5' but has major sulfides (50% of sample) from 122.5-125'. The rich zone assayed 1.46 ounces Au/ton and 12.65 ounces Ag with nearly 1% cu. 7% zinc and minor lead. Considering the angle of the hole and the dip of the dyke, the quartz vein is approximately 2.5' thick. Total depth of the #3 hole was 155' and is making 10 gallons per minute water.

Three holes were drilled, using Odex screw on casing, through the Jamison ore stockpile to determine depth of ore. The results indicate previous volumetric analysis must be discounted by 0.375. Thus our current calculations indicate 1,300 tons of stockpiled ore.

(See hole logs and assays in file)

Exploratory Drilling - Chico Property - July 14, 1981  
Air Rig - Clark Oliver Mining and Drilling Co.

Hole 2

Depth	Description	Panned Concentrates
0-5	DK, Limonitic rhyolite + Mn Stain	minor py (silvery)
5-10	Limonite Rhyo- Lightening	"
10-15	Rhyo - minor limonite stain	"
15-20	" "	"
20-25	Rhy - minor stain (Fe + Mn)	"
25-30	Rhyo	"
30-35	Rhy + Diabase (?) limonite stain	py inc.
35-40	Diabase limonitic stain	minor py
40-45	Diabase	"
45-50	Diabase	py inc.
50-55	Gouge (small H <sub>2</sub> O)	py inc.
55-60	Gouge + altered qtz	minor py + ccp
60-65	LT. Amorphous qtz (?)	minor py + ccp
65-70	" " (?)	" " "
70-75	Diabase (more H <sub>2</sub> O)	minor py
75-80	Diabase	"
80-85	Diabase	"
85-90	DK qtz (?) greenish	"
90-95	DK qtz (?)	"
95-100	LT, Green and red qtz	py inc.
100-105	reddish qtz	minor py
105-110	reddish qtz	"
110-111	gouge (H <sub>2</sub> O)	"
111-115	Hard fresh granite (diorite)	barren
115-120	" " "	"

TD 120 making approximately 2 gpm H<sub>2</sub>O

DK = dark  
py = pyrite  
ccp = chalcopyrite  
rhy = rhyo = Rhyolite  
LT = light  
qtz = quartz  
v = very  
f = fine  
inc = increase  
dec = decrease  
mag = magnetite  
ga = galena

Exploratory Drilling - Chico property - July 15, 1981

Hole 1

Depth	Description	Panned Concentrates
0-5	overburden + decomposed granite	minor py (silvery)
5-10	granite	"
10-15	granite + rhyolite	v. minor py
15-20	granite + rhyo (H <sub>2</sub> O)	v. minor py
20-25	granite + rhyo (rhyo inc.)	minor py
25-30	rhyolite + in.granite	"
30-35	rhyolite	"
35-40	rhyo	"
40-45	"	"
45-50	"	"
50-55	rhyo + f. gr. qtz.	py inc.
55-60	rhyo + f. gr. qtz. inc.	py inc.
60-65	rhyo	minor py
65-70	rhyo	minor py
70-75	gray qtz	py + ccp (minor)
75-80	granite	minor py
80-85	granite	"
85-90	granite	"
90-95	granite + qtz (?)	"
95-100	hard granite (diorite)	minor py
100-105	" " "	barren
105-110	" " "	"
110-115	" " "	"
TD 115	making less than 1 gpm H <sub>2</sub> O	

Hole 3

0-5	decomposed granite	minor py + mag (?)
5-10	dec granite	minor py + mag (?)
10-15	granite (diorite)	minor mag (?)
15-20	"	"
20-25	" (2 gpm H <sub>2</sub> O)	"
25-26	gouge + qtz shards	minor py
26-30	granite (diorite)	" + mag.
30-35	fresh granite (hard)	"
35-40	"	"
40-45	" (H <sub>2</sub> O inc)	"
45-50	granite fresh	minor py + mag (?)
50-55	granite + rhyo	barren
55-60	rhyo	"
60-65	rhyo	"
65-70	rhyo	v. minor bronze py

Exploratory Drilling - Chico Property - July 16, 1981

Hole 3 cont.      HFW 25' after 12 hours

70-75	rhyo	v. minor bronze py
75-80	rhyo	barren
80-85	rhyolite (H <sub>2</sub> O inc)	barren
85-90	rhyo	"
90-95	rhyo	"
95-100	rhyo	"
100-110	rhyo	"
110-115	rhyolite + gray f. gr. qtz.	minor py + ccp (?) + ga
115-120	rhyo + qtz	py + ccp + ga inc.
120-122.5	rhy + qtz inc.	py + ccp + ga inc.
122.5-125	"	" " " 1/5 sample
125-127.5	" qtz dec.	decreasing
127.5-130	rhyo + minor qtz	decreasing
130-135	rhyo + granite	minor py + ccp
135-140	granite + minor rhyo	py + ccp inc
140-145	granite (hard dioritic)	barren
145-150	granite " "	minor py + mag
150-155	granite	"

TD 155      making 10 gpm H<sub>2</sub>O

ODEX Ore Stockpile Holes

#1 5' to sand  
#2 5' to sand  
#3 6' to sand

approximately 5/8 of expected ore volume



D.K. MARTIN & ASSOCIATES  
Mining Development & Administration  
4728 N. 21st Avenue  
Phoenix, Arizona 85015

R E C O M M E N D A T I O N S

## RECOMMENDATIONS

### PHASE I

The first requirement for an exploration venture on this property is a detailed geological field study. This study would include the mapping of the types of rock outcrops, formation contacts, faults, vein systems, dips and strikes of the mineralized ore bodies, structural folds and any other conditions pertinent to ore deposits. During the preliminary field study, a drilling program would be proposed based upon assay results from surface samples and known values obtained from previous sampling. The shafts, drifts and adits which remain open should be investigated and mapped, while those which are inaccessible due to caving may be checked by drilling to substantiate previous known mineralized zones.

The results of this field study would determine the advisability of going into phases III and IV, although, all research to date indicates commercial ore may be found at depth. Regional studies indicate commercial ore will continue with depth which should be determined by deeper drilling.

### PHASE II

It is further recommended that about 4000 feet of drilling be initiated. The drilling equipment should be a down-the-hole hammer type, as diamond drilling would have difficulty penetrating and recovering adequate samples from the faulted, crushed and oxidized ore zones.

The drilling should be concentrated near the old workings (Jamison, Cashier, Mint, '98, True Blue), southerly towards the Golconda and northerly towards the Duval operations, to delineate the depth, grade, width and dip of the known mineral bearing veins.

Some commercial ore may be blocked out with the drilling program. A few deeper holes will determine if the ore holds with depth as regional studies indicate.

### PHASE III

Rehabilitation of the Jamison and Mint drifts should be accomplished in order to gain access to the exposed veins and mined ore bodies. Resampling and mapping should be accomplished.

## Recommendations (continued)

### PHASE IV

Further metallurgical testing should be carried out on the dumps and stockpiles. Engineering studies should be carried out to evaluate the methods of treating this material. It is emphasized strongly that such studies have frequently a tendency to under-estimate the capital and operating cost along with over estimating the recoverable values. Heavy capital costs should not be incurred without a very healthy projected profit margin and it is felt that such margin will not be reached until good grade material has been opened by exploration and development.

From the available assays and reports, it seems likely that good commercial grade material exists in the undeveloped areas of the property.

The first two phases of the recommendations should be initiated at the onset, while phases III and IV could be carried out only if the drilling exploration results are positive.

## EXPLORATION TARGETS

(Phase I)

There are several major veins on the property which were worked in the past. New ore can probably be discovered at depth, below the old workings and along the vein systems.

The discovery of oxide ores on the surface demand immediate attention. Oxide ores usually can be mined and processed by leaching methods at a fraction of the cost of sulphide ores. These areas should be thoroughly investigated and then drilled to determine grade and depth.

Again, it is advisable to correlate the known information of the past workings, project calculated directions of vein systems, as with the Jamison, '98, True Blue and Cashier, and extend from a point of beginning.

# *Geo-Processing, Inc.*

Gibson Mine Division

P.O. DRAWER X

• MIAMI, ARIZONA 85539 •

August 11, 1977

## CHICO MINE GROUP

### INTRODUCTION

A Very Low Frequency electromagnetic survey was conducted on the CHICO mine group, in sections 31 and 32, T 28N, R 17W, and sections 5 and 6, T 27N, R 17W, G & SRBM, in the Cerbat Mountains north of Kingman, Arizona, at the request of Mr. Charles E. Goetz, of Phoenix, Arizona.

Three data line miles of survey, consisting of eight (8) survey lines and three (3) interconnecting lines. Orientation of survey lines closely approximated the survey lines proposed by Mr. Scott Hazen. The survey lines were oriented to cover the important areas of the project area so as to test the effectiveness of the VLF survey technique in defining the most interesting structural features and their associated conductors. Survey stations along the survey lines were spaced at 100 feet. Profile sections for each line and a plat showing the orientation of the survey lines are included with this report.

The survey indicates that the project area has complex structural features, however, the most interesting area as far as structures with associated conductors is the eastern half of Lines 1, 1A, 1B and also Line 2 could be included. This area could produce an interesting orebody. This could also be the northerly portion of the Cashier vein system.

### PRINCIPAL OF OPERATION

The VLF transmitting stations operating for communications with submarines at sea, have a vertical antenna system. The antenna current

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is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic fields meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. This equipment, the EM-16 unit used in this survey, measures the vertical components of these secondary fields.

The EM-16 is simply a sensitive receiver covering the frequency bands of the VLF transmitting stations, with means of measuring the vertical field components.

The receiver has two inputs, with two receiving coils built into the instrument. One coil has normally vertical axis and the other is horizontal.

The signal from one of the coils (vertical axis) is first minimized by tilting the instrument. The tilt-angle is calibrated in percentage. The remaining signal in this coil is finally balanced out by a measured percentage of signal from the other coil (horizontal), after being shifted by 90°. This coil is normally parallel to the primary field.

Thus, if the secondary signals are small compared to the primary horizontal field, the mechanical tilt-angle is an accurate measure of the vertical real-component, and the compensation  $/2$ -signal from the horizontal coil is a measure of the quadrature vertical signal. In other words, the vertical real-component (in phase reading) indicates the structure and the quadrature indicates the conductive nature of the structure.

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## DISCUSSION OF RESULTS

To organize the interpretive results, each survey line will be discussed starting with Line 1. Line 1, has an anomalous zone centering around station 3W and 6W. Both NAA and NLK transmitting stations gave anomalous responses, however, NAA gave the strongest structure and conductor response. Line 1A and 1B have anomalous zones in about the same area. One could interpret these responses as possible intersecting structures. Of all the survey lines run during this survey, Lines 1, 1A and 1B are the most interesting. Line 2 also indicates an anomalous zone centering near station 3W, this could be the Cashier vein system. Line 3 has several anomalous zones, a weak zone near 2W, a stronger zone possibly the Cashier vein system near 10W and another strong zone near 25W, possibly the Jamison vein system. Line 4 has several anomalous zones, with the eastern portion showing only weak structures with poor conductors, however, from approximately 27W, and to the west, stronger and interesting anomalous zones indicated by both NAA and NLK are evident. It can be observed that the Bronco dike gave anomalous readings on both Line 3, near station 25W, and on Line 4 near station 28W. Line 5 was not run because after clearing the road to make it passable, time was running short, along with not being familiar with the area, it was decided to name the first line to the south of the MINT mine, Line 6. Station 7E of Line 6 was right on the surveyed common sections corners of section 31, 32, 5 and 6, this gave us excellent ground control. Therefore, Line 6 and 7 were run in this area, leaving Line 5 for a future time. Line 6 and 7, gave mostly weak structures, however, centering near 1E

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on Line 6, and 3E on Line 7, NAA gave the best responses for this southern area.

The interconnecting line of stations 3W, from Line 1A to Line 1, seems to substantiate that the most favorable area indicated by this survey is the northern area of the property, such as, Line 1, 1A and 1B.

If further VLF survey work is considered, then this area should be expanded. Lines farther north toward Duval's operation is strongly recommended.

To further assist in defining the vein systems on this property, intermediate lines are necessary, due to the complexity of structures, additional lines between Lines 1B and 2; 2 and 3; 3 and 4; 4 and 6; and south of Line 7, could be considered. However, the survey singles out the northern area as the best bet to encounter possible commercial ore reserves.

## CONCLUSIONS AND RECOMMENDATIONS

The Very Low Frequency electromagnetic geophysical survey technique appears to give interesting correlating information on the known structures. Stronger anomalous zones were expected in the central portion of the surveyed area than were found by this survey, however, a very interesting area in the northern portion of the property was found. This area should be expanded with additional survey lines, both to the east and west and mainly to the north. In the opinion of the writer, this area shows the best promise of potential commercial ore reserves.

Intermediate lines in the central portion could be considered,

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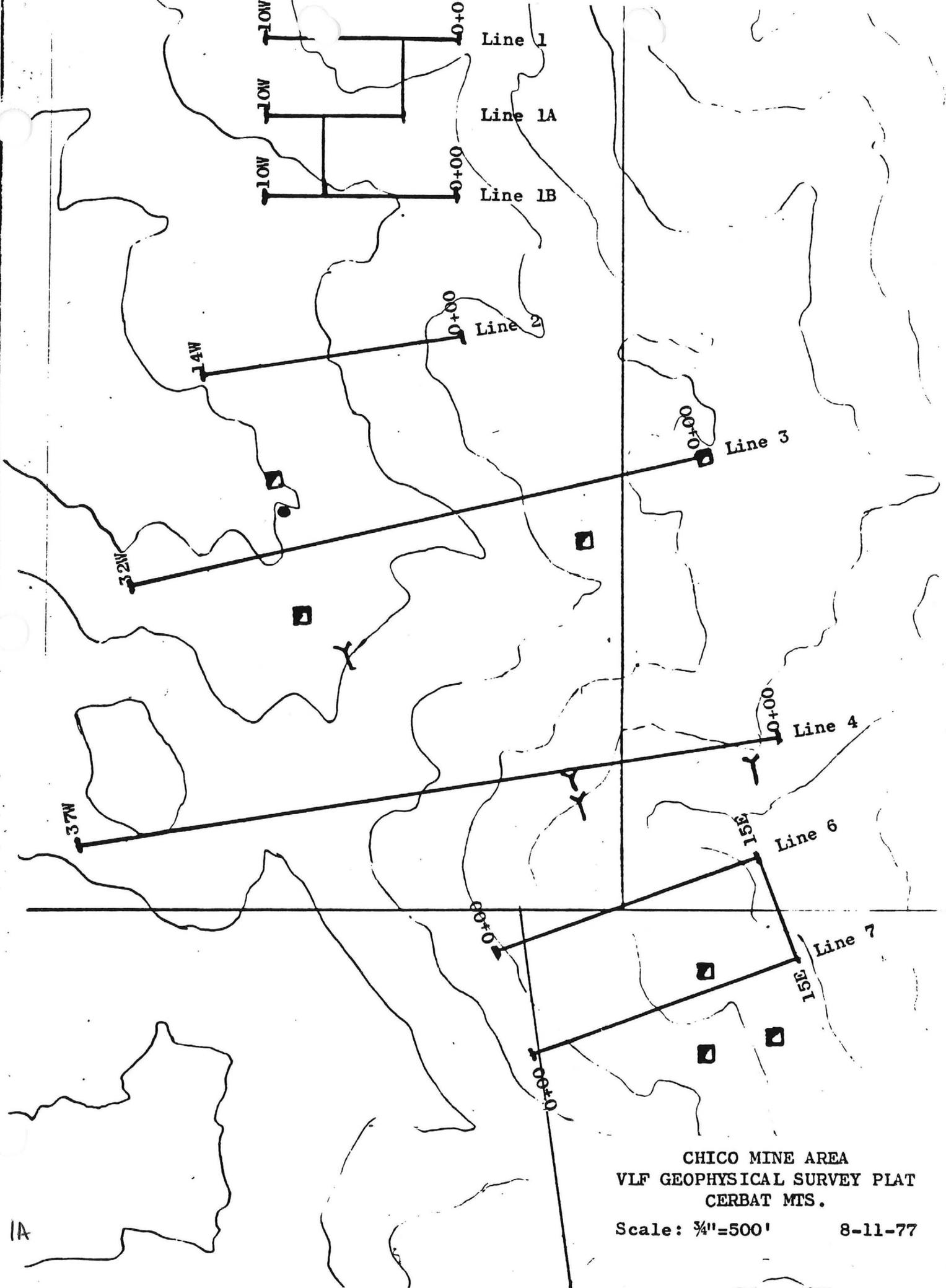
August 11, 1977

along with longer interconnecting lines along the strike length of interesting structures, as suggested by Mr. Scott Hazen.

This report was prepared by:

*Nicholas H. Carouso*

Nicholas H. Carouso  
President  
GEO-PROCESSING, INC.

