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GOLD BLUFF PROJECT REPORT

GOLD BLUFF PROJECT REPORT

January 18, 1985

Karl M. Emanuel

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CONCLUSIONS AND RECOMMENDATIONS

The Gold Bluff (GB) claims were staked by DeKalb Mining in April of 1982. At that time, negotiations were underway to acquire an interest in the adjacent Gold Bar property. The Gold Bar property is known to contain numerous breccia pipes, one of which hosts high grade gold mineralization. The GB claims were mapped and sampled and shown to contain a prominent rhyolite dike swarm with localized alteration and veining, but there appears to be little potential for further breccia bodies. The adjacent Gold Bar property was found to contain a previously unrecognized intrusive with an annular ring of fluidized breccia over 1000 feet across. The large pipe structure is weakly anomalous in gold but is large enough to potentially host a 1 to 2MMT deposit of 0.2+ opt gold. The property is currently controlled by Sunshine(?) and should be re-examined if it becomes available.

NICOR was approached by Permian Resources during July of 1984 with a proposal to joint venture the GB claims. A lease/purchase agreement was signed by Permian on January 18, 1985. Permian also controls the Texas Chief and Copper Prince patents against which the GB claims abut. The mineralization in the area is part of a large hematitic vein structure that carries spotty values in copper and gold. Should they return the property to NICOR, it is recommended that the GB claimblock be dropped.

INTRODUCTION

LOCATION

The Gold Bluff property is situated in the Black Rock Mining district of southern Yavapai County, Arizona (Figure 1). The western part of the property (Gold Bar Mine area) can be reached by traveling 17 miles (27 km) northeast of Wickenburg on the Old Constellation road. Access to the eastern part of the property (Red Bluff vein area) involves travel over seven miles of rough dirt road that branches from the Constellation Road at a point 15 miles from Wickenburg. The ends of both roads are within 1.5 miles of each other and are separated by a narrow ridge (Figure 2).

HISTORY (summarized from Wilson et al, 1967)

All of the past production from the Gold Bluff project area has been from the Gold Bar and Red Bluff mine areas. The histories of each of these areas are summarized below.

Gold Bar Mine - The Gold Bar or O'Brien mine was initially discovered in 1879 and was first located in 1888 by a Mr. J. Mahoney. Only sporadic mining occurred until 1901, when the Saginaw Lumber Company erected a 10-stamp mill on the property and was reported to have treated 4000 tons of ore