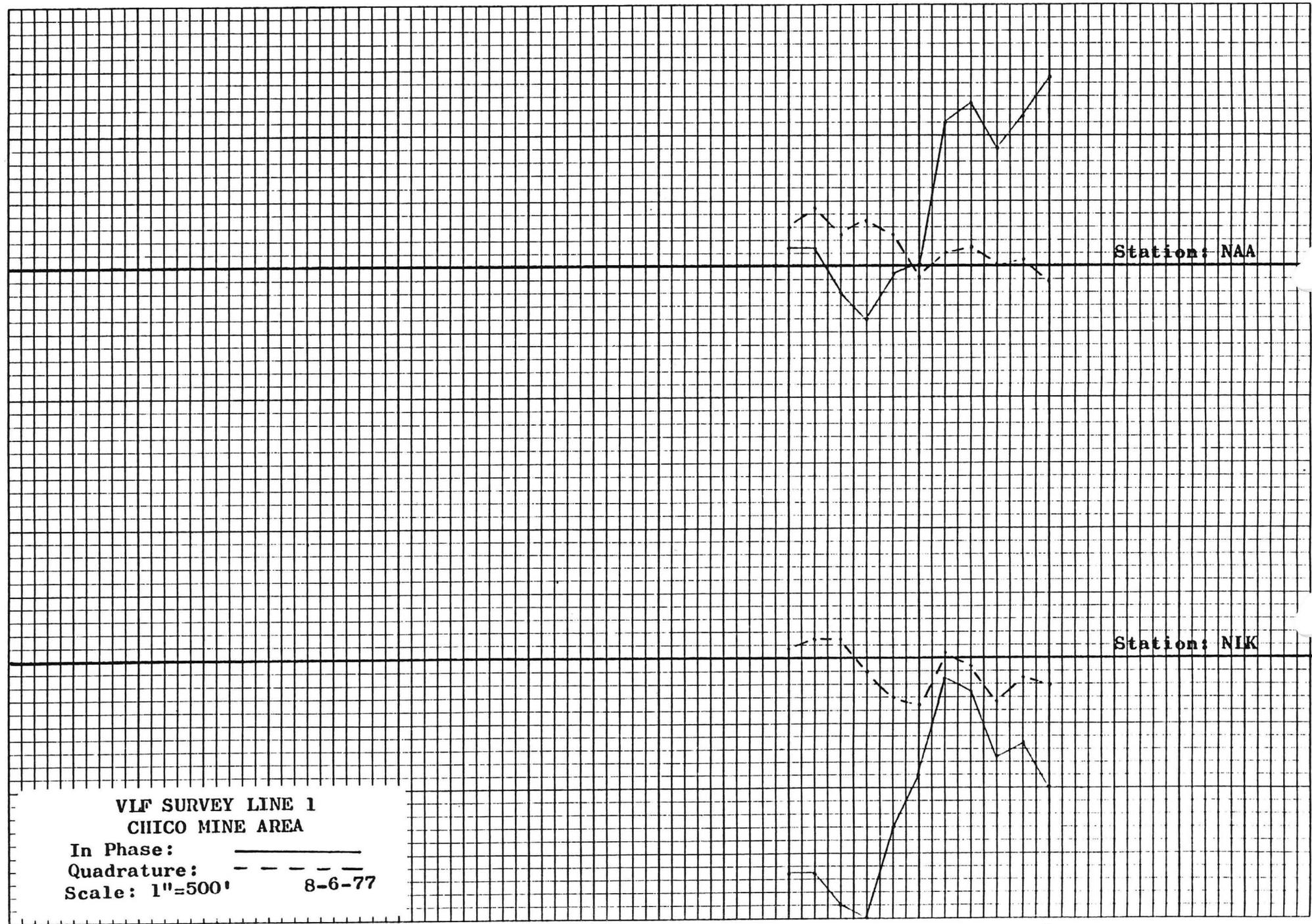


CHICO MINE AREA  
 VLF GEOPHYSICAL SURVEY PLAT  
 CERBAT MTS.

Scale: 3/4"=500' 8-11-77

1A

2A

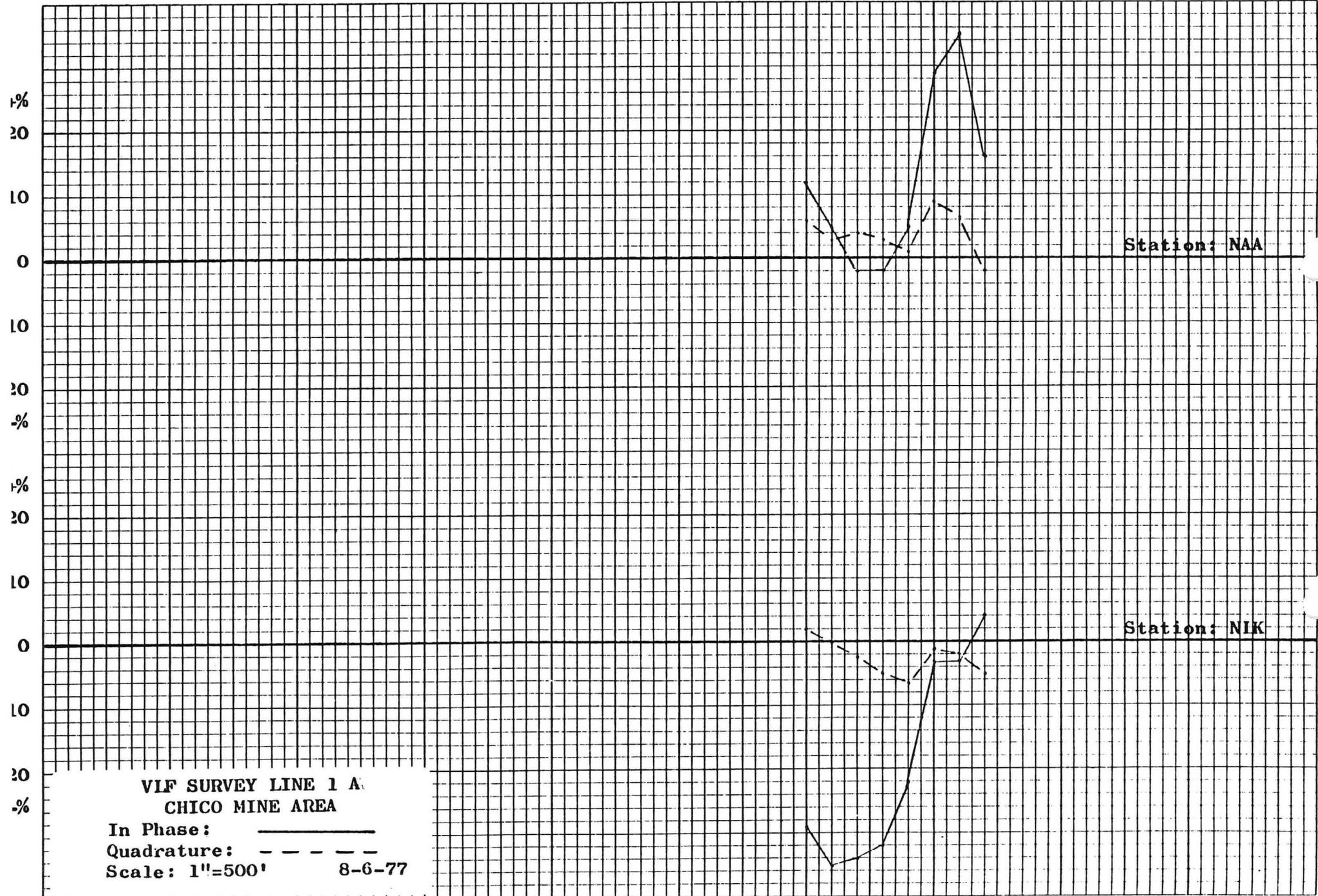


VLF SURVEY LINE 1  
CHICO MINE AREA

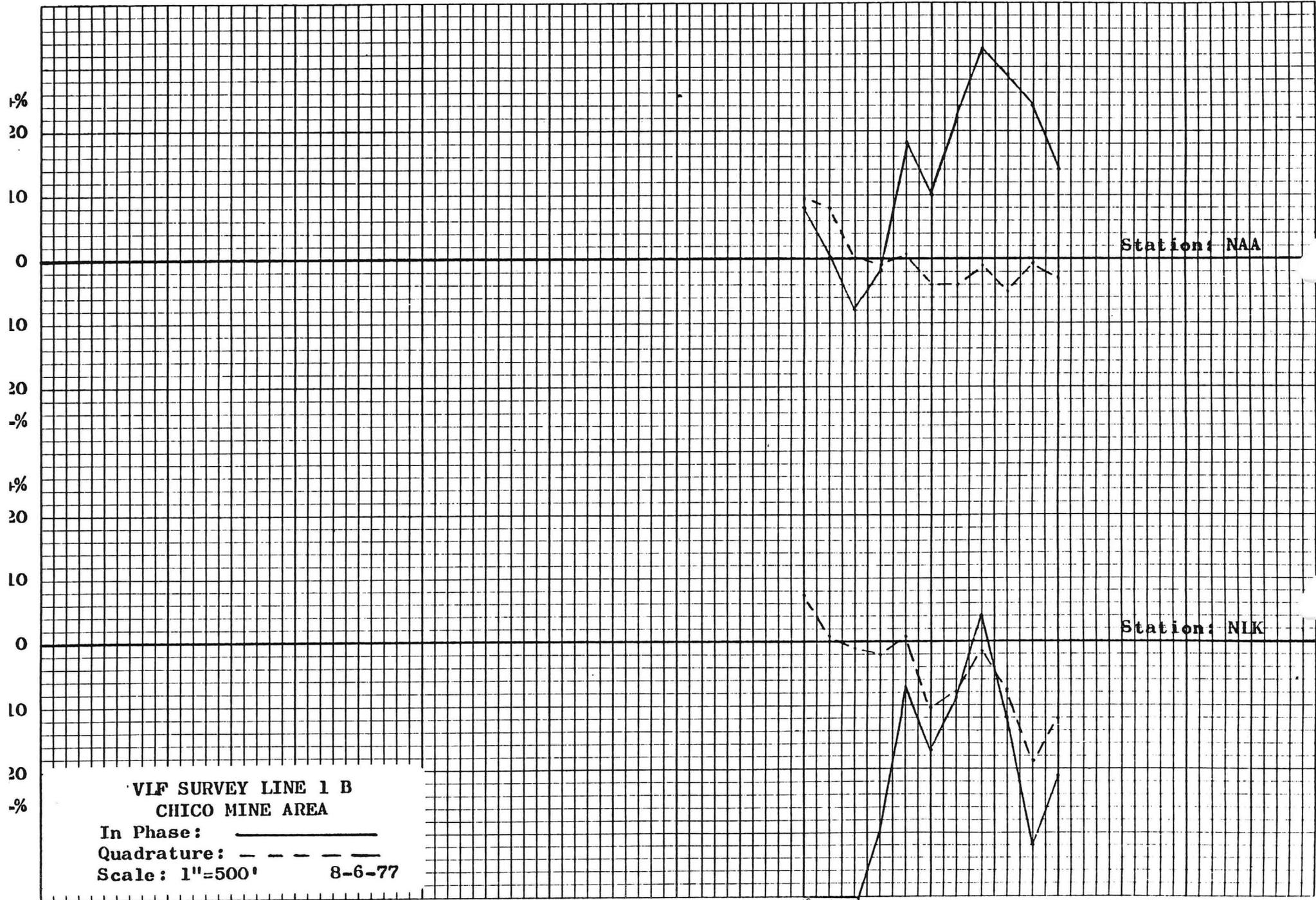
In Phase: —————  
Quadrature: - - - - -  
Scale: 1"=500'      8-6-77

MC      SW      OO+

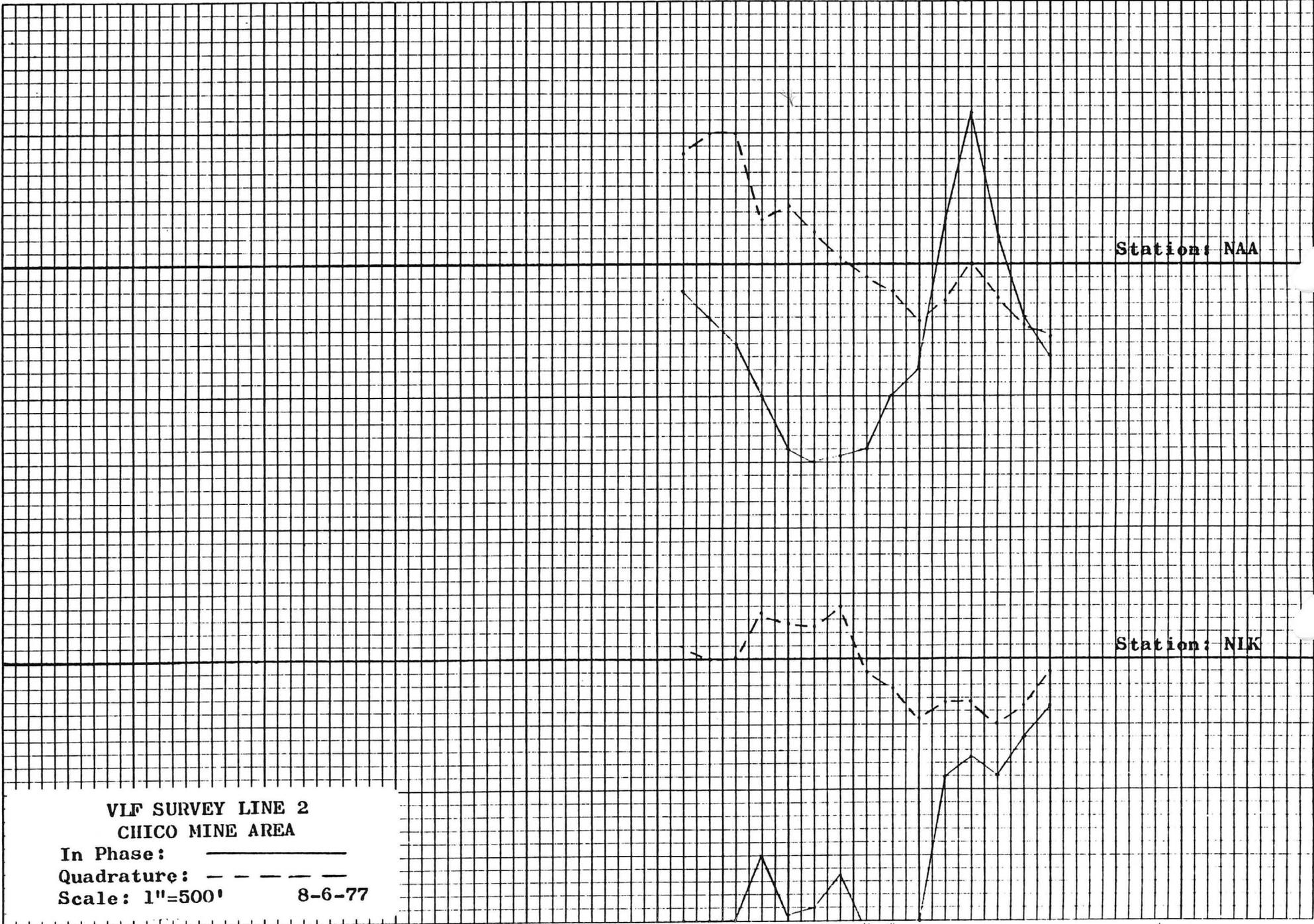
46



47



VLF SURVEY LINE 1 B  
 CHICO MINE AREA  
 In Phase: \_\_\_\_\_  
 Quadrature: - - - - -  
 Scale: 1"=500'      8-6-77