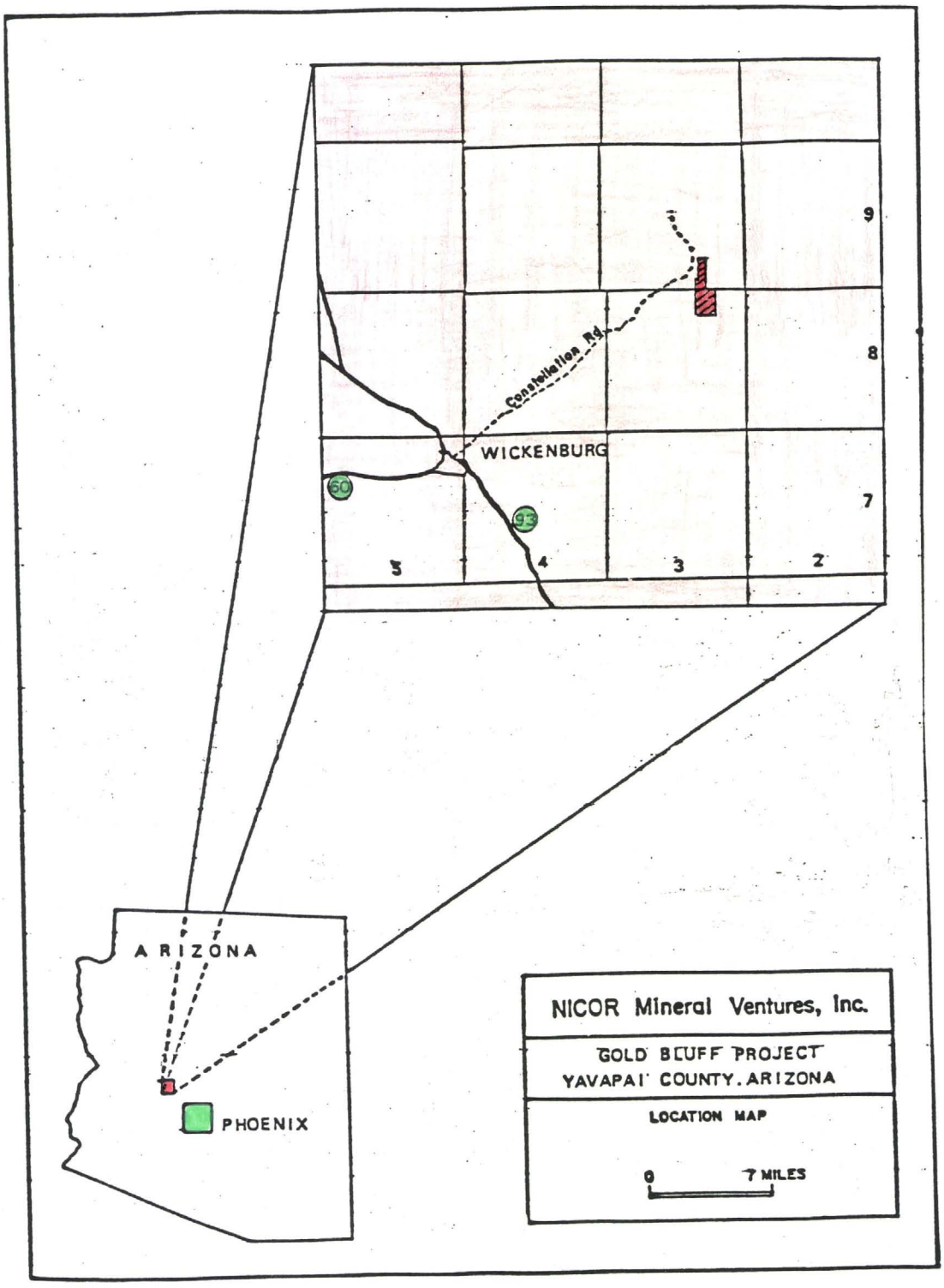


Figure 1. Location Map

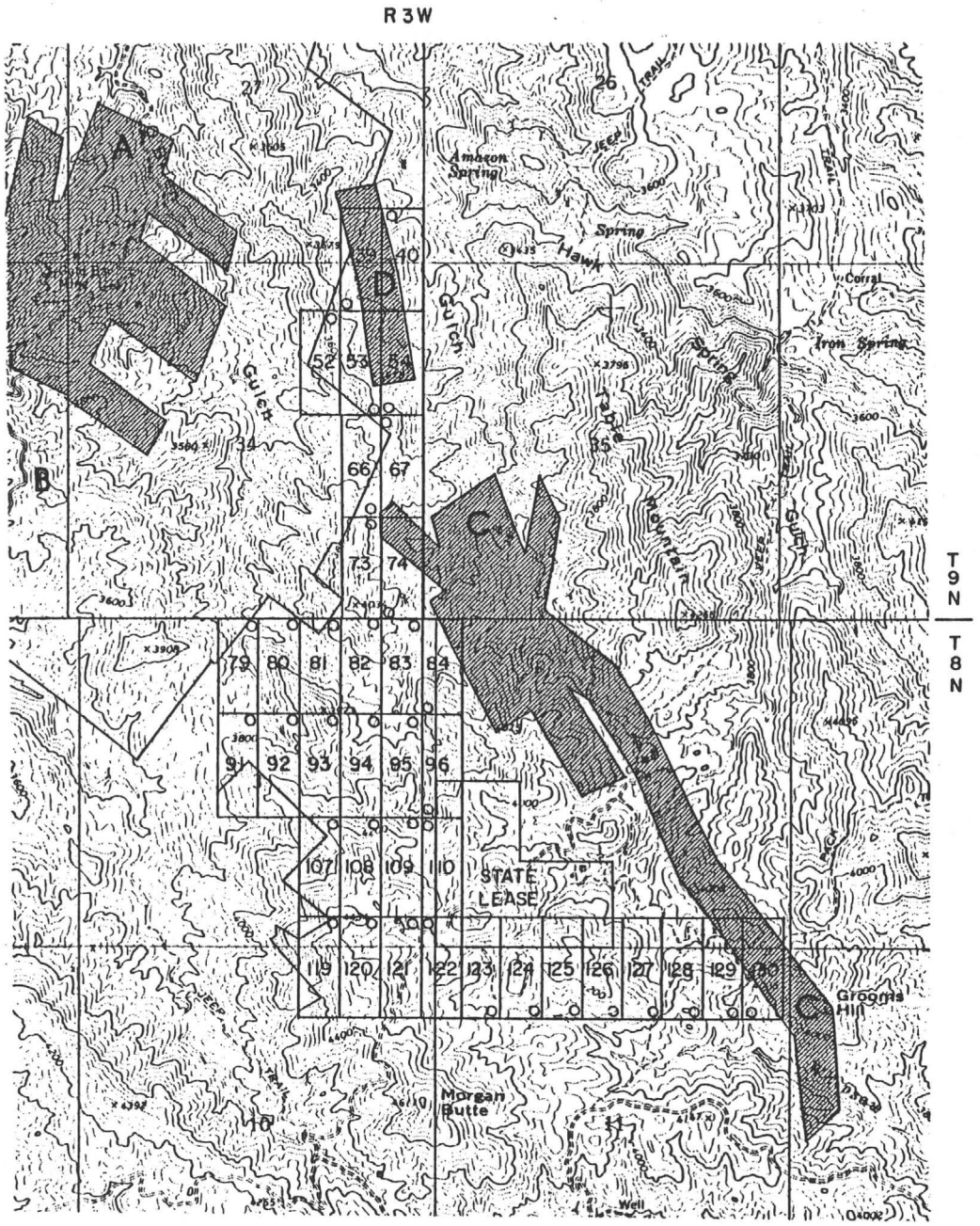

R 3W
T 9 N
T 8 N
A
B
C
D
Amazon Spring
Hawk Spring
Iron Spring
Corral
Gulch
Mountain
STATE LEASE
Groom Hill
Morgan Butte
Well
NICOR MINERAL VENTURES
One of the NICOR home energy companies
COMPILED: DATE:
DRAFTED: DATE:
REVISED: DATE:
GOLD BLUFF PROJECT
YAVAPAI COUNTY, ARIZONA
GB CLAIMS
DATE: 3-22-84 SCALE: 1" = 2000' DWG. NO.
NORTH
13°
0
2000
FEET
PATENTED CLAIMS
UNPATENTED CLAIMS
ALL LOCATION MONUMENTS ARE OFFSET 10' FROM INDICATED CORNER.

Figure 2

with an average grade of 0.75 opt Au. This ore was extracted from an open cut on the outcrop of one of several breccia zones that occur in the area.

The ore zone at the Gold Bar consists of a quartz-sericite-pyrite breccia pipe that measures 40 by 50 feet in cross section and plunges 30° to the southwest.

In 1907-1908, the Interior Mining and Trust Company is reported to have mined the pipe from the 385 foot level to the glory hole at the surface. During this period, the operators erected a 100 ton per day mill; 1907 production amounted to $33,402 in bullion and concentrates. The concentrates are reported to have averaged 2 opt Au, 3 opt Ag, 49% Fe, 15% Si and 15% S. In 1908, $91,749 worth of gold was produced from the district; most of this production was from the Gold Bar. In 1915, the company was reorganized as the Gold Bar Mining Company, and a shaft was sunk to intersect the pipe on the 700 foot level. Only sporadic production has ensued since 1918, with a brief period of activity during the early 1930's when lessees worked the deposit in a small way. The property was leased by Goldhurst during the 1970's and early 1980's; they reconditioned the 700 foot shaft, dewatered the workings and did limited underground drilling. The property reverted to its owners, the DeVaults of Wickenburg during 1984. A total of 25,000 tons of 0.6 opt gold ore has been produced from the Gold Bar, primarily prior to 1918.

Red Bluff Vein System - Workings on the Red Bluff vein system probably date from the late 1880's, but no recorded production figures are available for the area. The north-south trending Red Bluff vein system is well over two miles long and generally consists of two highly oxidized veins separated by 200 to 400 feet. The area between and peripheral to these veins is cut by numerous subparallel and cross veins, and the whole zone is variably sheared and pervasively mineralized with hematite. The property was prospected for copper during the late 1920's by the Milevore Copper Company. During the period of activity, a 500 foot exploration shaft was sunk and considerable diamond drilling was done on one of several large vein segments that outcrop near the head of Amazon Gulch. These workings were alternately known as the Groom or the Milevore Mine, and reportedly shipped several hundred tons of high grade copper-gold ore. During 1933 and 1934 a small amount of siliceous gold ore was produced from one of the shallower workings in the area. A 30 ton mill was run by R.L. Beals and Associates during this period to recover the fine grained gold from their siliceous shows. Very little subsequent work appears to have been done until the late 1970's and early 1980's when the Red Bluff Mining Company operated a small custom mill on the property. This operation produced a small amount of gold from open cuts on several of the cross veins, but no reliable grade or tonnage figures are available. The area is currently inactive.

NICOR personnel originally sampled the area in July of 1981. The area between the Gold Bar and Groom Mines was staked during March of 1982. Detailed surface and underground mapping of the claimblock and surrounding areas was undertaken by K.M. Emanuel during January and February of 1983. The Gold Bluff claimblock has been under option to Permian Resources since January 18, 1985.

PROPERTY DESCRIPTION

Figure 2 shows the current status of the Gold Bluff (GB) claims. The area was originally staked during March, 1982 as a contiguous group of 130 lode claims that covered much of sections 27 and 34. These claims were staked after BLM records indicated that the unpatented ground surrounding the Gold Bar patents had lapsed. Because the lapse in assessment was finally shown to be due to a misfiling error at the BLM, many of the GB claims had to be dropped. The current claimblock consists of 37 unpatented lode claims and 120 acres of land leased from the state.

NICOR was approached by Permian Resources during March of 1984 with a proposal to joint venture the GB claims. A lease/purchase agreement was signed on January 19, 1985, which requires Permian to make biannual advance net smelter royal payments to NICOR. The payments apply to a 3% NSR on all production from NICOR ground. When total payments reach $400,000, NICOR will quitclaim all its interest in the GB claims to Permian.