VLF SURVEY LINE 3  
CHICO MINE AREA

In Phase: ————  
Quadrature: - - - - -  
Scale: 1"=500' 8-5-77

Station: NAA

Station: NIK

+%

20

10

0

10

20

-%

+%

20

10

0

10

20

-%

MR

MK

MG

MC

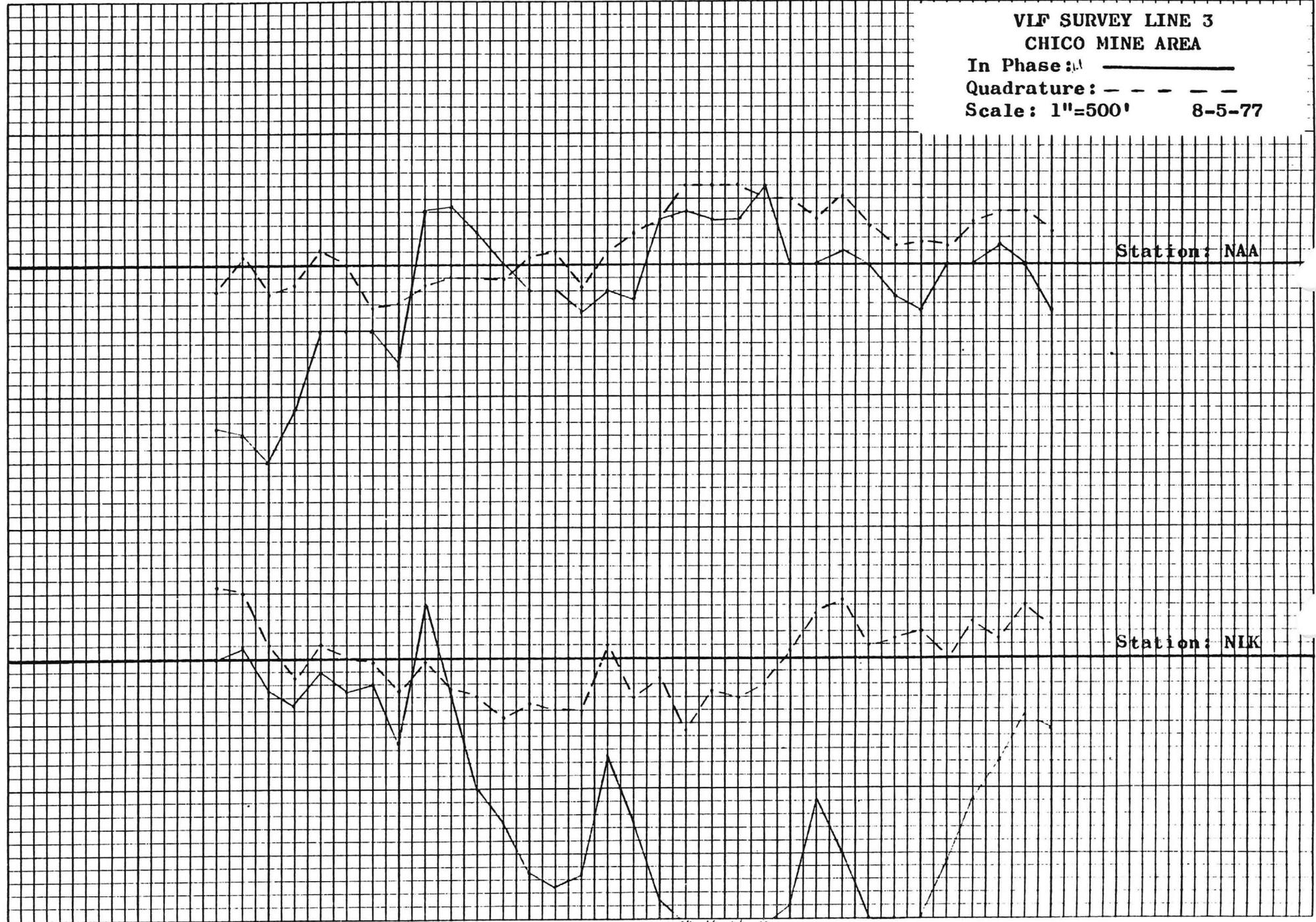
MS

MO

MS

00+

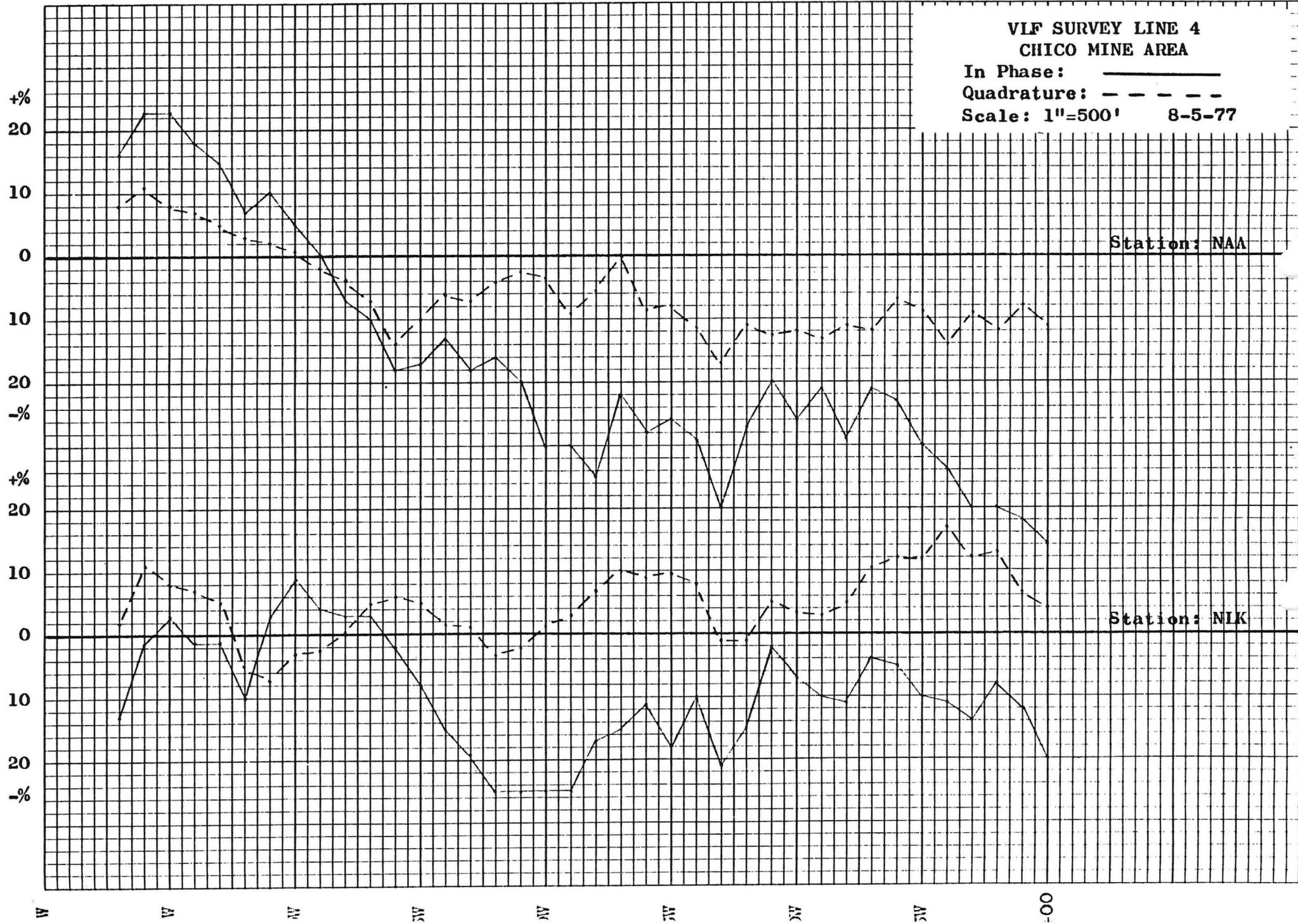
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0



7A

VLF SURVEY LINE 4  
CHICO MINE AREA

In Phase: —————  
Quadrature: - - - - -  
Scale: 1"=500' 8-5-77



8A

+%  
20  
10  
0  
10  
20  
-%

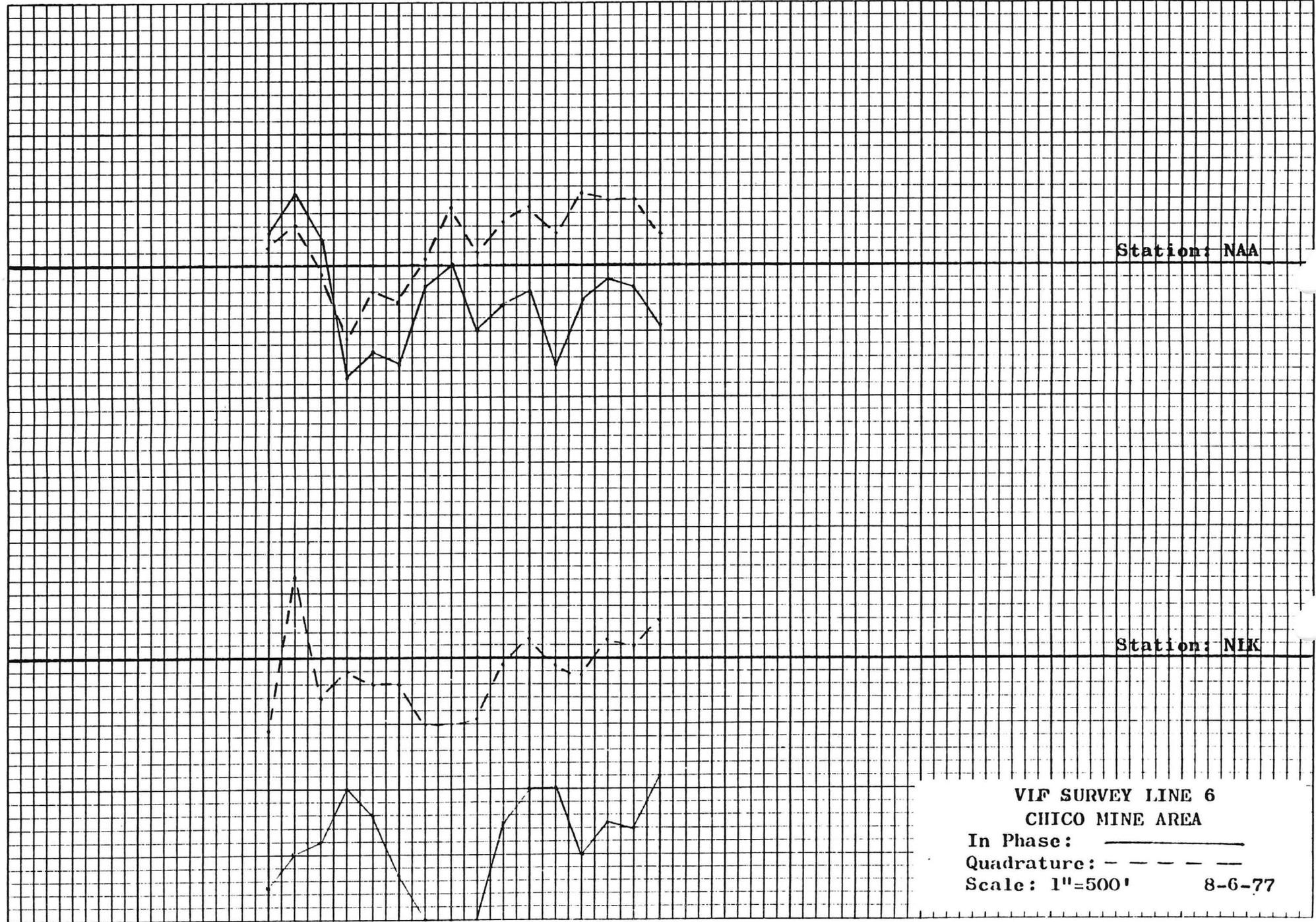
Station: NAA

+%  
20  
10  
0  
10  
20  
-%

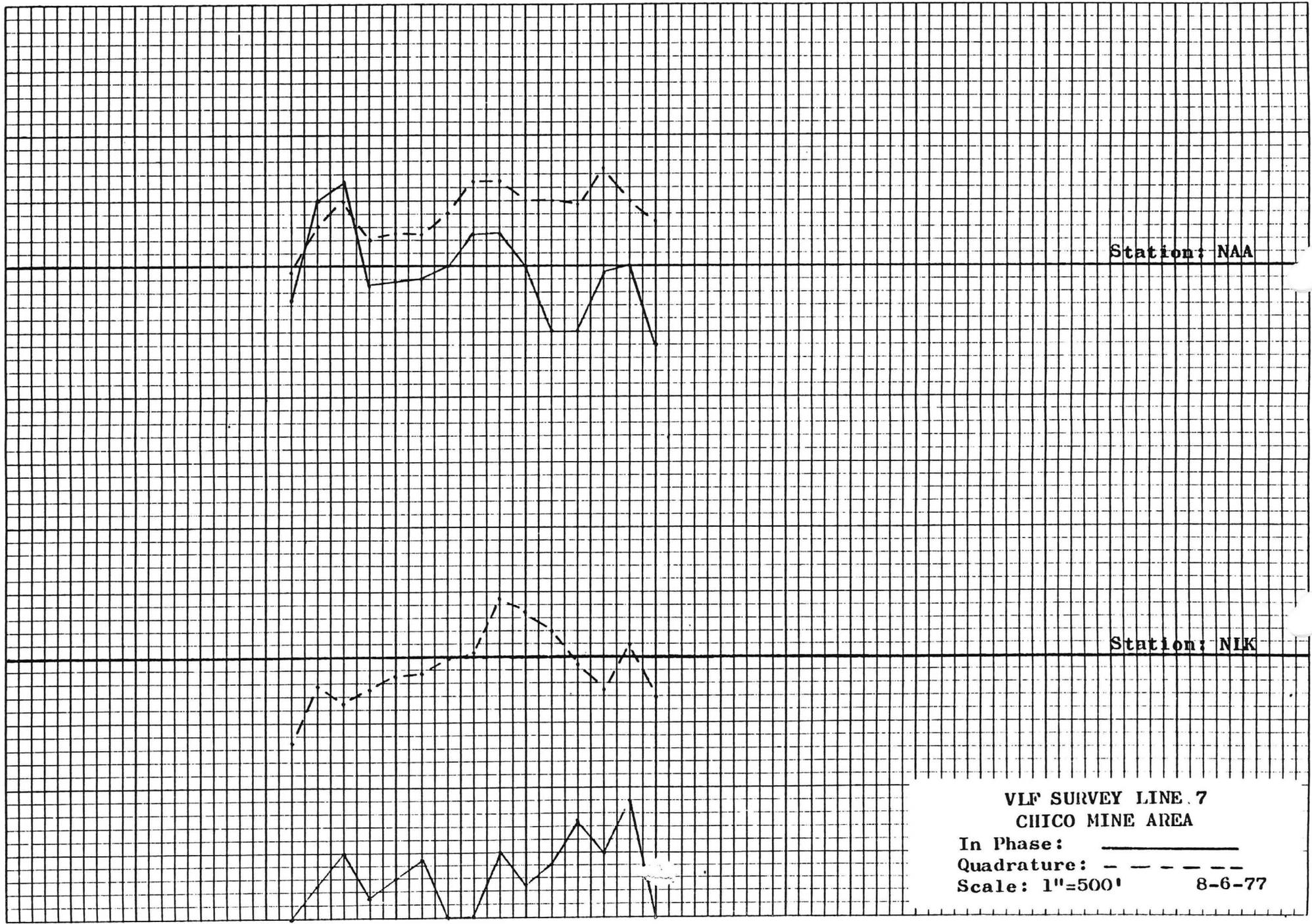
Station: NIK

100 5E 0E 5E

VIF SURVEY LINE 6  
CHICO MINE AREA  
In Phase: \_\_\_\_\_  
Quadrature: - - - - -  
Scale: 1"=500' 8-6-77



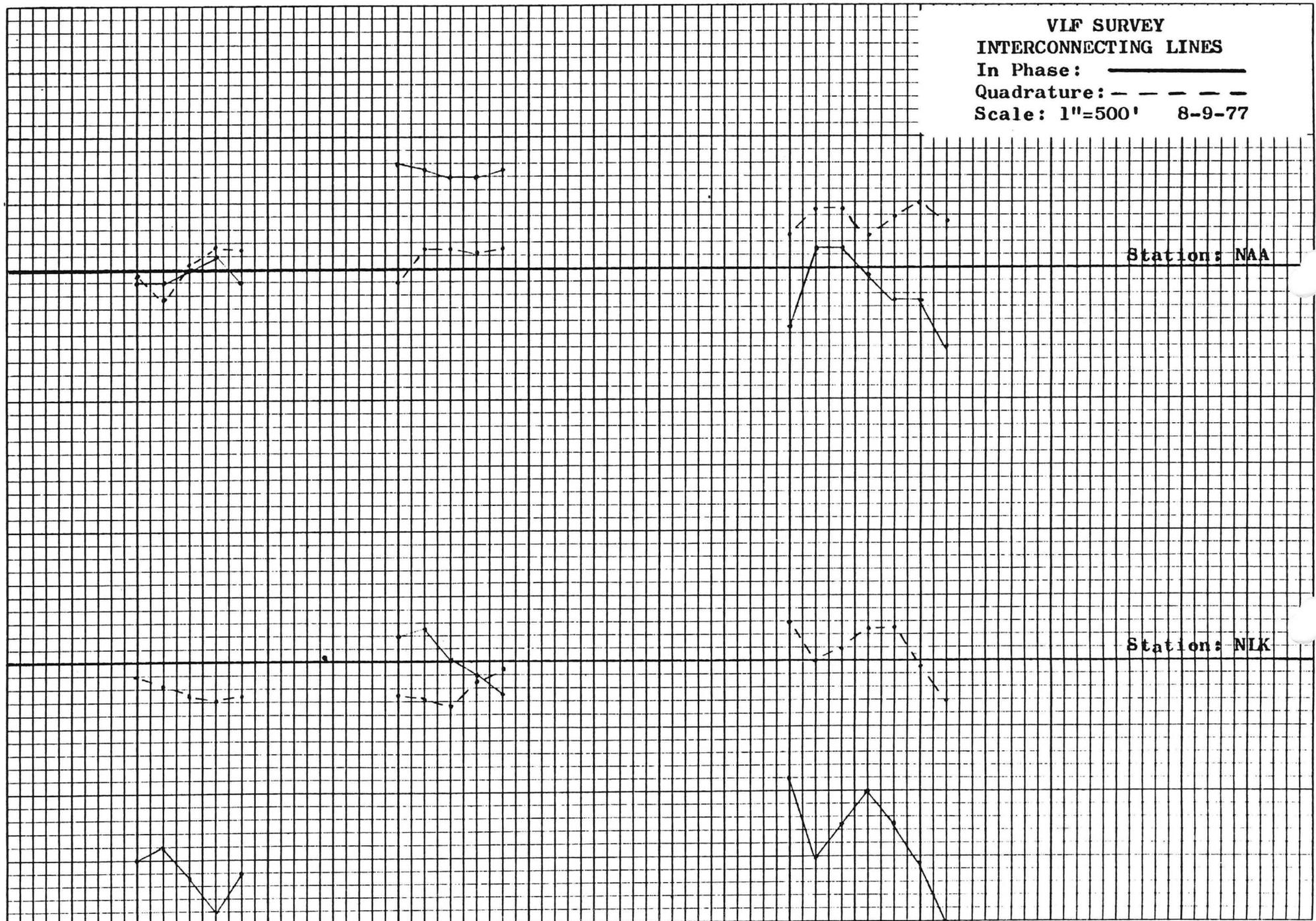
4N



VLF SURVEY LINE 7  
CHICO MINE AREA  
In Phase: —————  
Quadrature: - - - - -  
Scale: 1"=500' 8-6-77

401

VLF SURVEY  
INTERCONNECTING LINES  
In Phase: —————  
Quadrature: - - - - -  
Scale: 1"=500' 8-9-77



Stations 7W  
Lines 1B to 1A

Stations 3W  
Lines 1A to 1

Stations 15E  
Lines 6 to 7

**D.K. MARTIN & ASSOCIATES**

**MINING ADMINISTRATION  
AND  
DEVELOPMENT**

4728 NORTH 21ST AVENUE  
PHOENIX, ARIZONA 85015

(602) 246-9573

**GEOLOGICAL INVESTIGATION OF THE CHICO MINES AREA  
CERBAT MOUNTAINS  
MOHAVE CO. ARIZONA**

**Kevin Michael Kenney**

**2 AUGUST 1976**

## VEIN SYSTEMS AND RELATED STRUCTURES ON THE CHICO

### MINE SITE:

Several large linear structures referred to as dikes and/or veins, cross cut the property. The most noticeable of these is the Bronco Dike. It is several thousand feet long, extending from the north to southern boundary of the claims, and continuing on to an intersection with a dike swarm located in Todd basin. Its thickness varies from 50 to 70 feet and it dips flatly (about 40 degrees SW) with an approximate N-20 W strike. It cuts all lithologic units present in the mine area. The dike is composed of a dioritic to diabasic rock that is banded, with an aphanitic texture. The periphery is composed of a silicified gouge like material that resembles chert or quartzite and has heavy manganese staining. Slickenside and shearing evidence is present. Evidence of mineralization in the dike come from gossan caps, in place mineralization underground and the extent of underground mining carried out on the dike.

The next most notable linear structures present are two presumably non-mineral dikes that are located on either side of the Mint Mine on Steckton Hill. One of these dikes, the northern most is an aplite body approximately 4 feet wide and has pegmatite veinlets cutting it. A granite porphyry dike to the south of the Mint ranges to 10 feet in width and has strong relief. This dike appears to be non-mineralizing (from surface study). Both of these bodies project to an intersection with the Bronco dike.

The last of the structures that are noticeable are the veins. Typically they are characterized by low relief, are capped by manganiferous stained gossans and are relatively hard to trace on the surface. Exploration cuts are the best method for locating these banded quartz gossans.

DESCRIPTION OF UNDERGROUND WORKINGS:

NAME: Bronco Dike Tunnel Page 4

LOCATION: East end of Scotty #1 extension. On the dike in the wash that descends from the Cashier workings. It is due north of the True Blue and adjacent to the mill site.

MINE DESCRIPTION: Present condition- entrance partially blocked by wash debris. Tunnel is partially blocked by mud deposit and rear of mine under 2 feet of water but accessible. Wall conditions are stable but rotten rock is abundant. The main workings follow a vein that trends to the nw-se. The east part of the vein splits into two segments and the vein is 4 to 5 inches wide mineralized by quartz, galena, sphalerite and argentite. Assay # 2-10-20 reports 2.912 oz AU and 3.89 oz. Ag. There is one small stope, track is in place and there is no timbering.

Across the wash from the above workings there is an inclined shaft that is flooded presently. This is also on the Scotty Extension claim. This shaft is collared on the Bronco dike, heads east under the dike and it is rumored that good values were taken from a "white gouge zone"

several 10's of feet below the surface. A similar geuge zone is present east of the shaft in the wash. The shaft was pumped down 20 feet in January of '76 and it took 2 days for it to reach its present level. There is track in the shaft and the headframe is down.

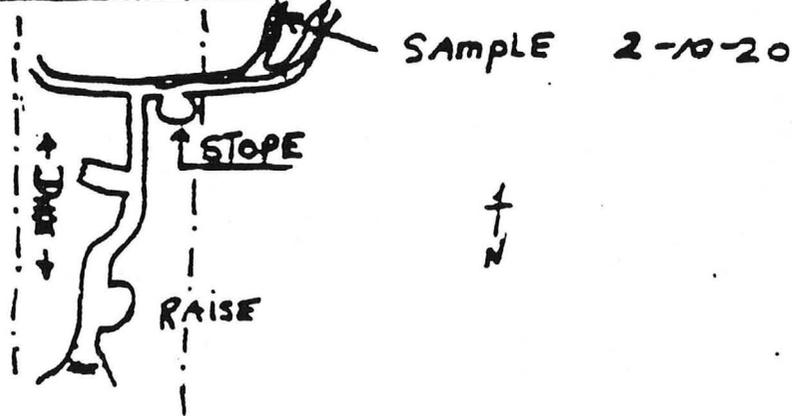
NAME: Jamison Mine - Golden Elisabeth Tunnel page 4

LOCATION: Shaft and tunnel entrance located on the Mammoth #1 lode mining claim adjacent to the south boundary of the Scotty Extension #2 and on the east boundary of the True Blue patented claim and adjacent to the mill site

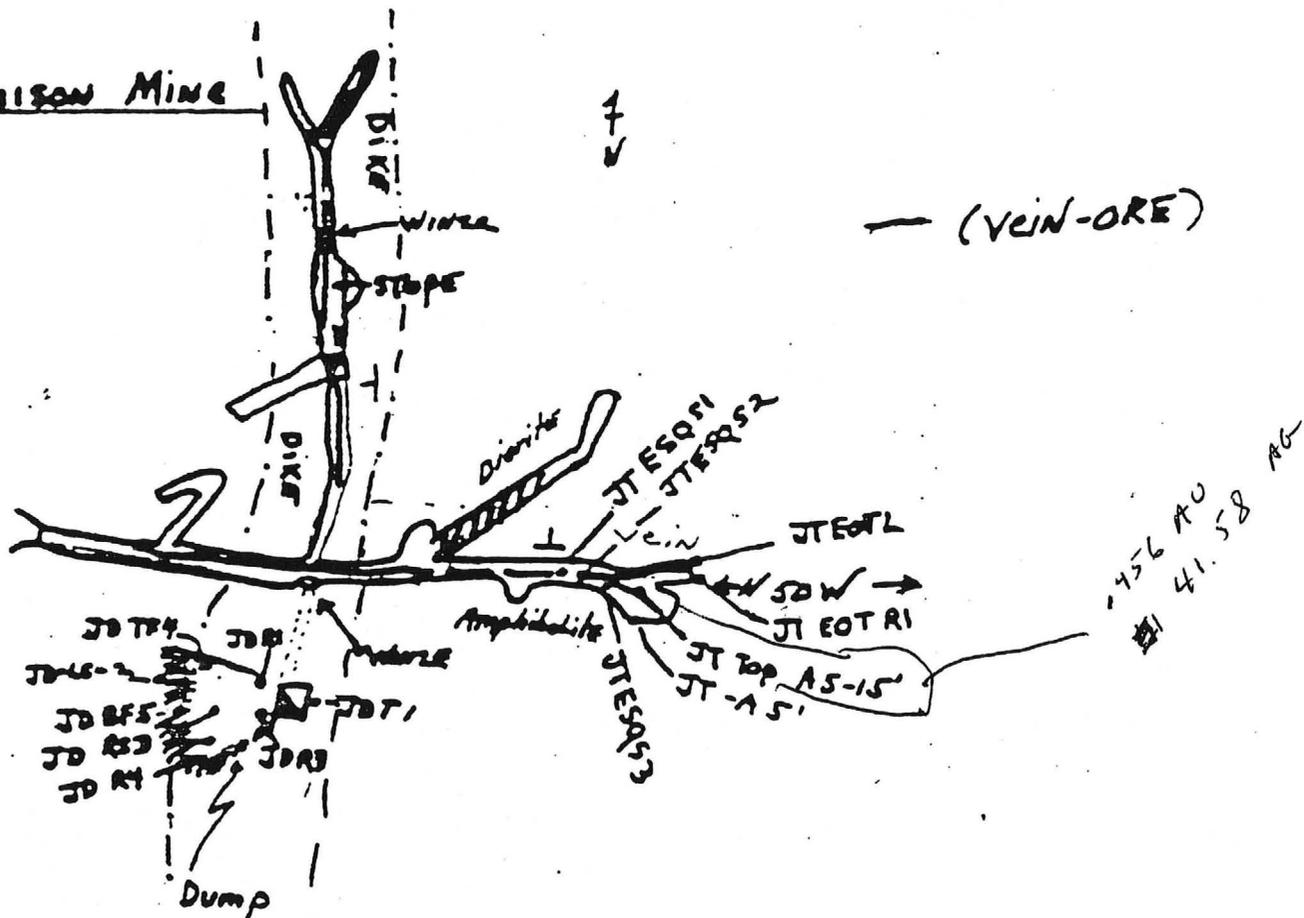
MINE DESCRIPTION: Both the shaft and the tunnel are located on veins that appear to cross out the dike. The Elisabeth tunnel intersects the upper workings of the Jamison mine. OLD WORKINGS: Most of the development work done in the Jamison were done in the dike its self.

The shaft was deepened to 300 feet by Goetz and some ore was produced, mainly chalcopryite, pyrite, galena and sphalerite. Presently the bottom of the shaft is flooded. Fairly extensive workings are noted but vein width is not great, generally not more than 3 to 4 feet. and the lower workings are inaccessible. No estimate can be made at this time as to the tonnages that have been removed. In the quartz veins present in the dike chalcopryite, galena and sphalerite constitute the bulk of the mineralization.

Benson Dike Tunnel



JAMISON Mine



See Iron King Assay Sheet  
2+3

New workings in the Jamison consist of two tunnels that were driven by Geetz. The main extension is centered on a crosscutting vein that intersects the dike. No stopping was done here. There does not seem to be any workable width to the vein, it just pinches down to several inches. The vein dips to the NW steeply and the gouge zone is several (10 feet) wide. Some copper mineralization is noted, but generally the vein is weak. The other tunnel is cutting good solid diorite, On first glance the walls seem barren and no actual vein is followed. The rock is highly sheared or jointed and there is disseminated mineralization on these fracture surfaces. This material closely approaches porphyry type mineralization..

Two more tunnels and several pits explore the "Jamison vein" on the surface above the shaft collar. No work was done on these due to poor condition.

**NAME: CASHIER MINE**

**LOCATION:** On the cashier claim which is a north-south trending parcel. It abuts the Scotty Extension #2 and Mammoth #1. It is located in the wash up the hill from the mill site.

**MINE DESCRIPTION:** The Ableman tunnel is located in the wash described above. It is caved in 40 feet from the portal. The cave in is man caused, not natural. The rear of the caved zone is flooded with 8 feet of water. A shaft further up the wash is collared on the Cashier vein, is eighty feet deep and is reported to have good ore in it (F.J. Denton). Refer to the report

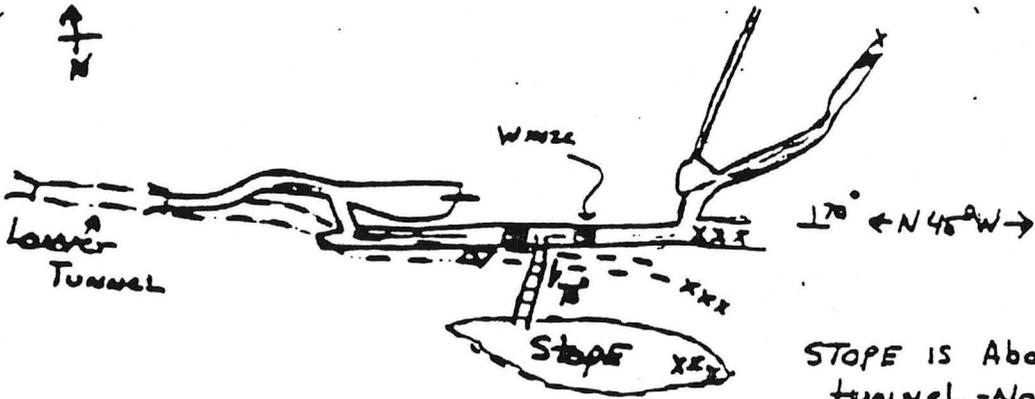
by E. Ross Householder on the Cashier mine for details. It seems that the Ableman tunnel is following a vein but it is not certain that it is the Cashier vein. The tunnel may be there for haulage from the shaft. Actually the tunnel runs at an angle to the general trend of the veins of the area. The dump assays show little mineralization other than pyrite or chalcopyrite. This mine has a good story behind it. A cross cut is believed to exist where the leasee attempted to mine under several other nearby veins. Reports say that good grade ore was taken from this cross-cut before the lessor closed it down. This is one vein system that needs some work done on it, it has potential.

**NAME:** MINT MINE page 7

**LOCATION:** The mint mine is located on the little boy #6 claim in conflict with the south end of the cashier claim.

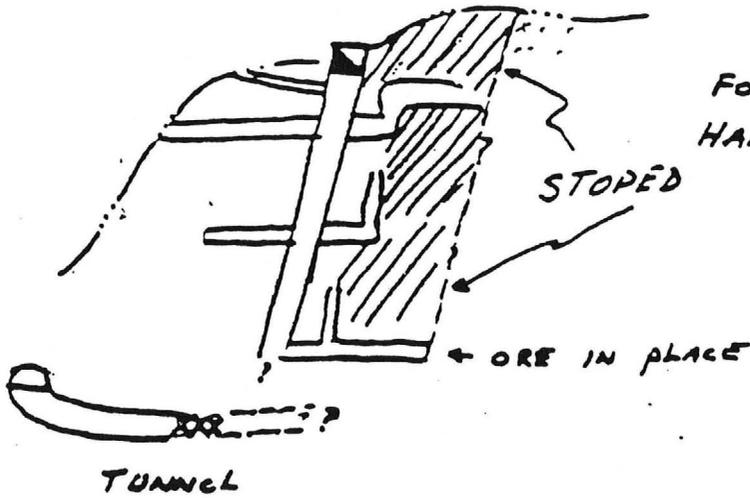
**MINE DESCRIPTION:** The mint vein is developed by two long tunnels, stopes and surface exploration pits. The lower tunnel is 60% timbered due to bad ground in the amphibolite. The vein is narrow and is composed of quartz with galena and sphalerite and minor copper sulfides. The lower tunnel penetrates the water table and thus the rear

# MINT MINE



STOPE IS Above the tunnel - Not to the SIDE

## LITTLE BOY MINE / SHAFT CROSS SECTION



Foot Wall - Granite porphyry  
Hanging Wall - Amphibolite

section is flooded but passable. One stope is developed by several raises and there is at least one winze that is flooded. Take caution when exploring this working--very DANGEROUS.

The upper tunnel is in good condition, no flooding. The walls are in good shape for being in the amphibolite. Again the quartz vein is present, it dips steeply to the NW almost vertically. one fair sized stope is accessible by ladder. Here the vein swells to 4 feet across. This corresponds to the stope in the lower tunnel. A winze in the floor leads to the lower workings, and timbering on the floor and below is visible, i.e. part of the tunnel floor is wood. The full extent of the old workings are not available due to caving ground and bad timbering. Goetz cleaned out the back of the tunnel and replaced some of the timbers but for the most part it is not passable.. The quartz vein is mineralized by good values in argentite, galena, sphalerite, native silver etc. Native silver has been found by the writer in the back sections of the workings along with argentiferous pseudomorphs of pyrite.

It is evident underground that there is either a horse-tailing of the vein or an intersecting vein cuts the mint, due to the perpendicularity of some of the workings. At

..... is present



of heavy sphalerite and galena and some chalcopyrite. The vein where seen stood clean by its self and could be recovered easily with little waste. All workings were developed in the competent porphyry dike. Considerable ore was taken from this mine but much remains due to that mining was halted at the claim boundary. In two tunnels ore was present on working faces.. The vein stands almost vertical with a dip of 70 degrees. The workings are accessible, but the ladders break off about 75 to 100 feet from the bottom and the lower tunnels are dangerous to get to. Safety line is required.