The remainder of the unpatented ground in sections 2 and 34 was not available for minerals location at the time of acquisition. The group of patents covering the Red Bluff vein system are controlled by numerous individuals and have highly fragmented ownership. The extensive group of 15 patented and 90 unpatented claims ringing the Gold Bar mine are owned by Mr. and Mrs. Jack DeVault of Wickenburg, Arizona. These claims were unsuccessfully negotiated for during 1982, at which time they were under lease to a Mr. Steven Ivanov of Goldhurst Resources, Inc. Mr. Ivanov gave his permission to freely map and sample the property during our negotiations, but his demands were unrealistic and negotiations were suspended. The property has since reverted to the DeVaults, and is currently rumored to be under option to Sunshine Mining. Table 1 summarizes the current status of the important claims peripheral to the GB group which were evaluated during this study.

TABLE 1. SUMMARY OF ADJACENT PROPERTIES
(Keyed to Figure 2)

The Gold Bar property consists of the following:

A) A central group of fifteen (15) patented claims, (USMS No. 40-60-A)

Owner: Jack & Dorothy DeVault, Wickenburg, Arizona

Charm	Buttons	Cable
Fob	Crown	Robert
The Home	Black Bear	Red Wonder
White Blaze	Gilbreth	Little Jim
Homestake	Bennet	Little John

A single patented Millsite Claim the "Brunton" at the extreme north end of the group (USMS No. 40-60-A)

Table 1 (continued)

B) Ninety (90) located claims:

Owner: Jack & Dorothy DeVault, Wickenburg,Arizona

Gold Bar 1-72 inclusive

Little Bear	Little Jim No. 3	Green Monster
Charm No. 2	Little John No. 2	Green Monster No. 2
White Blaze No. 2	Little John No. 3	Crown No. 2
Gilbreth No. 2	Robert No. 2	Buttons No. 2
Bennet No. 2	Red Wonder No. 2	The Home No. 1
Little Jim No. 2	Red Wonder No. 3	Home No. 2

The Red Bluff Vein Patents consist of the following:

C) A group of eighteen (18) patented claims under various ownership:

(USMS No. 1385)

Owner: Irene Woods, Arizona Amazon Mining Co., c/o Floyd N. Norris, 424 S. Irving Blvd., L.A.,CA 90020

Amazon	South Amazon	Congo
Gypsy	Iron Hill	Cola

(USMS No. 1553)

Owner: W.M. Webber, Commercial Merchants Bank, 301 S. Adams, Peoria, ILL

Lonne Star	Homestake	Homestake 2&3
Toltec	Bellaira	Flying Dutchman

(USMS No. 1331)

Owner: Highly Fragmented

Little Dandy	Keystone	Curley

D) USMS No. 1384

Owner: (?) Currently leased to Permian Resources

Copper Prince	Texas Chief

GEOLOGY

GENERAL

The general area of the Gold Bluff prospect is dominantly underlain by 1.6 - 1.8 by old Yavapai schist which has been intruded by the 1.4 by old Bradshaw granite. These units have been subjected to at least one period of penetrative deformation. The basement complex has been intruded by at least four sets of younger dikes (Plate I). The most recent period of intrusive activity consists of a small granitic stock that is partially rimmed by intrusive andesite. This stock is variably altered and is rimmed by a zone of fluidized breccia that has been mineralized by quartz, sericite and pyrite. A number of other smaller brecciated zones occurs immediately to the southwest of the stock, but are not directly associated with an intrusive.

A very prominent system of quartz porphyry rhyolite dikes occurs throughout the southeastern half of the property, but terminates in a sill complex that dips below the area of pipe mineralization (Plate I). A large swarm of cupriferous veins crosscuts the area from southeast to northwest; these veins parallel the rhyolite dike swarm and die out as the area of pipe development and granitic intrusion is approached. The apparent radial aspect of the rhyolite dikes and vein swarms relative to the intrusive suggests a possible genetic relationship, but this cannot be

demonstrated without further work on the ages and geochemistry of the various intrusive rocks.

PRECAMBRIAN

Quartzofeldspathic Schists and Gneiss: Most of the area consists of quartz-hornblende-biotite schist (p€s) and quartz-feldspar-biotite schists and gneisses (p€gs). These rocks were not differentiated in the field, except where thick continuous horizons of the amphibolitic schist were present (see next section). The statigraphy is quite complex, but generally consists of interfingering metasedimentary and metavolcanic rocks. The section generally contains 10 to 40% amphibolite schist, is strongly foliated and typically strikes northeast with shallow to moderate dips to the north and west. Large scale southeast plunging folds appear to be present to the southwest of the area mapped, but differentiation of such structures within the prospect area would have required a much more detailed structural analysis than was possible in this study.

Amphibolite Schists: These rocks are macroscopically identical to the amphibolites within the Yavapai schist, but are large enough to break out as separate units (p€as). The rock is composed of highly foliated quartz-hornblende-biotite-chlorite schist. Outcrops generally crosscut the trend of earlier lithologies and are elongated towards the northwest. These rocks

have the same metamorphic fabric as the enclosing rocks and may represent highly deformed dikes and sills.

Tourmaline Granite and Pegmatites: The schists and gneisses of the basement complex are widely intruded by northeast to northwest trending dikes and pods of medium- to coarse-grained leucogranite (p€pg). Most of the rock is composed of hypidrimorphic aggregates of alkali feldspar and quartz with up to 10% coarse black tourmaline. The rock is locally very coarse-grained to pegmatitic in texture. Very little foliation is developed in this unit, but it locally appears to be truncated by foliated amphibolite dikes (north center sec 3); in the same area leucogranites also appear to cut these same amphibolites, suggesting a close temporal relationship of the two rock types. The lack of foliation in the leucogranites may be due to their coarse grained, massive character. Most exposures of these dikes are highly fractured.

Amphibolite Dikes: A number of thick northerly trending amphibolite dikes (p€a) crosscuts the earlier schists and granites. These bodies are steeply dipping, foliated parallel to their margins and contain relict igneous textures within their interior portions. Many of these dikes can be traced for distances of up to 3 miles in the area northeast of the Red Bluff vein system. The dikes are 100 to 600 feet wide and are composed of chloritically altered hornblende and biotite in a matrix of hard

plagioclase. Epidote is locally prominent in these rocks, as is limonite and hematite after pyrite. The margins of these dikes locally contain sparse copper oxides. Amphibolite dikes of this type appear to have been involved in large scale folding to the southwest of the study area.

TERTIARY(?)

Porphyritic to Aplitic Granite: A single exposure of unfoliated intrusive granite (Grp) occurs at the north end of the area mapped (center of sec. 27). This rock is pink in color, aplitic to locally coarse-grained in texture and locally contains foundered blocks of older metamorphic rocks. The rock locally appears slightly foliated near its margins, but is generally massive and medium grained in texture. It is composed of 30 to 50% quartz, 20 to 50% pink K-feldspar and 10 to 30% plagioclase, which is generally altered to sericite or clays. The rock appears sheeted near its northern boundary and dips back to the south at approximately 60°. The granite locally contains abundant quartz lined fractures and cavities, especially near its peripheral contacts. Pegmatitic and aplitic varieties of the granite locally occur as dikes within the central part of the intrusive. The granite is sericitically altered near its periphery, where it has also been intruded by andesite dikes (see below). Ringing most of the intrusive is a zone of sericitic, pyritic, and silicic alteration (pipe #5) that shows evidence of fluidization (see section on mineralization).