The surface geology of the little boy claim group, including the '98' claim and the Goetz shaft can be characterized by an area of rocky terrain consisting of PG amphibolites cross cut by several mineralized veins and at least three dikes. One dike is a porphyry body described above. The other 2 are those noted in the mint area.. The Goetz shaft is collared in an extension of the 98 vein and is only 30 ft. deep. Good values from oxide ore reported in assay. A fair amount of shallow drilling was done on the 98 system and on projections of the mint and little boy, but these holes were too shallow and at bad angles and show relatively nothing. A good amount of dozer trenching and stripping has been done on the 98 system and it readily tracable for 2000 ft. on the surface. Good gossan is present and assays show fair silver values for surface material and gold is higher here to mechanical accumulation by weathering. A fair ton-

nage of ore , as oxide could be produced by stripping the vein surface carefully.

West of the Little Boy shaft gossan is exposed in road cuts and an area has been bladed off to expose good gossan. The quartz vein here 3 feet wide and has a possible projection towards the Mint structure.

North of the 98 system up in the little boy # 7 and #8 there is a very good possibility that at least two mineralized veins will be found. Here is the reasoning: The Alpha vein runs a course that would put it off to the north of the #8 claim. There is a possibility that it could outcrop on the #8 claim. The cashier vein which runs thru a claim south of the Magnolia and Alpha, up thru a wash would logically outcrop on the little boy #7 claim. These two possible veins have not been explored by the writer, but should be done soon.

#### CONCLUSIONS:

The Mint vein and associated veins of the 98 and little boy groups are at present the best prospects for conducting any type of ore finding program. Detailed geologic mapping coupled with geophysics (EM ) to locate anomalies upon which drilling can be done is the logical approach.

The cashier vein system should be mapped out and possible intersections with the Bronco dike be studied for possible areas of ore deposition, likewise with the

Mint vein.

A careful study of the area east of the Bronco dike tunnel is in order because of the trend shown by the veins in the workings. A possible intersection was not probed by the DuPont drilling program.

This report concludes a three month study of the Chico Mine area conducted by the author. Surface and underground geology was noted while the primary task of gathering assay data was accomplished. Detailed work was not possible due to lack of equipment and qualified help.

Respectfully submitted,



Kevin Michael Kenney

A.T. B.T. Chemical Engineering

B.S. Geology

M.S. Metallurgical Engr. (in Progress)

2 AUGUST 1976

IRON KING ASSAY OFFICE  
ASSAY CERTIFICATE

BOX 14 - PHONE 432-7410

HUMBOLDT, ARIZONA 86329

KEVIN M. KENNEY  
1301 Lemon St.  
Tempe, Ariz. 85281

January 14, 1975

NO.	SAMPLE DESCRIPTION	Gold oz/ton	Silver oz/ton	\$ Gold oz/ton	\$ Ag <sup>1000</sup> oz/ton	TOTAL
-1	26-A-1 Dr. VN	.006	0.82	.72	5.69	4.41
2	26A-2HG Dr. VN Lvs green	.032	7.64	3.54	34.38	38.22
-3	26-A-3 Dr. VN	.018	1.40	2.14	6.3	9.46
-4	26-B-1 Dr. VN metal clean	Tr	0.68		3.05	3.05
-5	26-B-2 dump	Tr	0.36		1.62	1.62
1-6	26-C-1 Rd to 98 VN #1000 south	.012	1.49	1.44	6.765	8.145
1-7	26-C-2 north 98	Tr	2.38		10.71	10.71
1-8	26-DC-2 Bone 9	Tr	3.30		14.85	14.85
1-9	26-DC-3 N of wall	.014	4.87	1.68	21.919	23.59
1-10	26-DC-4 S of wall	.030	4.38	3.6	19.71	23.31
1-11	26-DD-4 VN 1/2 ton Dx below 5' fill	.366	5.72	43.93	25.69	69.62
1-12	26-DCGD 6' x 12' hole metal CO	.384	35.64	40.60	160.42	206.42
1-13	26-DCGD-2 6' x 12' hole metal CO	.396	10.20	47.52	45.9	93.42
9-14	26-D-1B2 1/2 ton bag 1/2 road	.030	1.17	3.6	5.26	8.86
9-15	26-D-98B 1/2 ton 98B	Tr	0.78		3.51	3.51
9-16	26-D-98B 1/2 ton at 98B	.020	5.62	2.4	25.29	25.29
9-17	26-D-68V 1/2 ton VN 98B shale	.356	25.62	42.72	115.29	158.01
9-18	26-D-W1 1/2 ton VN over road Perched	.016	0.76	1.92	9.42	5.34
9-19	26-D-98W 1/2 ton VN 98B	.028	5.73	3.36	25.74	29.14
9-20	26-M-D 1/2 ton Mixed Dump	.066	1.38	7.42	6.21	14.13

IRON KING ASSAY OFFICE  
ASSAY CERTIFICATE

BOX 14 - PHONE 432-7410  
HUMBOLDT, ARIZONA 86329

GENE HUDSON  
RMC Corp.  
910 So. Hohokam, Suite 115-116  
Tempe, Ariz. 85281

an 99 Dec. 6, 1975

SAMPLE DESCRIPTION	Silver oz/ton	Gold oz/ton	Lead %	Zinc %	Copper %
3 JD-R4 <i>General Dump</i>	.018	1.78	N11	1.25	0.36
6 <del>XXXX</del> JT-ESQS1 <i>AND Square sets</i>	Tr	Tr	n11	0.65	0.02
7 JT-ESQS2	.034	1.29	N11	1.60	0.13
8 JT-ESQS3	.010	0.39	N11	1.05	0.02
9 JT-A5-2	Tr	0.20	N11	0.80	0.01
10 JT-EOT*R1	.014	0.49	N11	1.35	0.02
11 JT Top A5-15	.456	41.58	N11	19.55	3.98
12 <del>XXXX</del> JD-A51 <i>General Dump</i>	.016	0.59	N11	1.10	0.05
13 JD-RS3 <i>General Dump</i>	.030	1.25	N11	0.80	0.33
14 JD-T-1 <i>General Dump</i>	.020	1.64	N11	0.65	0.19
15 BP-1 <i>Little Boy shaft</i>	.256	13.42	4.92	18.70	0.32
16 BP-2 <i>Little Boy</i>	Tr	0.34	N11	0.65	0.02
17 JD-LS-2 <i>Dump</i>	Tr	0.68	N11	0.65	0.16
38 ME-1 <i>98 - from '98'</i>	.002	0.42	N11	0.55	0.05
39 <del>XXXX</del> ME-2 <i>Claim</i>	.004	3.08	N11	0.65	0.32
40 ME-3 <i>Slatt</i>	.028	5.07	N11	0.55	0.69
41 M-2 <i>new</i>	.010	0.67	N11	0.70	0.03
42 M-3	.006	0.24	N11	0.60	0.03
43 M-4	.564	5.70	N11	0.65	0.03
M-5	.006	0.32	N11	0.65	0.01
45 M-6	.080	2.70	2.44	0.65	0.03
46 M-7	.018	0.46	N11	0.65	0.02



Av 10715 oz 1.578% 0.335% 2.475% 0.71%

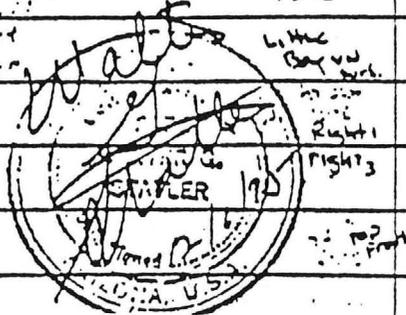
# IRON KING ASSAY OFFICE ASSAY CERTIFICATE

BOX 14 - PHONE 632-7410  
HUMBOLDT, ARIZONA 86329

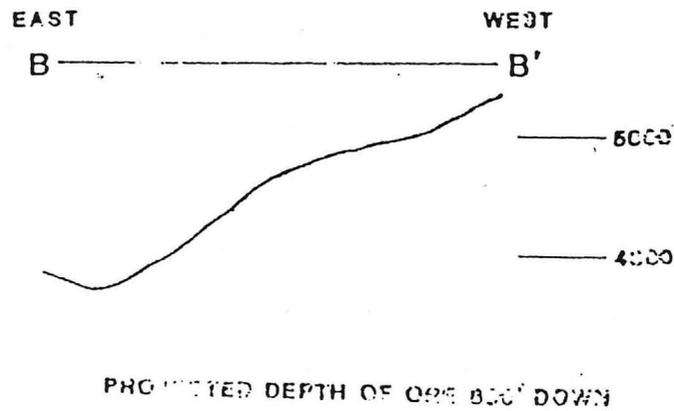
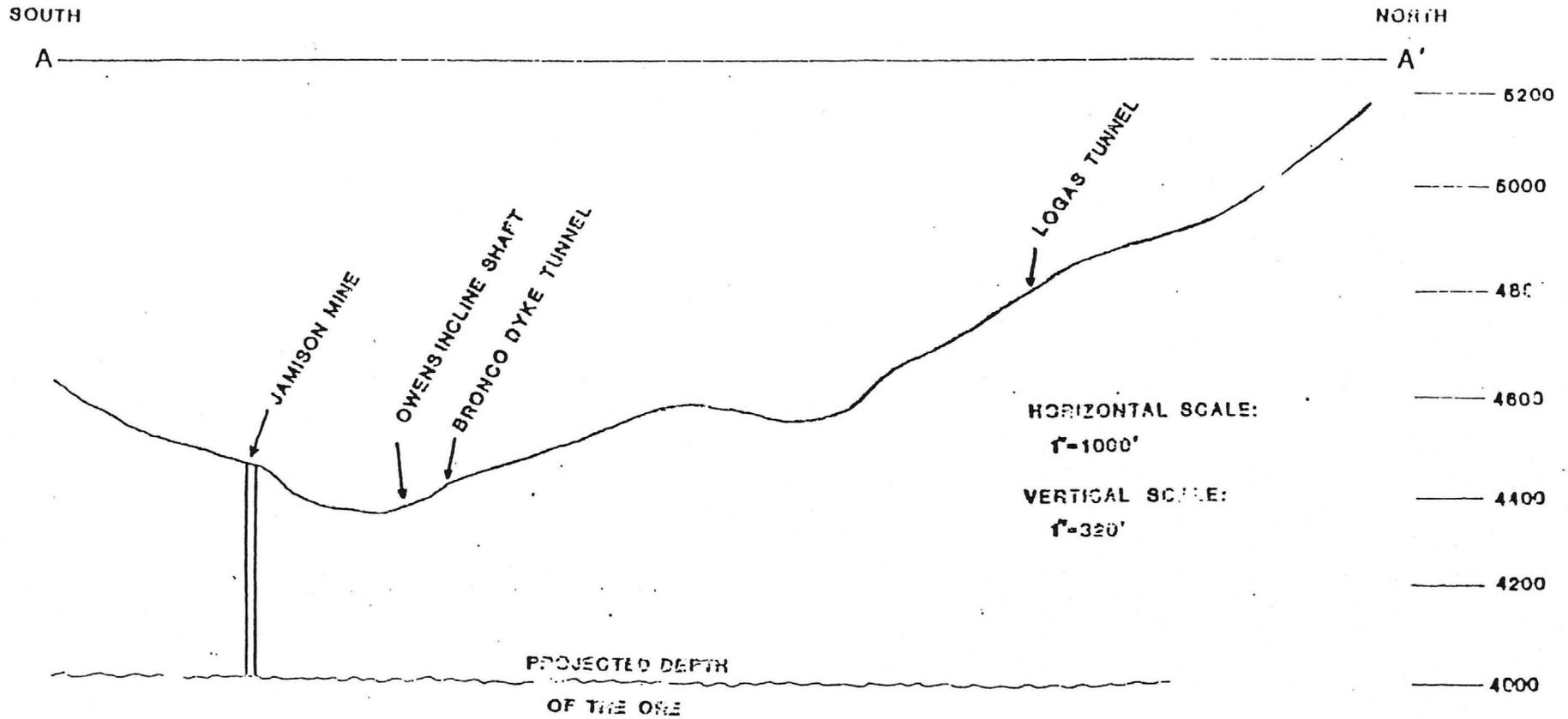
MADE FOR GENE HUDSON  
RMC CORP.  
910 So. Ho Ho Kam  
Suite 115 - 116  
Tempe, Ariz. 85281

Dec. 6, 1975

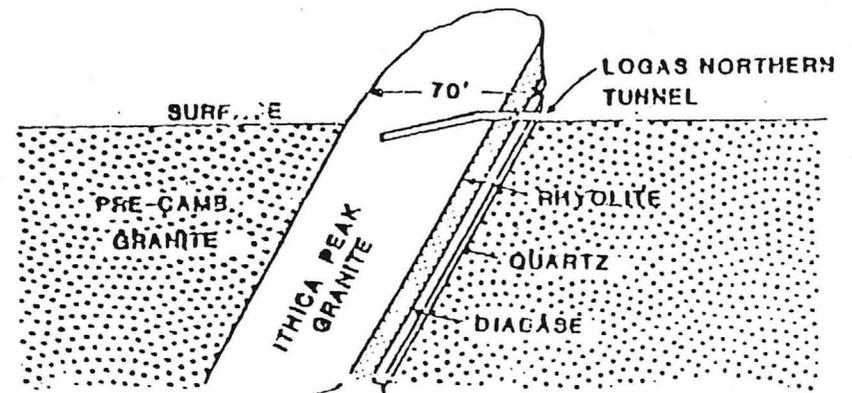
Sample No.	SAMPLE DESCRIPTION	Gold oz/ton	Silver oz/ton	Lead %	Zinc %	Copper %
2-1-1	BP Vein <u>LITTLE BOY SHAFT</u>	.026	12.21	1.74	21.30	0.04
2-1-2	M-1	.126	45.13	0.06	1.20	0.05
2-1-3	JT-EOT-L	Tr	0.36	0.02	1.40	0.02
2-1-4	A-1	.280	1.75	0.26	0.095	0.02
2-1-5	<del>A-1</del>	.016	10.64	N11	0.60	1.24
2-1-6	A-2	.024	8.32	0.20	0.45	1.96
2-1-7	A-3	.018	0.96	N11	1.05	0.20
2-1-8	A-4	.002	1.16	0.48	1.35	0.14
2-1-9	B-1	.014	0.25	N11	0.40	0.01
2-1-10	B-2	Tr	0.32	N11	0.55	0.02
2-1-11	B-3	Tr	0.34	N11	0.65	0.02
2-1-12	B-4	Tr	0.60	N11	0.50	0.02
2-1-13	B-5	Tr	0.54	N11	0.35	0.01
2-1-14	D-1	.006	1.84	N11	0.55	0.01
2-1-15	D-2	.032	7.13	0.34	0.10	0.01
2-1-16	D-3	.050	7.67	0.08	1.40	0.01
2-1-17	D-4	.506	17.57	0.10	0.60	3.5
2-1-18	D-5	Tr	13.50	N11	1.15	1.3
2-1-19	D-6	.070	8.29	0.58	1.80	0.1
2-1-20	D-7	.150	1.79	0.36	1.80	0.01
2-1-21	JD-R1	.010	1.87	N11	0.95	0.2
2-1-22	JD-R3	.060	4.90	N11	0.80	1.3
2-1-24	JD-TR4	.068	6.49	N11	0.80	1.1