Andesite Dikes and Intrusive Bodies: Andesite dikes and intrusive masses (Ta) are locally present within the area mapped, but are not abundant. These rocks are light gray to greenish brown in color, and are aphanitic to porphyritic in texture. Much of the matrix is a very fine grained mixture of felted plagioclase laths and chlorite. The phenocrysts consist of 1 to 2% xenomorphic quartz, up to 2% K-feldspar, and from 0 to 20% tabular hornblende; the latter are up to 1 cm across. Andesite to hornblende diorite intrusive masses and dikes occur within and along the margins of the porphyritic granite described above. These rocks are often highly sericitized and constitite the most extensive exposures of andesite mapped in the study area. Few crosscutting relationships have been observed between andesite and younger rocks, but a single exposure near the southeast corner of section 3 suggests that the andesites may be older than the rhyolitic dikes discussed in the following section.

Quartz Porphyry Rhyolite Dikes and Breccias: The most prominent post-Precambrian litholgy exposed on the Gold Bluff property is a series of northwest trending dikes and a sill composed of porphyritic quartz-eye rhyolite (Tr). These intrusives form a zone of anostomosing to subparallel diking that is over a half mile wide and nearly three miles long. Most of the dikes are nearly vertical and hold up prominent ridges. One major dike in

the southwest part of section 34 becomes progressively shallower in dip towards the northwest and eventually terminates in a sill that dips at 25 to 37 northwest under the area of breccia pipe mineralization. Lithologically, the rhyolites can be described as a very fine grained to locally flow banded gray felsite with 10 to 30% abundant glassy quartz eyes (1 to 5 mm). One to five percent irregular argillized feldspar laths (up to 4 mm) are also present. The margins of individual dikes are generally highly flow foliated and show variable amounts of argillic alteration. The surronding rocks are also argillized in some areas (S.C 1/4 corner; sec 34), for distances that are comparable to the dike thickness. Most dikes are 20 to 200 feet wide. In some areas, multiple rhyolite intrusions have resulted in small exposures of rhyolite breccia (Trb; west half sec. 2).

STRUCTURE

Early structural evolution of the area was dominated by the deformation of the Yavapai series sediments and volcanics and the intrusion of the Bradshaw granite. These events imparted a general northeast trending foliation to the Yavapai schists. A later(?) series of southeast plunging folds may also be present, but has not been well documented. Diabase and leucogranite dikes trend variably across the earlier foliated rocks and suggest a complex structural and magmatic evolution within the region. More recent brittle deformation within the area follows these earlier trends. Two persistent systems of faults and fractures characterize the local structure: one group trends about N70 E, the other system trends approximately N30 W. Most of the mineralized fissures in the area belong to the group that strikes N30 W.

An orientation study of the visible structural elements of the Gold Bar breccia pipe was undertaken to determine their relationship to the known plunge of that feature. Sheeting structures were found to define a roughly conical surface about the pipe's axis of plunge. Extrapolation of this data to the other breccia pipes suggests that they all plunge at 20 to 40 to the southwest (Plates II and III).

MINERALIZATION AND ALTERATION

Two types of mineralization have been recognized within the area: 1) Gold-pyrite breccia pipes - mineralization of this type occurs near the Gold Bar Mine, but was not recognized elsewhere in the area mapped. 2) Silicified veins with hematite and copper oxides that trend generally N30°W - vein structures of this type occur in profusion along the Red Bluff trend and to a lesser extent within the GB claims. These vein swarms trend towards a large circular breccia pipe exposed in O'Brien Wash (Plate I), but die out a few thousand feet to the southeast. The Gold Bluff claims contain two small annular structures defined by rhyolite diking and minor veining (east half sec 3). The GB claims were not found to contain recognizable breccia pipe development or widespread vein mineralization as in the Red Bluff system to the east.

The Gold Bar mine exploited a mineralized breccia pipe that occurs within a closely spaced group of five mineralogically similar, but somewhat larger structures. The largest of the group forms an annular zone over 1000 feet across that rims the granitic intrusive (Grp) exposed in O'Brien Wash (Plate III).

The ore zone at the Gold Bar is 40 by 60 feet in section and is relatively uniform in size to the 540 foot level. The deposit has produced about 25,000 tons of 0.6 opt gold ore with

additional tonnage reportedly remaining above a faulted lower extension. Underground drilling by Goldhurst reports several 10 foot intercepts of 0.11 to 0.66 opt gold and a number of low grade shows in the supposed lower extension of the pipe. They also reported chalcopyrite mineralization in shears at depth. The pipe-like zone is mineralized by quartz-pyrite veining and wallrock replacements. The outer margin of the pipe is pervasively silicified and its interior contains rounded blocks of sericitically altered wallrocks in a fine grained matrix of quartz, sericite and pyrite.

The mineralization in the Red Bluff system is within two major (approximately N30° W bearing) fissures that are 200 to 400 feet apart (Plate I). Locally abundant smaller subparallel veins and crossfractures (approximately N70o E bearing) occur between and adjacent to the larger structures. The two principal veins are between two and forty feet wide (average eight feet) with lengths of 2000 and 3000 feet. At least one major crossfracture attains a thickness of eight feet. The mineralization occurs as highly oxidized veins and disseminations of quartz and hematite, with locally abundant (up to 3%) oxidized copper minerals (mal. - chrys. - azur.). Very few sulfides were noted during field examinations. Numerous vein segments create an en-echelon vein swarm that can be traced more or less continuously for three miles.

GEOCHEMISTRY

Sampling within the glory hole of the productive Gold Bar #1 pipe averaged 0.195 opt gold from the walls and pilars of the mined out area (Appendix 1, Plate II). The outcrop above the glory hole was also mildly anomalous (0.28ppm gold), which compares well with the 0.24 ppm seen in a crosscut from the main glory hole (F46, Plate IV). The surface exposures and accessible underground workings of each of the other mineralized breccias were also found to be locally anomalous:

Samples from the outcrop of pipe #2, which has no workings, averaged 0.16ppm (Appendix 1).

Surface samples from the #3 pipe averaged 0.26ppm gold, but under ground sampling averaged only 0.03ppm Au. However, most of the workings sampled a crosscut to the main mineralized area (Plate IV). Surface sampling on the #4 pipe (also called the White Blaze) showed only 0.1ppm Au, with slightly better values in cross-cutting strucures (0.4ppm Au, Appendix 1).

The large annular structure of the #5 pipe displayed weakly anomalous Au and Mo. Surface samples averaged 0.025ppm gold with Mo values up to 30ppm (Appendix 1). Underground sampling in the #5 adit (Plate IV) averaged barely 0.01ppm Au.

Although most of the pipe exposures show surface anomalies comparable to that above the Gold Bar mine, the only structure with the potential for a NICOR sized target (pipe #5) displays the weakest gold values. Given the size of the #5 pipe, however, the downplunge projection might still represent a viable target (1-2MMT @ 0.2+ opt Au). Should the property become available under reasonable terms (currently optioned by Sunshine), a closer look at the area of pipe clusters may be warranted. An IP and resistivity survey over the #5 pipe could help to pinpoint any areas of high sulfide content at depth.

Most of the surface sampling done on the Red Bluff veins revealed anomalous, but overall subeconomic, gold mineralization. The average of twenty four representative chip and dump samples is 0.043 opt gold with 0.7% copper. The southwestern most part of section 35 did show some potential for precious metals mineralization. A nineteen foot chip across a zone of veining and altered granite assayed 0.155 opt gold (X-609, X-610). A more diffuse 40 foot zone assayed 0.03 opt gold (X-614). These

samples are on a vein segment that is 1000 feet long with an average width of twenty feet. Exposures between the two sampling points are very poor, however, and continuity of the zone could not be demonstrated without trenching or drilling. Although dissemination of gold values into wallrock was noted at various localities along the vein, cross-fracturing and veining do not appear to be dense enough for development of an open pit sized target suitable for NICOR.