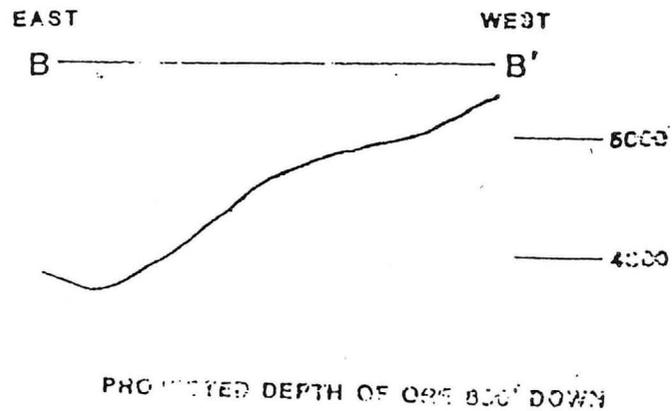
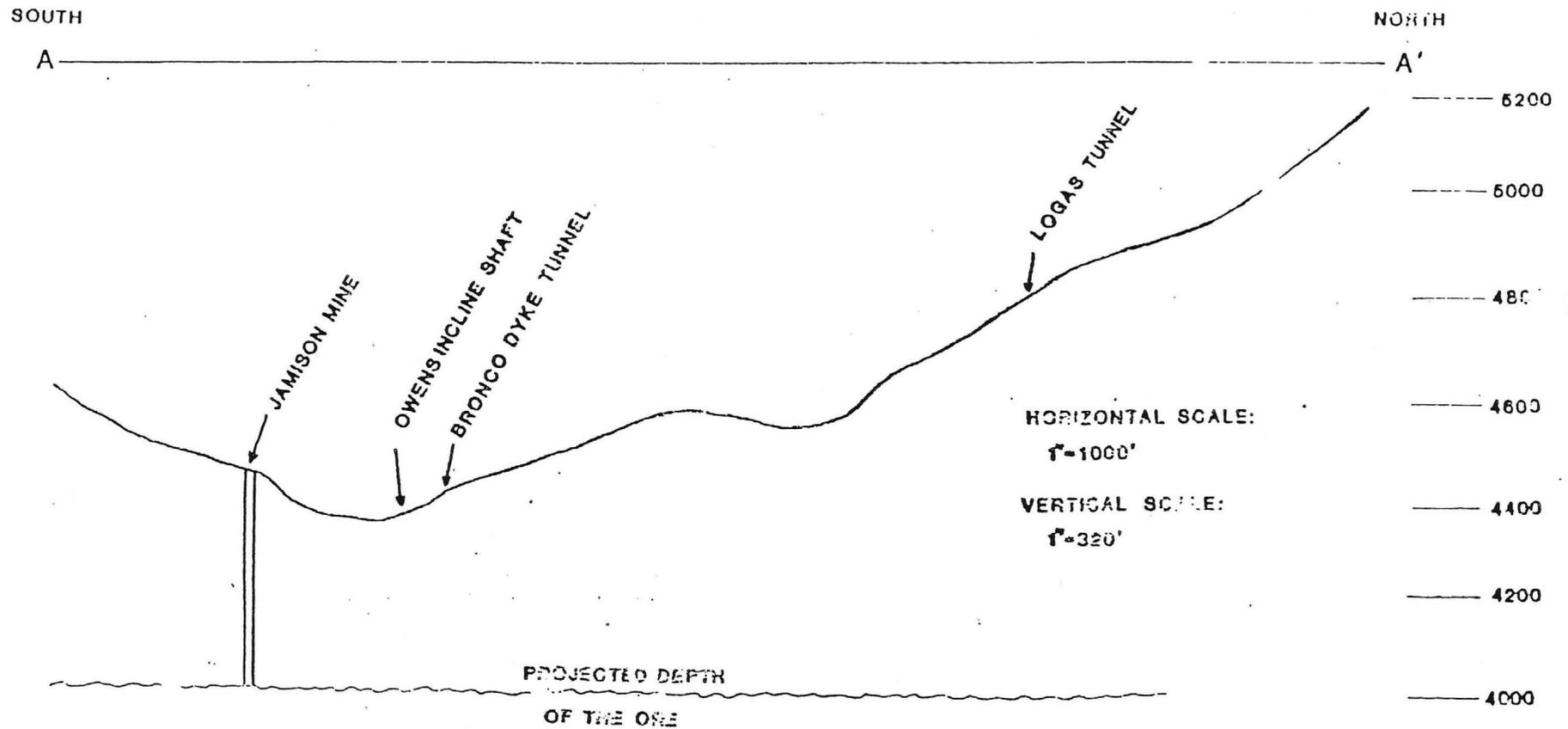
# CROSS SECTIONS: BRONCO DYKE



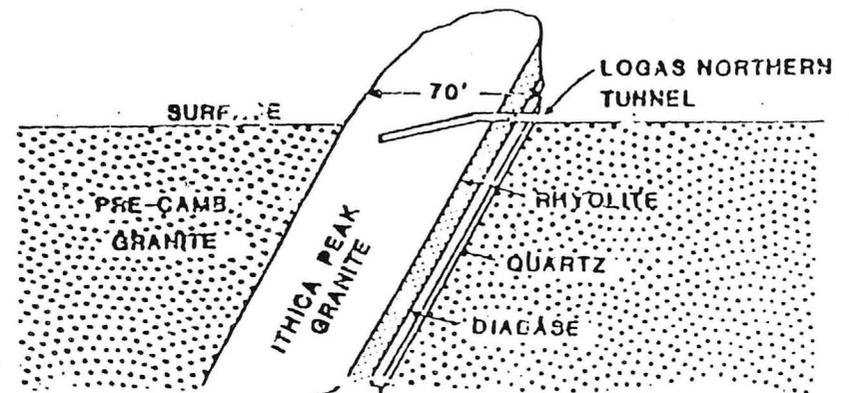
## CROSS SECTION OF BRONCO DYKE AT LOGAS TUNNEL

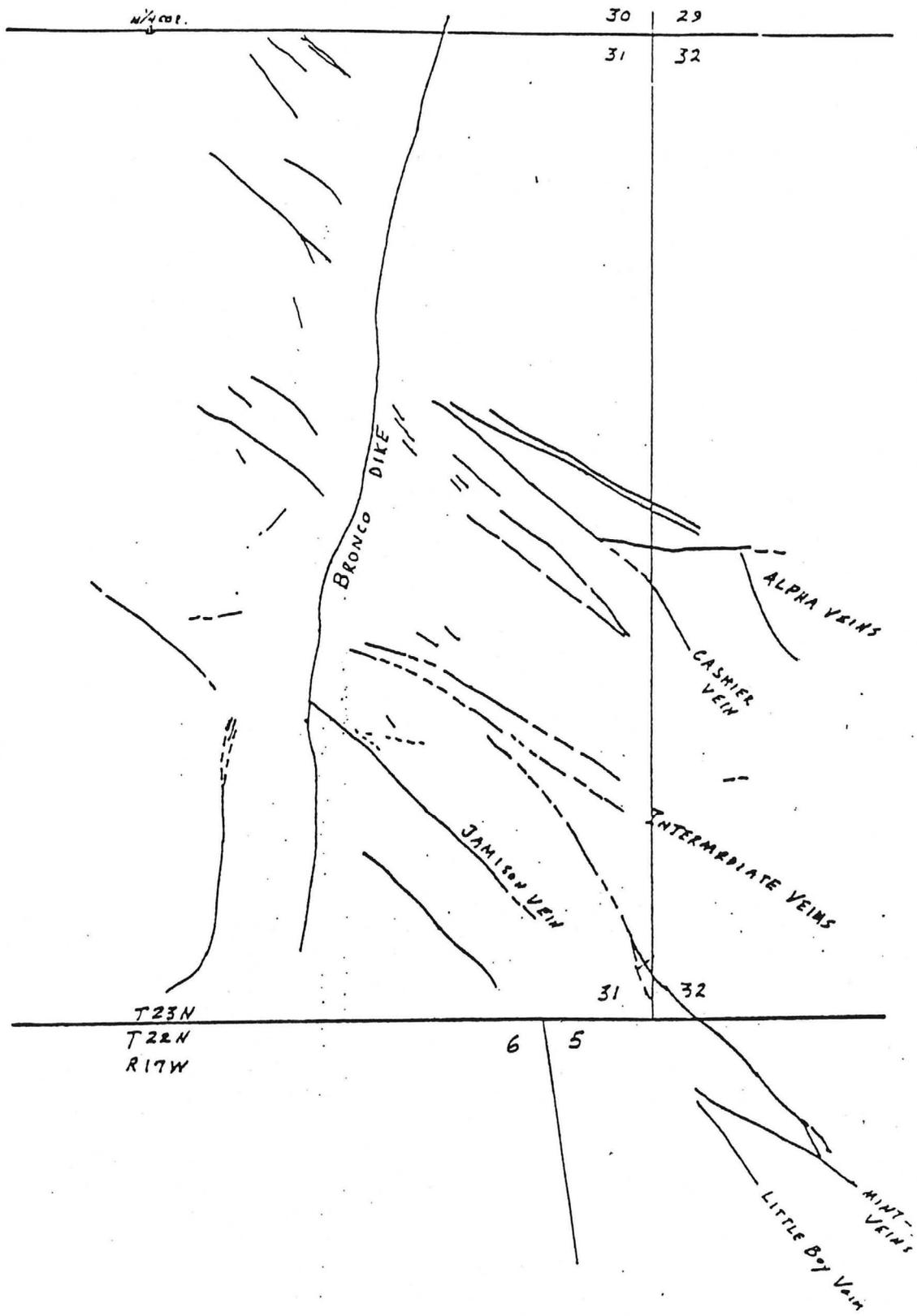


# CROSS SECTIONS: BRONCO DYKE



## CROSS SECTION OF BRONCO DYKE AT LOGAS TUNNEL

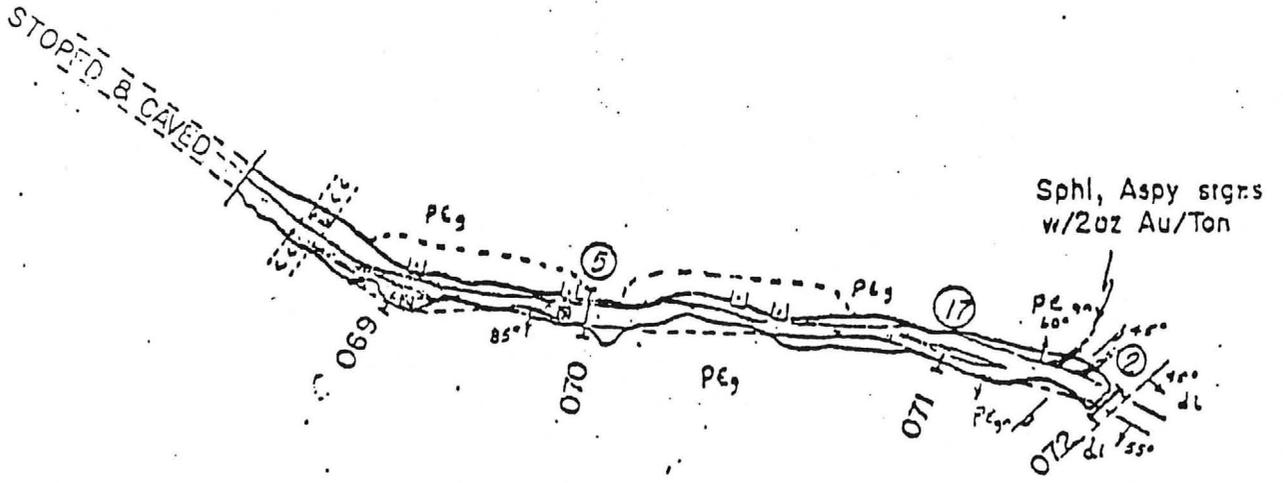




**D.K. MARTIN & ASSOCIATES**

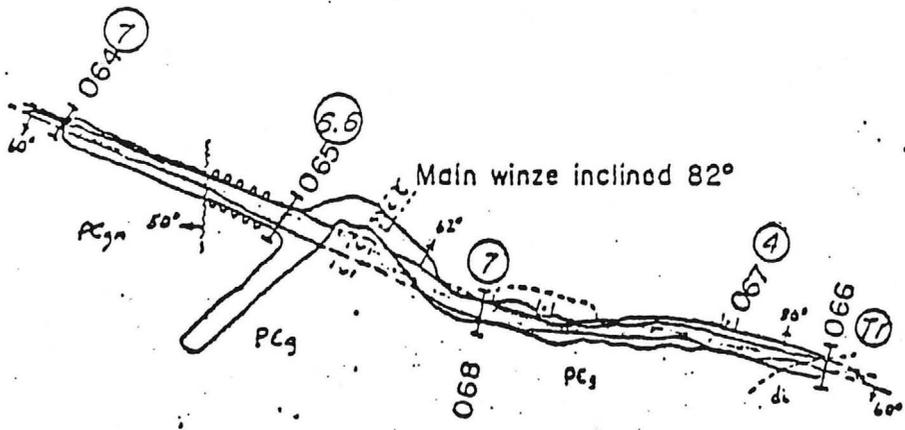
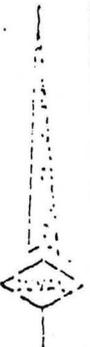
Mining Administration  
and  
Development

SAMPLES						
No.	LENGTH FEET	Ag	Au	Cu	Pb-%	Zn
069	4	10.2	.031	1.90	.27	1.00
070	6	5.0	.022	.70	1.59	.40
071	1.75	17.0	.022	3.20	4.22	.40
072	6	1.4	.018	.16	.46	1.20



DUVAL CORPORATION - EXPLORATION DEPT. ARIZONA  
 CHICO MINES  
 JAMISON VEIN - 100' LEVEL. 18 MOHAVE  
 GEOLGY & SAMPLE MAP 11 23 N, 17 E

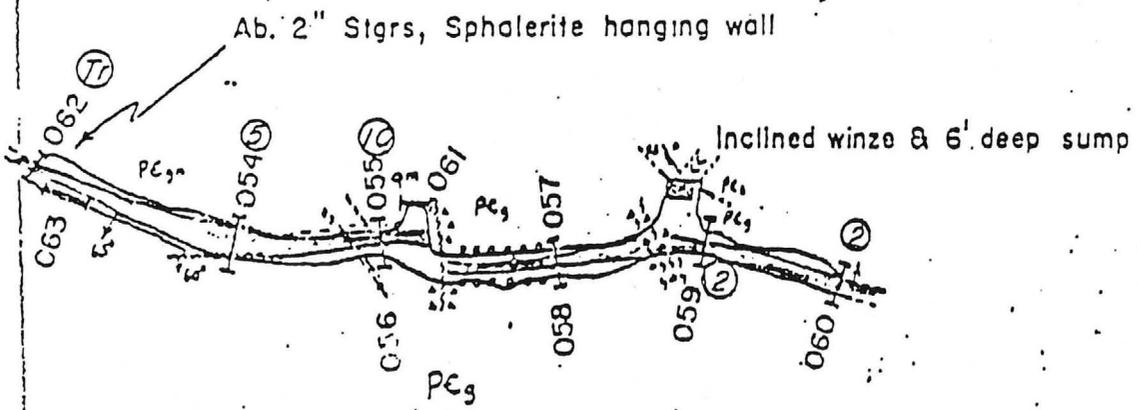
SAMPLES						
No.	LENGTH FEET	Ag	Au	Cu	Pb - %	Zn
064	2'	6.9	.048	.60	.24	.15
065	7'	6.6	.039	1.90	.26	.08
066	6'	Tr	.002	.30	.26	.12
067	Muck	4.2	.022	.60	.30	.28
068	8'	7.0	.043	1.40	.69	.22



DUVAL CORPORATION - EXPLORATION DEPT. ARIZONA  
 CHICO MINE  
 JAMISON VEIN - 200' LEVEL  
 GEOLOGY & SAMPLE MAP  
 MOHAVE  
 23 N, 17 W  
 B-242C

# SAMPLES

	No.	LENGTH FEET	Ag	Au	Cu	Pb - %	Zn
VEIN	054	5'	4.9	.017	.70	.30	.80
VEIN	055	2'	10.0	.031	3.80	.36	.50
GANGUE	056	5'	Tr	nil	.008	.28	.05
GANGUE	057	8'	0.7	.013	.12	.26	.07
GANGUE	058	9'	1.1	.011	.12	.26	.08
QTz Bx	059	8'	1.6	.016	.18	.31	.10
VEIN	060	6'	1.5	.029	.15	.31	.08
GANGUE	061	8'	Tr	.003	.02	.28	.01
VEIN	062	3'	0.4	.022	.04	.19	.09
GANGUE	063	10'	Tr	.057	.01	.18	.01



DUVAL CORPORATION - EXPLORATION DEPT.		ARIZONA
CHICO MINE		MOHAVE
JAMISON VEIN - 300' LEVEL		23 N, 17 W
GEOLOGY AND SAMPLE MAP		B-2419
DATE	DRAWN BY	SCALE
7/26/68		

Wm. Underhill  
1021 E. Spence Ave.  
Tempe, Arizona 85281  
(602) 968-2653

Charles Goetz  
5160 W. Missouri Ave.  
Glendale, Arizona 85301

Dear Mr. Goetz:

I have prepared the following brief summary of the geology and ore deposits on the Chico Mines Property and make it available to you with hopes that it will be made available to prospective buyers of the property. As you know, my detailed knowledge and general familiarity with the area is based on extensive field work and related studies done over several months in 1980 and 1981. I wish it to be known that I consider the property an excellent exploration target and that I am available and anxious to further explore and develop it.

#### CHICO MINES PROPERTY

The Chico Mines Property consist of 51 contiguous mining claims (two patented) comprising approximately 640 acres and located in the Wallapai Mining District of northwest Arizona.

The property is bounded on the east by Stockton Hill Camp, a late 19th century silver bonanza; on the south by Golconda Camp, once the largest base-precious metal producer in the district; and on the north by the Pennzoil-Duval, Mineral Park open pit copper-moly mine.

On the property, rocks exposed at the surface include metamorphosed pre-Cambrian igneous and sedimentary rocks cut by Mesozoic intrusives and Tertiary extrusives. The ore deposits exist as vein type mesothermal deposits of primary base metal-silver sulphides, oxidized, near surface deposits enriched in precious metals and, possibly, a copper molybdenum porphyry, an extention of the Duval orebody.

The largest structure, the Bronco Dike, a fracture which traverses the property for three-fourths of a mile, is composed primarily of rock equivalent to the Duval host rock and minor quartz. Limited shallow drilling in July, 1981, showed the quartz to average three feet in thickness and to contain 0.3 ounces gold and 7.0 ounces silver per ton with substantial amounts of copper, lead and zinc. If the quartz persists for the entire length of the dike, it could represent over one million tons of ore.

At least six major vein systems traverse the property trending northwest and intersecting with the northeast trending Bronco Dike. Oxidized portions of these veins are known to contain enrichments of gold and silver. One such enriched area, at the juncture of the Jemison vein and the Bronco Dike, was extensively mapped and and sampled by the author. Results indicate shallow drilling would prove from 50,000 to 250,000 tons of material averaging 0.05 ounces gold and 2.1 ounces silver per ton. The surface samples were amenable to cyanide leaching and could by extracted by surface

page 2: Chico Mines Property

exist along the Bronco Dike. Exploration, therefore, could delineate up to a million and a half tons of leachable ore.