COSTS

The costs incurred to date by NICOR (and DeKalb) on the Gold Bluff property are as follows:

65 mandays @ $275/day	-	$17,875
94 claims @ $81.13/claim	-	$ 7,626
land takeoff and negotiations	-	$13,370
111 samples @ $20/sample	-	$ 2,220
Total		$41,091

REFERENCES

Trenholme, L.S., 1979, The Gold Bar Prospect, Yavapai, Co., Arizona (Goldhurst Resources Report - unpublished)

Wilson, D.W., et al, 1967, Arizona Lode Gold Mines and Gold Mining, ABM Bull 137 p62-64

APPENDIX 1. ASSAY RESULTS

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
X304	2.81	1.9	0.89%	-	-	R.B. vein: 4' chip vein
X305	6.56	2.1	1.65%	-	-	R.B. vein: S grab
X609	3.95	1.6	0.26%	-	11	R.B. vein: 9' chip vein
X610	6.59	3.5	0.51%	-	10	R.B. vein: 10' chip vein
X611	11.0	7.3	3.28%	-	22	R.B. vein: select trench
X612	1.98	1.8	1.33%	-	5	R.B. vein: select trench
X613	<0.10	1.1	0.16%	-	11	R.B. vein: 10' chip vein
X614	1.10	<1.0	0.22%	-	24	R.B. vein: 40' chip vein
X615	<0.1	1.0	0.54%	-	13	R.B. vein: 8' chip
F-8	6.82	3.4	0.1	54	3	#1 Glory Hole: S.G. Qtz
F-9	0.86	2.5	1.2%	62	17	R.B. vein: 8' chip
F-10	2.13	3.3	0.59%	88	112	R.B. vein: 8' chip
F-35	0.34	-	-	-	-	#2 pipe: COS
F-36	0.17	-	-	-	-	#5 pipe: COS
F-37	0.07	-	-	-	-	#5 pipe: grab from pit
F-38	0.10	-	-	-	-	#4 White Blaze pipe: COS
F-39	0.10	-	-	-	-	#5 Pipe: R. grab from pit
F-40	0.17	-	-	-	-	#5 Pipe: Select outcrop chip
F-41	Tr	-	-	-	-	#5 Pipe: COS
F-42	0.07	-	-	-	-	#5 Pipe: sidewall chip 50' along adit

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F-43	0.17	-	-	-	-	#2 Pipe: 75' long outcrop chip in road cut
F-44	N.R.	52.8	-	-	-	#1 Pipe: pilar chip in Glory Hole (6')
F-45	7.6/ 8.46	10.2	-	-	-	#1 Glory Hole: 12' chip
F-46	0.24	-	-	-	-	#1 Glory Hole: 20' chip in cross cut
F-47	1.1	-	-	-	-	#1 Pipe: COS above Glory hole
F-48	0.34	-	-	-	-	#3 Pipe: grab from adit dump
F-49	0.31	-	-	-	-	R.B. vein: 10' chip
F-50	0.48	-	-	-	-	R.B. cross fracture: R. grab
F-51	0.65	-	-	-	-	R.B. vein: 3.7' chip
F-52	3.53/ 3.60	-	-	-	-	R.B. vein: 10' chip
G-86	0.27	-	-	-	-	#3 Pipe: COS
G-87	0.34	-	-	-	-	#3 Pipe: COS
G-88	0.07	-	-	-	-	#3 Pipe: COS
G-89	0.10	-	-	-	-	3'chip qtz vein
G-90	13.1/ 7.81	-	-	-	-	R. grab Blue Moon veins
G-91	0.96	-	-	-	-	R. Dump Prospect
G-92	0.61	-	-	-	-	Unnamed vein: 8' chip
G-93	0.41	15.2	-	-	-	#4 White Blaze vein dump semi select
G-94	0.38	-	-	-	-	#4 Semi Select White Blaze Pipe Qtz veinlets

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
G-95	0.34	-	-	-	-	R. Dump
G-96	1.60	10.3	-	-	-	White Blaze vein same vein S.Grab
G-97	5.86	-	-	-	-	R. Grab: dump
G-98	1.30	-	-	-	-	R.B. vein: R. Dump
G-99	8.596	-	-	-	-	Prospect pit R. grab vein
G-100	0.31	-	-	-	-	#2 Pipe: Select Qtz-pyrite
G-101	0.34	-	-	-	-	R. Dump: #2 shaft
G-102	0.96	-	-	-	-	R. Dump: #1 shaft
G-103	5.34	6.8	-	-	-	Glory hole pilar: #1 pipe
G-104	Tr	-	-	-	-	Red Wonder: Select CuOx
G-105	0.82	-	-	-	-	R.B. vein: R. grab ore pile
F-291	<0.02	<.8	265	<2	<10	G.B. claims: Select hem vein
F-292	7.50	13.0	900	8	50	G.B. claims: R. Dump, 25' vein
F-293	0.05	0.2	620	<2	100	G.B. claims: R. pit in Rhy
F-294	0.54	0.2	1400	2	20	G.B. claims: 11' chip vein
F-295	0.06	0.2	405	<2	20	R.B. vein: Iron Hill; R. trench
F-296	0.28	0.6	1350	<2	50	R.B. vein: Iron Hill; R. trench
F-297	4.6	0.2	230	<2	30	R.B. vein: Iron Hill; R. Dump pit

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F-298	1.6	3.8	10%	2	10	Altered area; select float
F-299	0.29	0.4	630	<2	30	Congo area: 21' chip vein
F-300	0.15	1.0	5.1%	2	40	R.B. vein: R. pit
F-301	1.8	2.0	6800	2	60	R.B. vein: R. trench
F-302	0.14	0.8	1650	2	70	R.B. vein: 17' chip vein
F-303	0.05	0.2	430	2	<10	R.B. vein: R. Dump
F-304	19.0	9.60	82	-	-	G.B. claims: select pit
F-305	1.3	1.68	3.5%	-	-	G.B. claims: select pit
F-306	3.3	0.99	5860	-	-	G.B. claims: select pit
F310	6.3	53.2	-	9	-	#1 Glory Hole pipe: 6' chip
F311	24	25.4	-	5	-	#1 Glory Hole pipe: 7' chip
F312	5.0	12.3	-	7	-	#1 Glory Hole pipe: 7' chip
F313	2.6	8.16	-	9	-	#1 Glory Hole pipe: 7-5' chip
F314	.32	5.97	-	10	-	#1 Glory Hole pipe: 6-5' chip
F315	.77	7.13	-	10	-	#1 Glory Hole pipe: Muck pile
F316	.23	3.43	-	5	-	#1 Glory Hole pipe: Muck grab
F317	<.01	.79	-	7	-	#1 Pipe: COS outcrop
F318	.02	1.06	-	12	-	#1 Pipe: 5' chip outcrop
F319	.05	.51	-	5	-	#1 Pipe: 7' chip outcrop

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F320	.12	.45	-	5	-	#1 Pipe: 5' chip outcrop
F321	.37	.55	-	3	-	#1 Pipe: COS
F322	<.01	.34	-	5	-	#5 Pipe: 5' chip
F323	<.01	.58	-	8	-	#5 Pipe: 5' chip
F324	<.01	.58	-	9	-	#5 Pipe: 5' chip
F325	<.01	.82	-	9	-	#5 Pipe: 5' chip
F326	<.01	.82	-	13	-	#5 Pipe: 7' chip
F327	<.01	.14	-	6	-	#5 Pipe: 5' chip
F328	<.01	.69	-	11	-	#5 Pipe: 17' chip
F329	.02	.27	-	6	-	#5 Pipe: 18' chip
F330	.12	.93	-	6	-	#2 Pipe: COS
F331	.11	.51	-	6	-	#2 Pipe: COS
F332	.21	.55	-	6	-	#2 Pipe: COS
F333	.07	.93	-	4	-	#2 Pipe: COS
F334	.12	2.57	-	5	-	#2 Pipe: Trench below outcrop
F335	.04	.34	-	8	-	#3 Black Bear: adit dump
F336	.04	.21	-	4	-	#3 Pipe: UG R. chip outer adit
F337	.02	.34	-	8	-	#3 Pipe: UG 3' chip
F338	<.01	.27	-	4	-	#3 Pipe: UG 5' chip
F339	.05	.48	-	8	-	#3 Pipe: UG 5' chip
F340	.03	.62	-	11	-	#3 Pipe: UG 4.5' chip

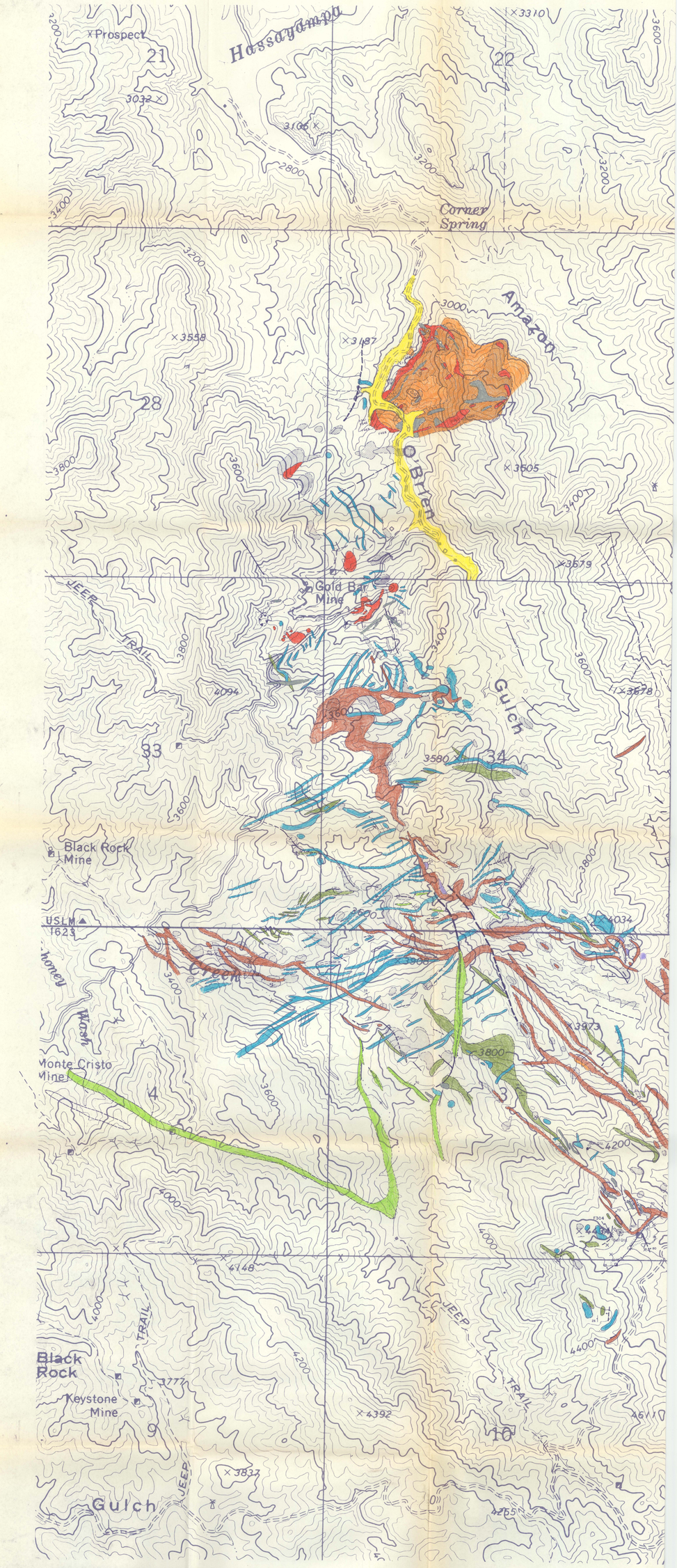
Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Mo ppm	Sb ppm	As ppm	Sample Description
F341	.02	.24	-	4	-	#5 Pipe: COS
F342	.02	.69	-	6	-	#5 Pipe: COS
F343	.02	.48	-	6	-	#5 Pipe: COS
F344	.02	1.20	-	6	-	#5 Pipe: COS
F465	0.8	1.2	10	<1	<10	R.B. vein: Select vein Qtz
F466	<.01	0.3	30	<1	<10	#5 Pipe: COS
F467	<.01	0.2	15	<1	<10	#5 Pipe: COS
F468	<.01	0.2	10	<1	13	#5 Pipe: COS
F469	<.01	<0.2	10	<1	30	#5 Pipe: COS
F470	<.01	0.2	10	<1	<10	#5 Pipe: COS
F471	<.01	1.6	10	<1	<10	#5 Pipe: COS
F472	<.01	0.2	<10	<1	<10	#5 Pipe: COS
F473	<.01	0.3	15	<1	<10	#5 Pipe: COS
F474	<.01	0.3	<10	<1	10	#5 Pipe: COS

Note: COS = composite outcrop sample
R.B. = Red Bluff
R.dump = Representative dump sample
U.G = Underground

All values in ppm unless otherwise noted.

PLATE I



NICOR Mineral Ventures, Inc.

GOLD BLUFF PROJECT
GEOLOGIC MAP

SCALE: 1"=500' | DRAWN: SELKE | DATE:

QUATERNARY
- Qa ALLUVIUM

TERTIARY
- Tr QUARTZ PORPHYRY RHYOLITE DIKES
- Trb QUARTZ PORPHYRY RHYOLITE BRECCIA
- Ta ANDESITE DIKES
- Grp PORPHYRITIC TO APLITIC GRANITE
- Pipe bodies

PRECAMBRIAN
- PCa AMPHIBOLITE DIKES
- PCg TOURMALINE GRANITE/ PEGMATITES
- PCa AMPHIBOLITIC SCHIST
- PCgs QUARTZOFELDSPATHIC SCHISTS AND GNEISSES

FeO, STAINED AREAS
QUARTZ VEINS
FAULTS

NORTH

0 500
FEET
SCALE: 1"= 500'


23
24
25
26
35
36
1
2
11
3710
3400
3600
3200
3276
Crown Point
Spring
Roberts Camp
3439
3667
JEEP
TRAIL
3955
3703
Amazon Spring
Hawk
Spring
3435
Corral
Iron Spring
3796
3914
Table Mountain
3780
Gulch
4197
4265
4454
Swallow
4075
4095
4000
3913
4350
4008
Grooms Hill
Whipsaw
4141
Well
Abe Lincoln Mine
4002
3694
Creek