Previous mining operations on the Chico Property have produced some sizable mine dumps and precious metal extraction from these dumps should not be overlooked. Casory examination indicates in excess of 100,000 tons of material averaging 0.03 ounces gold per ton and 1.5 ounces silver.

Thus the property contains base metal-silver veins, oxidized silver-gold enrichments, low grade mine waste and, possibly, a copper-moly porphyry. A program integrating geology, geophysics and drilling is required to delineate ore reserves on the Chico Property.

The merits of the property can best be appreciated by an on-sight evaluation and I am available to conduct prospective clients through the property on a per diem basis.

Sincerely,

Wm. Vanderwall

Registered Geologist, State of Arizona, No. GIT 34

ASSAY SAMPLE DESCRIPTIONS

Map I.D. No/Identification No	Description
1/1	Surface of Bronco Dyke, Cu-Mn stains on diabase (?) - no visible minerals except green chloritic (?) alteration throughout.
2/2	Shallow underground sample from fault gouge along Bronco Dyke. Blue-black mudlike gouge with ubiquitous euhedral pyrite (Ca. 1mm)
3/3	Dump sample of upper Mint vein - mostly Qtz., py., py. xlt. stepped and silvery colored, milky Qtz., some black oxide.
4/4	Underground sample of upper Mint vein, Qtz., py., galena, spalerite, good xlt. sample high grade (?). Vein 18" wide at sample location, appears continuous with respect to Qtz., but py., ga., sp, spotty.
5/5	UG sample of Cashier vein. Primarily Qtz, py., sp.; vein 1' wide at sample location with green and white mudlike gouge 1' each side of vein. Sample taken at cave-in 50' down shaft.
6/6	Underground sample at unnamed prospect tunnel, oxidized sample with some residual pyrite. Brown color, oxidized, friable zone about 2' wide and continuous.
7/C-1	Dump sample at cashier tunnel - high grade ore reported from this tunnel but presently inaccessible. Sample partly oxidized with blue-green, white and black alteration visible minerals are Qtz., ccp., py., ga., sp. very dense and hard.
8/G-10S	Ore stockpile sample from Goetz shaft. Copper and iron oxides in fractures of very hard Qtz. vein. 5-10 tons stockpiled. Shaft caved and inaccessible but vein 2' wide at surface.
9/J-10S	Ore stockpile from Jamison 300 (?) foot level, massive chalcopyrite, pyrite and galena in Qtz host. Very high grade sample from ore shoot (?).

ASSAY SAMPLE DESCRIPTIONS (cont'd.)

Map I.D. No/Identification No.	Description
10/LB-1C	Underground sample of in-place oxidized ore pod ca. 1' wide, massive black coated ( $MnO_2$ ?) very hard Qtz. with brown limonitic (?) streaks, vugs with gypsum needles.
11/LB-IV	Same as above but sample cut across vein plus 1' gouge zone either side. Clay gouge brown to grey. Slickenslide surface adjacent to gouge.
12/M-IV	Underground sample from lower Mint vein - comb Qtz. with comb filled with calcite plus black oxide and few residual pyrite crystals. 4'-6' vein width.
13/water	Stream water approximately 100 yards from spring, here rocks in stream bed are blue-green from copper precipitation. White zinc precipitate downstream. Spring appears to drain dyke-vein system.
14/1	Surface sample from shallow pit oxidized vein - blue-green and brown coloration - vein 6" wide.
15/2	Same vein as above 400' uphill vein slightly wider and difficult to trace.
16/3	Underground sample from Bluebird mine; sample similar to 14/1 & 15/2 so same type vein.
17/4	Wall rock to 16/3
18/5	Surface sample - same vein as 14/1 & 15/2 This vein tracable for 1/4 mile.
19/5	Ore stockpile sample of American Legion 400' level ore. Galena, pyrite sphalerite, high grade sample.
20/6	Ore stockpile sample at location of very high grade ore, now mined out - sample black, very heavy and hard. No visible minerals.
21/LB-1C	Fire assay of sample 10/LB-1C
22/J-10S	Fire assay of sample 9/J-10S

# Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

**WILLIAM VANDERWALL**  
GEOLOGIST

For

Date July 16, 1980

PACIFIC REGIONAL OPERATIONS, INC. P.O. Box 716  
(602) 994-3147 SCOTTSDALE, ARIZONA 85252

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER	LEAD	ZINC	
6825	MAP I.D. NO.						
	1 #1	Trace	3.4				
	2 #2	Trace	2.2	0.32	0.13	0.32	
	3 #3	0.01	0.40	0.02	0.24	0.26	
	4 #4	0.84	14.	0.37	8.3	13.	
	5 #5	0.17	4.5	0.11	0.66	5.0	
6 #6	0.01	0.60	2.8	0.08	0.25		

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E McLean, Jr.*

Claude E. McLean, Jr.



# Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

**WILLIAM VANDERWALL**  
GEOLOGIST

For

Date July 18, 1980

PACIFIC REGIONAL OPERATIONS, INC. P.O. Box 716  
(802) 994-3147 SCOTTSDALE, ARIZONA 85252

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES		
		GOLD	SILVER	COPPER	LEAD	ZINC
6901	7 C-1	2.8	54.			
	8 G-10S	0.55	68.			
*	9 J-10S	3.3	48.	12. %	6.0 %	2.1 %
*	10 LB 1C	3.3	5.3	0.43	0.35	0.23
	11 LB IV	3.3	26.			
	12 M IV	0.15	1.6			
*	See Attached Assay sheet Jacobs					

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E McLean Jr*

Claude E. McLean, Jr.





# Arizona Testing Laboratories

817 West Madison · Phoenix, Arizona 85007 · Telephone 254-6181

**WILLIAM VANDERWALL**  
GEOLOGIST

For

Date July 2, 1980

PACIFIC REGIONAL OPERATIONS, INC. P.O. Box 716  
(602) 994-3147 SCOTTSDALE, ARIZONA 85252

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
6646	14 #1	0.08	46.				
	15 #2	0.13	16.				
	16 #3	0.16	43.				
	17 #4	0.14	4.8				
	18 #5	0.03	20.				
	19 #6	0.04	23.				
	20 #7	0.49	0.50				

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E. McLean, Jr.*

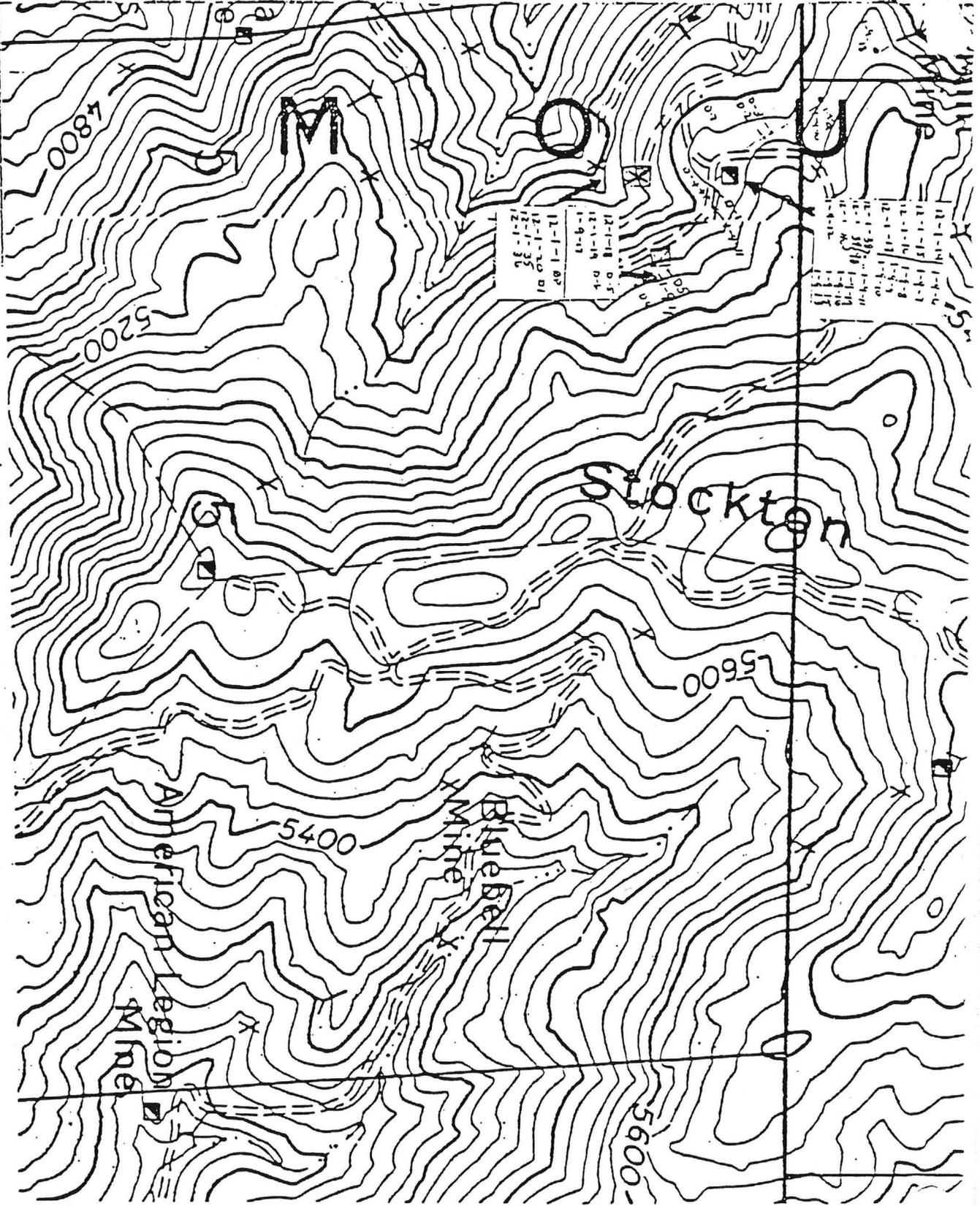
Claude E. McLean, Jr.



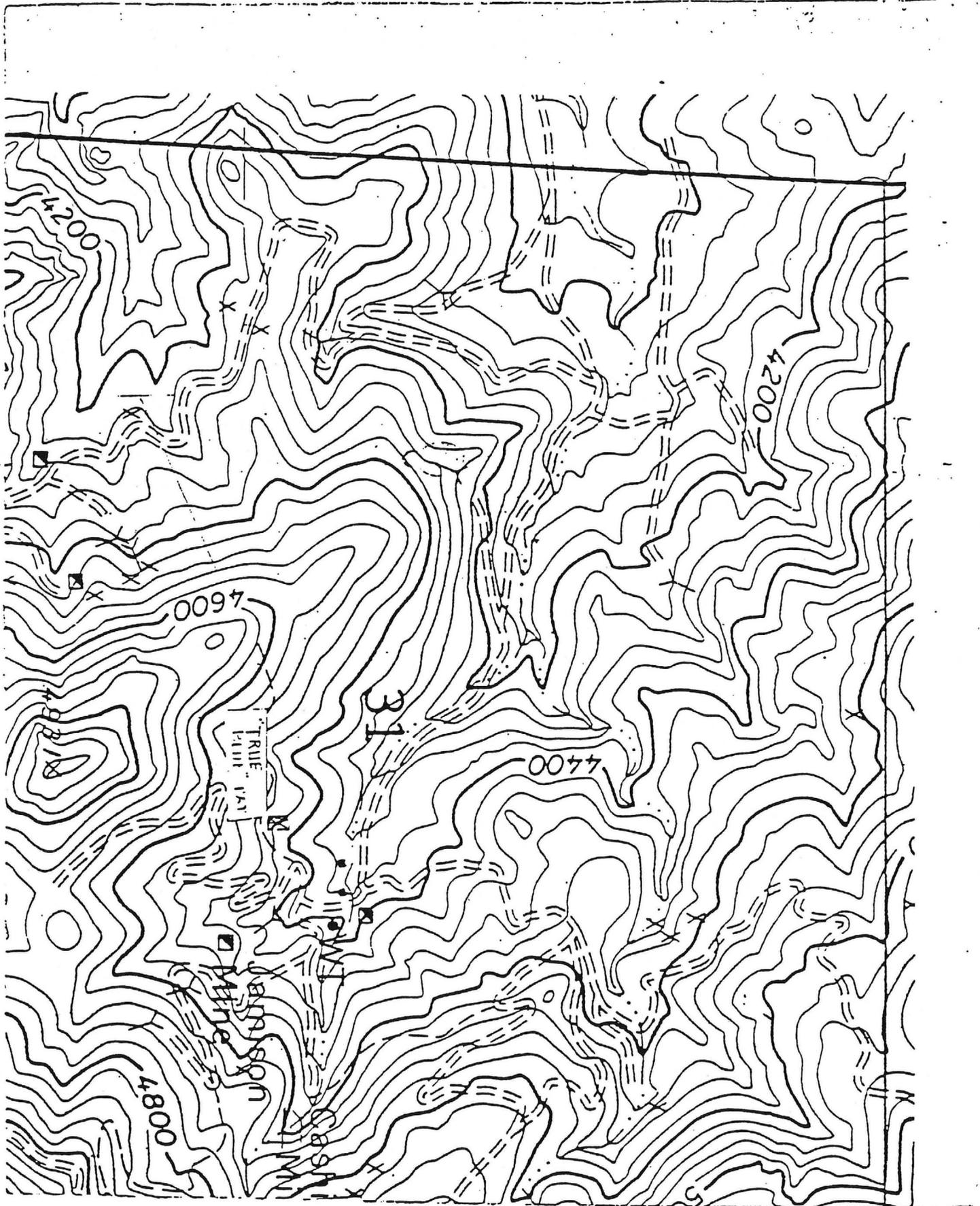
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by K. Keaney  
8/5/76

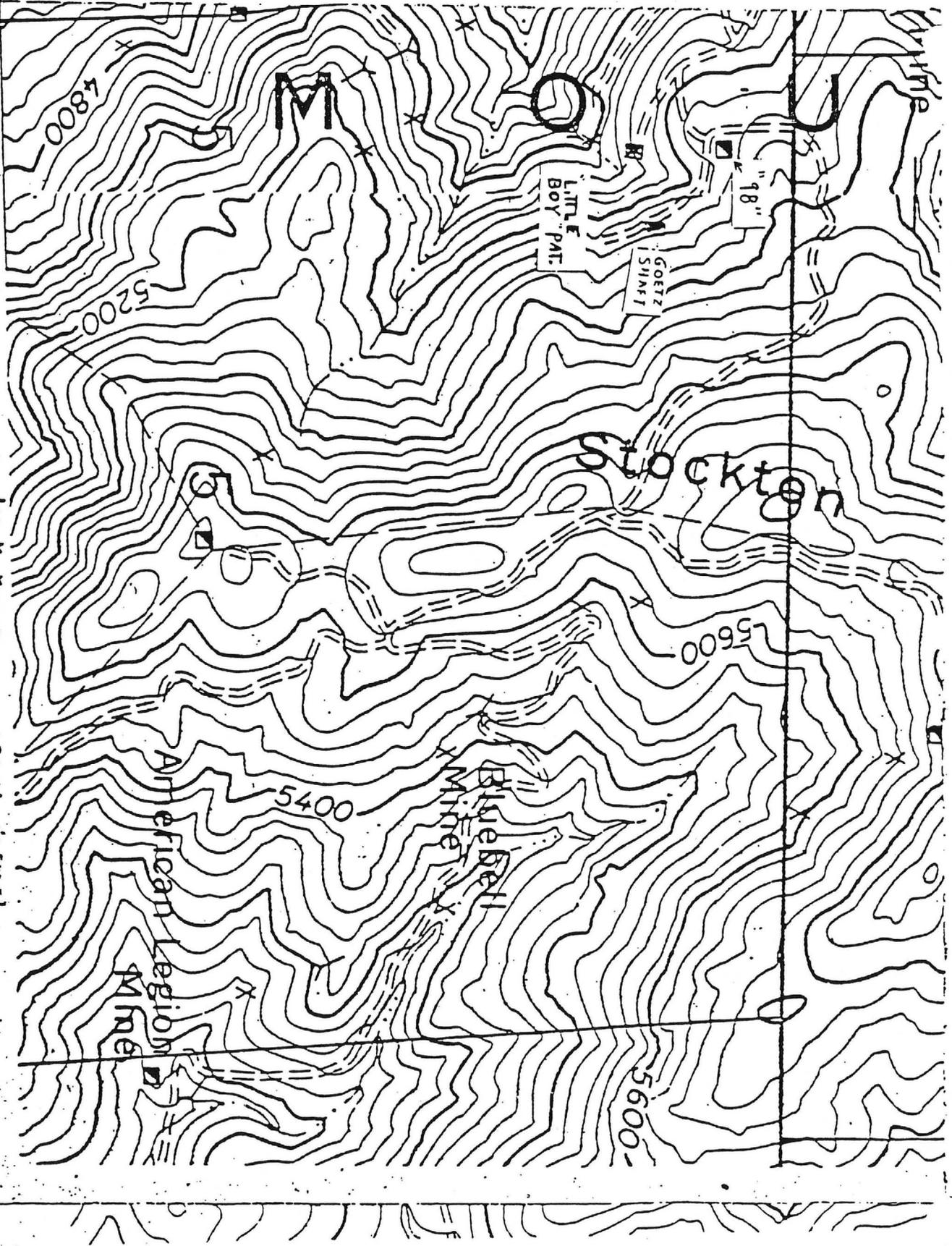
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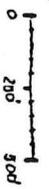


IONS



1:5000  
 by K. Kenney  
 8/3/76

SCALE 1:1500 F



JAMISON MINE

MOHAVE COUNTY *9 mi S of  
Chloride & 6  
mi E. of Boulder  
Dam Highway.  
slope of League  
Springs Canyon*

Exploration work was done at the Chico property during the quarter. FTJ QR 7-1-70 *on eastern*

Chico mine idle. FTJ WR 9-4-70

Visited the Chico mines - idle. FTJ WR 11-6-70

Chico mine idle. FTJ WR 1-8-71

The Chico mine was inactive as was Buffalo Lakes Mines at White Hills. FTJ QR 1-13-71

Mr. Dick Ranie, Wickiup, came in for information on the Chico Mine (Jamison) south of Chloride. GW WR 6-11-73

Charles Murray of Post Realty wanted information on the Mint claim of Chico mines. Silver predominate with wire silver and ruby silver also galena. Mr. Murray is having a geologist from Phelps Dodge examine the Chico mine. FTJ WR 6 24-74

It was reported at the ASMOA 1/7/75 meeting that Dupont has acquired the Golconda and Chico properties in the Cerbats. VBD WR 1/7/75

Messrs. Dave Cook and Kevin Kenney, P.M.C. Co., came in to discuss the Chico mine property of Mr. Geotz, from whom they have a lease. They spoke of building about a 50 T/day portable mill and wanted the laws with regard to tailings dams. They were advised to consult the BLM, but that a substantial dam would be required in order to reclaim the water. GW WR 12/22/75

Walt Statler said that most of his samples are coming from the Chico property north of Kingman. GW WR 1/7/76

George Boyd is investigating an operating proposal for the Chico mine near Mineral Park. He will apparently attempt to raise money for the project. KAP WR 6/7/76

RRB WR 4/24/81: Bill Vanderwall, Scottsdale, has Chico Mines bordering Duval's Mineral Park Property in Mohave County and was looking for someone to do feasibility studies and/or operate property.

*Do Not Reproduce*

To Jamison mine (Chico Mines) They are drifting east on the 300' level and also on the 200' level. 5 employees. FTJ WR 9-10-68

---

Visited the Chico mines. Work consists of a new headframe on the 98 claim which is about  $\frac{1}{2}$  mile southeast of the Jamison adit. J. R. Simplot Co. of Idaho were sampling and examining the Jamison and adjoining claims. FTJ WR 11-8-68

---

Active Mine List Oct. 1968

Visited Chico Mine which was idle during holidays, but were getting underway again - sinking operation on the 98 claim above and southeast of the Jamison adit. Ellis brothers of Kingman are mining on the Mohawk claim which is southwest of the Chico operation. All work is by hand tools. FTJ WR 1-10-69

---

Last three miles to Chico mine impassable. Three men underground drifting. FTJ WR 3-7-69

---

Active Mine List April 1969 - 5 men - Roy Montague, Mgr.

Rumored that some Utah company was examining the Jamison mine. FTJ WR 6-6-69

---

Visited Chico mines - gate at mine closed - no one around. Roy Montague is in the hospital. FTJ WR 7-11-69

---

Phoned Roy Montague re Chico, he said Big Horn Mining Co., of Salt Lake City, Clyde Davis geologist, had taken option on the Chico Mines property. They also have option on Golden Eagle and the Golconda properties. FTJ WR 7-18-69

---

Visited the Jamison mine - no one around - Roy Montague is the manager, but not in. Was told a Salt Lake outfit has an option on the property. FTJ WR 9-5-69

---

Active Mine List Oct. 1969 - 2 men - Roy Montague, Mgr.

Visited Chico Mine (Jamison) Interview with Roy Montague. He said Big Horn Mining Co. of Salt Lake, Clyde Davis, geologist, have examined the Chico Mining Co. holdings and located other claims. Hanna Mining Co. and Big Horn may make a joint venture of the properties. FTJ WR 11-7-69

---

To Chico mine - idle and no one around. FTJ WR 3-6-70

---

Visited Chico mine - gate locked. FTJ WR 5-8-70

---

Visited Chico mine - idle - gate locked. FTJ WR 7-11-70

---

*Do Not Reproduce*

Visited the Jamison mine - Chico Mining Co. Interview with Roy Montague and Charles Goetz. They are cleaning out and repairing the old shaft and have stockpiled about 300-400 tons of mill grade ore. Shaft is repaired to 85' level from adit level, and making about 3,500 gallons of water per day. Long holes are driven from the walls of 85' level to enlarge ore reserves. Four employed. Mr. Goetz now owns the John Slak property at Junction of Bumble Bee-Crown King Road and Cortes Road. No definite plans at the time of interview. FTJ WR 3-11-67

---

Active Mine List April 1967 - 4 men

Visited Jamison Property (Chico Mining Co.) - interview with Charles Goetz and Roy Montague. They are planning to set up a mill and believe they can develop an open pit operation. They continue to explore and develop reserves from adit level. FTJ WR 5-5-67

---

Visited Jamison mine - they are rehabilitating shaft - some drifting. Shaft is to 246' level. The pump motor had burned out but they had been pumping 40,000 gal. per day. FTJ WR 7-7-67

---

Interview with Roy Montague at the Jamison mine. Shaft is rehabilitated to the bottom - 300' level. Excellent ore was being stockpiled. Construction of a pilot mill is taking place. FTJ WR 9-8-67

---

Interview with Roy Montague at the Chico. Their small pilot mill is nearly completed. It is supposed to treat 1 ton/hr. by table and flotation. FTJ WR 11-10-67

---

Visited the Chico Mining Co. (Jamison) - work confined to the Mint Claim above the Jamison. Cleaning a tunnel and making a cut on high grade (500 oz.) Ag. ore. FTJ WR 1-5-68

---

Visited the Jamison mine (Chico Mining Co.) They were crosscutting and drifting on the 300' level. Montague said they have 450,000 tons of mill grade ore blocked out. They also are drilling from the surface about 1000' northwest of the Jamison adit. 8 men working. FTJ WR 3-8-68

---

Active Mine List Nov. 1967 - 5 men  
Active Mine List April 1968 - 5 men

Visit Chico Mines Co. They have been drilling about 1000' northwest of the Jamison portal. Stuck the bit at 940' and had retrieved 340' of rod. Hole abandoned. FTJ WR 5-10-68

---

Visited Jamison mine - exploration and development on the 260' level. FTJ WR 7-12-68

---

Phone call from Earl Baier for information on the Chico Mining Co. He says he is a stockholder. FTJ WR 7-19-68

*Do Not Reproduce*

Mr. E. G. Williams says this mine is between the Gem and Summit mines. Mr. Roy Montague, P.O. Box 217, Chloride, Arizona, is building a mill at the Jamison Mine. EGW WR 5-10-65

---

Chico Mining & Milling Corp. are setting up a small 50 tpd gravity mill at the Jamison mine southwest of Mineral Park. Roy Montague is president. Using Chicago money. 4 men are employed setting up the mill. The mine is said to be ready for mining. They propose to raise value of ore to \$100/ton. FTJ WR 9-10-65

---

Received phone call from Earl Baier, 12813 N. 30th Drive. He has an interest in Jamison mine (Chico) with Roy Montague of Kingman, who manages their present activity. They intend to enlarge the mill to 100 tpd. FTJ WR 12-10-65

---

Visited the Chico (Jamison) property. No one at property except the dogs. All equipment - compressors, mill, truck, etc., was intact and idle. Some concentrates - 1 ton+ was stored in cans and barrels. Earl Baier, 12813 N. 30th Dr., Phoenix, is involved with Roy Montague. They plan to enlarge the mill. The group also have the Cashier mine which is about a mile northeast of the Jamison and reportedly has 51,000 tons of silver, lead, gold ore that will assay \$127/ton (hearsay) FTJ WR 1-7-66

---

Visited the Chico Mine and surveyed their adit to the face of an exploratory crosscut to aid in determining their location. Roy Montague is in charge and is having financial worries. El Paso Gas were going to examine the property. FTJ WR 3-4-66

---

The Jamison mine has only a skeleton crew as they were short of funds but had developed a fair show. They are expected to continue to develop ore in hopes of finding enough to justify a mill. FTJ QR 7-8-66

---

Visited the Jamison mine. No one around. It is understood that Chas. Goetz of Phoenix is financing the operation. FTJ WR 9-9-66

---

Active Mine List Oct. 1966 - 2 men

They are core drilling the area south of adit on the Jamison. FTJ WR 11-4-66

---

Visited Jamison mine. Road nearly impassable. Drilling outside has ceased until the access roads dry out. Work was being done underground. Drill results were not available. FTJ WR 1-7-67

---

*Do Not Reproduce*

STATE OF ARIZONA }  
County of \_\_\_\_\_ } ss.

hereby certify that

MICROFILMED Fee # 85-282,

INDEXED DEEDS

PROOFED

In DOCKET

Recorded in Official Records  
of Mohave County, Arizona  
AUG - 8 '85 - 8 00 AM  
Joan McCall, Recorder



\$ 77.00 1 of 3

Deputy Recorder

At the request of  
When recorded, mail to:  
John P. Phillips  
SNELL & WILMER  
3100 Valley Bank Center  
Phoenix, Arizona 85073

### QUIT CLAIM DEED

For the consideration of Ten Dollars and other valuable considerations, FERN FOSTER, Personal Representative of the Estate of Charles E. Goetz, deceased,

hereby quit-claim to ALEX PROHOROFF, a single man,

all right, title, or interest in the following real property situated in Mohave County, Arizona:

The real property set forth on Schedule A attached hereto and made a part hereof, SUBJECT to 1985 real property taxes, liens, encumbrances, rights of way, and reservations of record. FURTHER SUBJECT to 1985 mine assessment work.

It is understood that the Grantor hereby reserves for itself and the remainder devisees of the Estate of Charles E. Goetz, deceased, a five percent (5%) over-riding royalty interest in the gross receipts produced from minerals taken from the property conveyed herein. It is understood that the Grantor, by reserving this over-riding royalty, does not obligate itself or the beneficiaries of the Estate of Charles E. Goetz, deceased, for payment of any sums in the production of such minerals. The undersigned further reserves for itself and the remainder devisees of the Estate of Charles E. Goetz, deceased, five percent (5%) of the sales price received for such property over and above the sum of Nine Thousand Dollars (\$9,000.00). It is understood that ninety percent (90%) of the real property is being conveyed herein; however, this reservation pertains to one hundred percent (100%) of the property.

Pursuant to Arizona Revised Statutes Section 33-401, the beneficiaries for whom the above property is held are:

FERN FOSTER  
6522 North 5th Avenue  
Phoenix, AZ 85013

STEVEN SCHEINER  
2500 Valley Bank Center  
Phoenix, AZ 85073

Dated this 1 day of August, 19 85

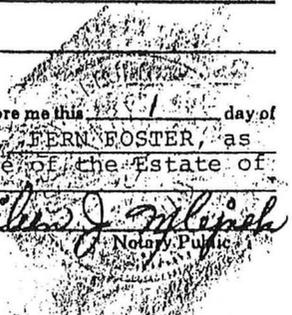
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Fern Foster  
FERN FOSTER

STATE OF ARIZONA }  
County of Maricopa } ss.

This instrument was acknowledged before me this 1 day of August, 19 85, by FERN FOSTER, as Personal Representative of the Estate of Charles E. Goetz, deceased.

My commission will expire My Commission Expires March 14, 1989



STATE OF \_\_\_\_\_ }  
County of \_\_\_\_\_ } ss.

This instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_, by \_\_\_\_\_

My commission will expire

Notary Public

Wm. Underhill  
1021 E. Spence Ave.  
Tempe, Arizona 85281  
(602) 968-2653

Charles Goetz  
5160 W. Missouri Ave.  
Glendale, Arizona 85301

Dear Mr. Goetz:

I have prepared the following brief summary of the geology and ore deposits on the Chico Mines Property and make it available to you with hopes that it will be made available to prospective buyers of the property. As you know, my detailed knowledge and general familiarity with the area is based on extensive field work and related studies done over several months in 1980 and 1981. I wish it to be known that I consider the property an excellent exploration target and that I am available and anxious to further explore and develop it.

#### CHICO MINES PROPERTY

The Chico Mines Property consist of 51 contiguous mining claims (two patented) comprising approximately 640 acres and located in the Wallapai Mining District of northwest Arizona.

The property is bounded on the east by Stockton Hill Camp, a late 19th century silver bonanza; on the south by Golconda Camp, once the largest base-precious metal producer in the district; and on the north by the Pennzoil-Duval, Mineral Park open pit copper-moly mine.

On the property, rocks exposed at the surface include metamorphosed pre-Cambrian igneous and sedimentary rocks cut by Mesozoic intrusives and Tertiary extrusives. The ore deposits exist as vein type mesothermal deposits of primary base metal-silver sulphides, oxidized, near surface deposits enriched in precious metals and, possibly, a copper molybdenum porphyry, an extension of the Duval orebody.

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to spare side  
for scanning  
2-17-06*

(over)

page 2: Chico Mines Property

exist along the Bronco Dike. Exploration, therefore, could delineate up to a million and a half tons of leachable ore.

Previous mining operations on the Chico Property have produced some sizable mine dumps and precious metal extraction from these dumps should not be overlooked. cursory examination indicates in excess of 100,000 tons of material averaging 0.03 ounces gold per ton and 1.5 ounces silver.

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Sincerely,

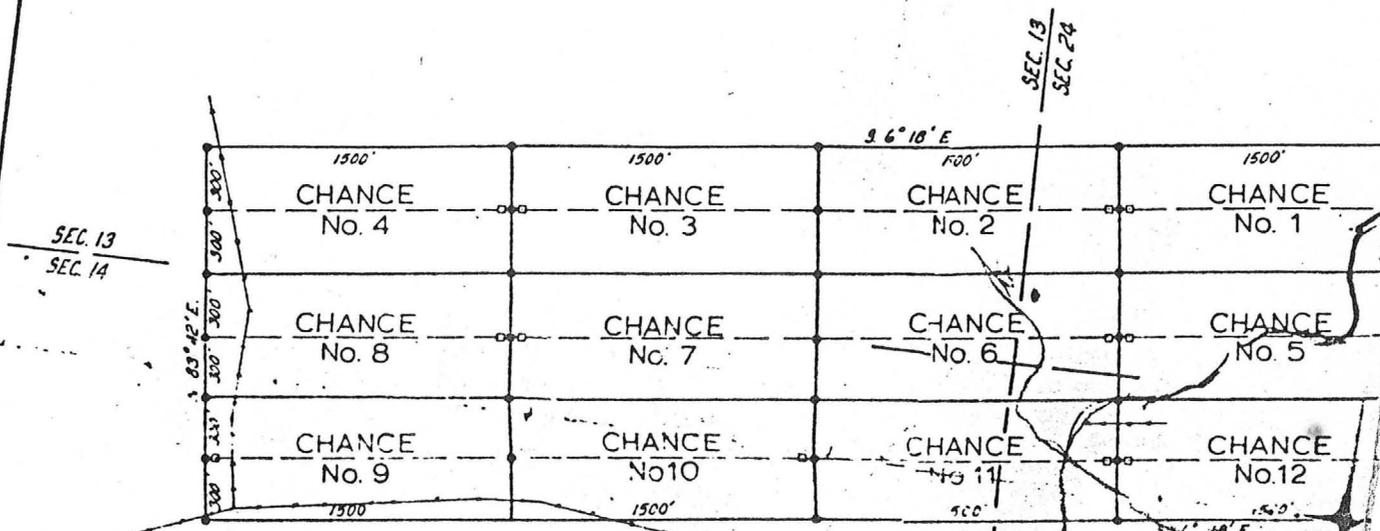
Wm. Vanderwall

Wm. Vanderwall

Registered Geologist, State of Arizona, No. GIT 34

**NOTES:**

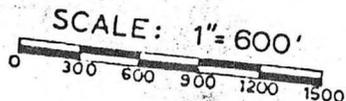
1. All claim corners and location monuments are 2"x2"x5' wood posts painted white.
2. Basis of bearing is solar observation dated 11-9-74.
3. All location monuments are 50' from center and lines.
4.
  - Claim corners and center end lines
  - Location monuments.
5. USLM is a US Location Monument 1913 and marked by a cross and stone cairn 5' high on the South edge of Townsend Butte.
6. Section Lines are approximate and were obtained from the Pine Grove Mining District plat with protracted sections.



Sulfide vein

~ 300-500 ft wide

Turkey Creek



**MINING CLAIM**  
**OF**  
**CHANCE & SURPRIS**  
**CHARLE**

SITUATED IN  
 UNSURVEYED SECT  
 T.11N. R.1

YAVAPAI