PLATES II, IIA, III, IIIA, IV

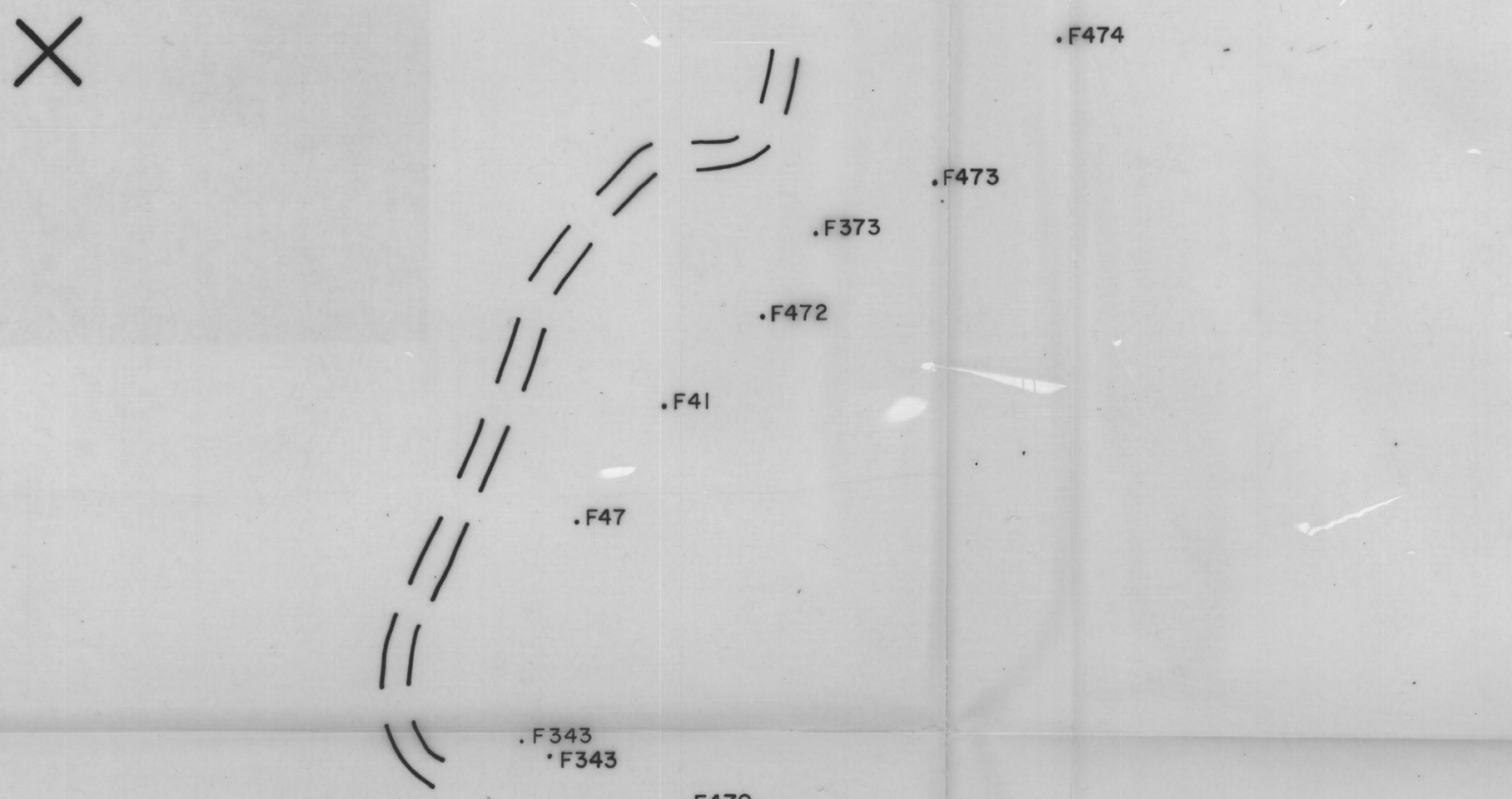


PLATE IIIA - GOLD BLUFF PROJECT, PIPE NO. 5 -
SAMPLE OVERLAY

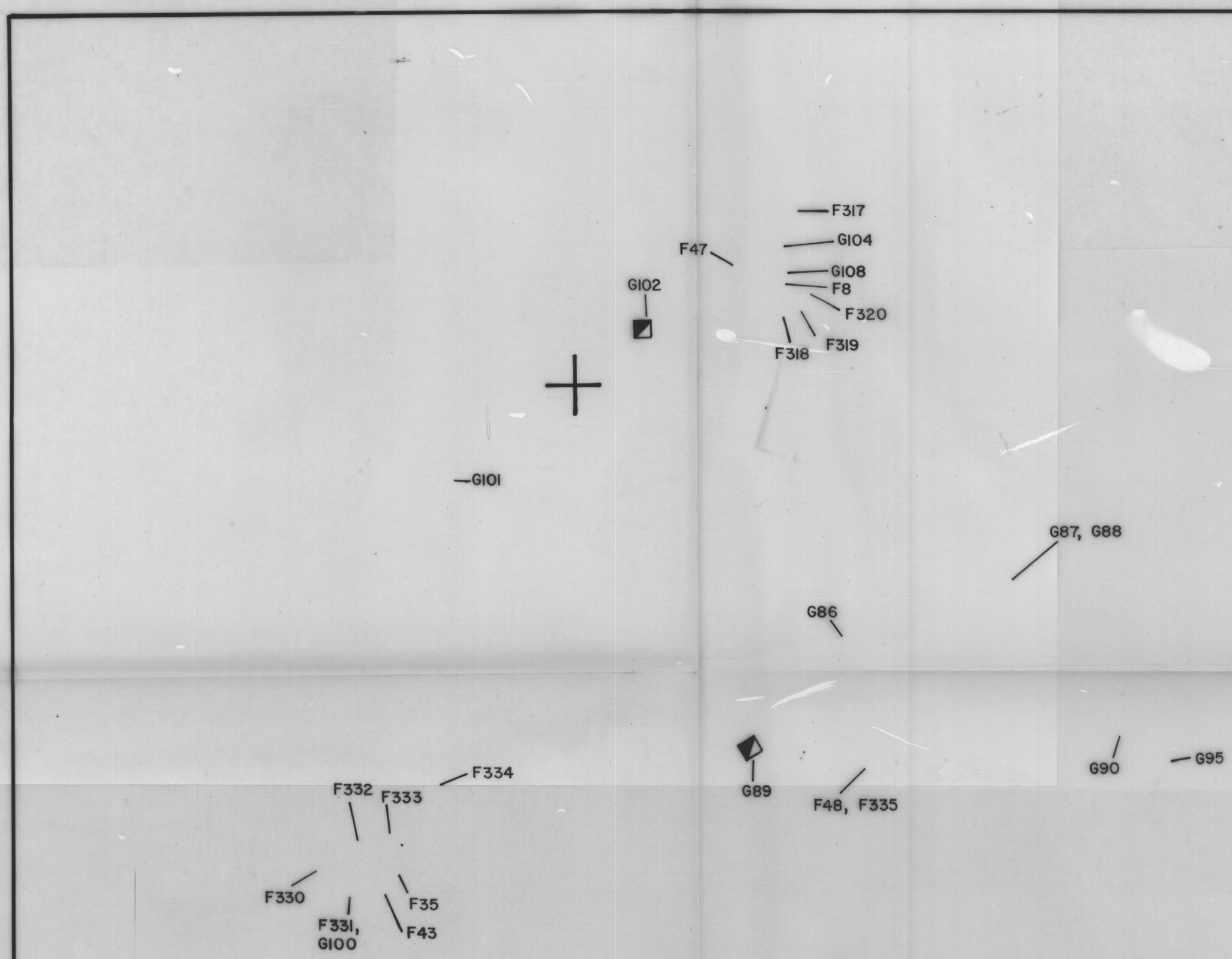
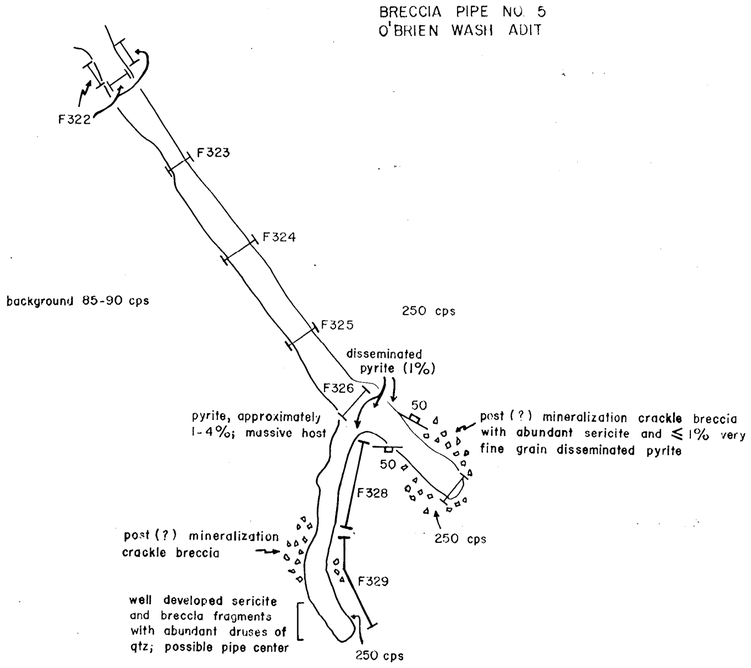
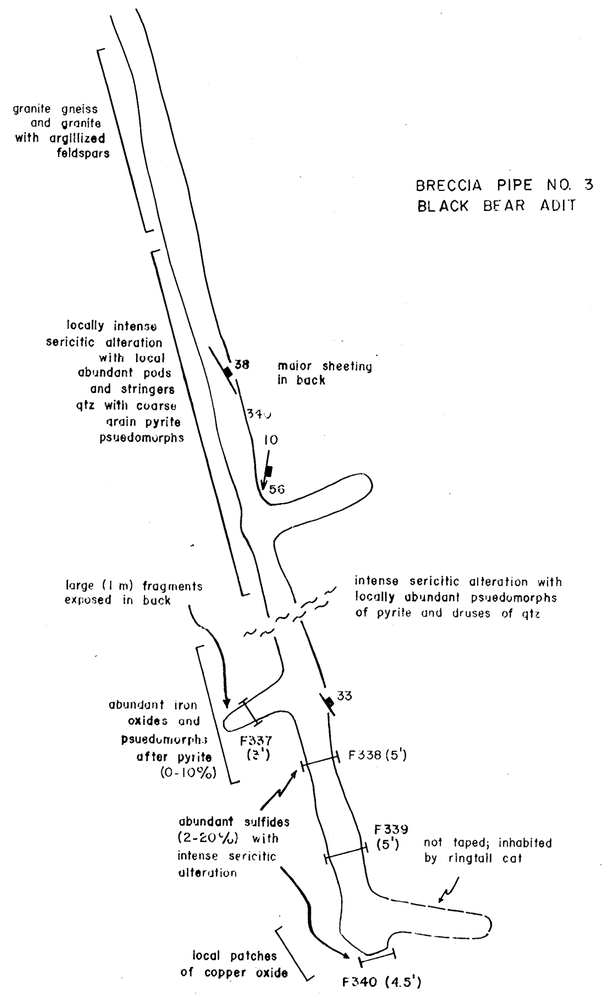


PLATE IIA - GOLD BLUFF PROJECT, PIPES NO. 1,
2 & 3 - SAMPLE OVERLAY

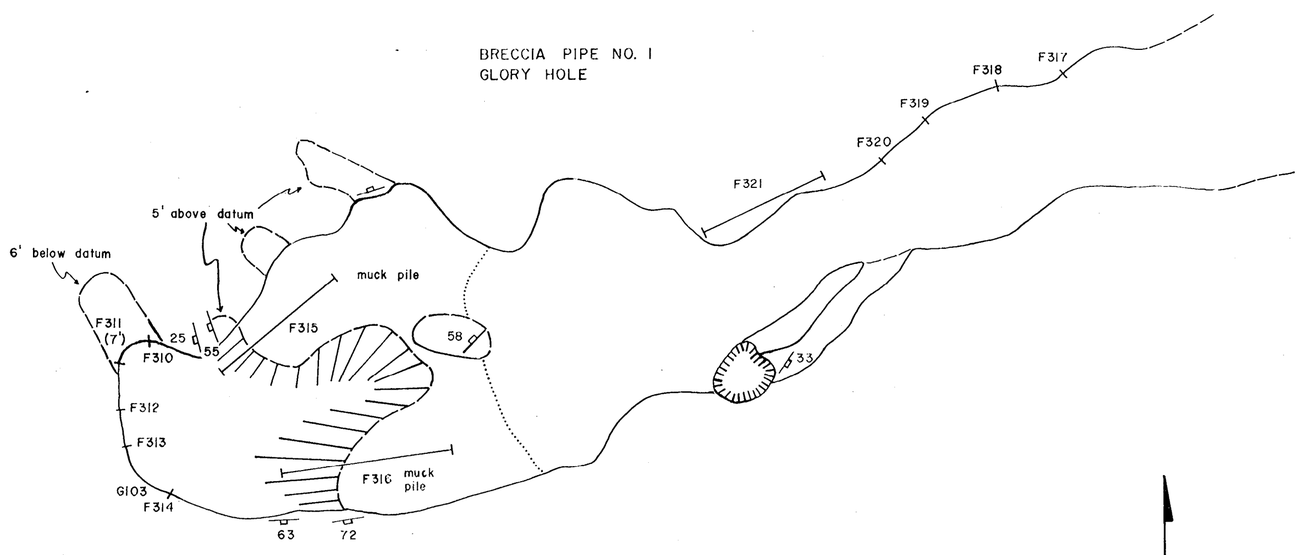
BRECCIA PIPE NO. 5
O'BRIEN WASH ADIT



BRECCIA PIPE NO. 3
BLACK BEAR ADIT



BRECCIA PIPE NO. 1
GLORY HOLE



N

NICOR MINERAL VENTURES
One of the NICOR basic energy companies

COMPILED: DATE:	PLATE IV UNDERGROUND WORKINGS OF THE GOLD BLUFF PROJECT
DRAFTED: DATE: BEM 1/20/85	
REVISED: DATE:	
DATE:	SCALE: 1" = 250' DWG. NO.

NICOR Mineral Ventures, Inc.

PLATE II

GOLD BLUFF PROJECT,

PIPES 1, 2 & 3

SCALE 1" = 250'	DRAWN B. Morgan	DATE 1/18/85

IRON OXIDE STAINED PYRITE AND SERICITE ALTERATION

IRON OXIDE STAINED QTZ-SERICITE-PYRITE FLUIDIZED BRECCIAS WITH QTZ-KSPAR INTRUSIVE MATRICES

Tg — TERTIARY ( ) INTRUSIVE ANDESITES; GREY F.G. TO M.G. HORNBLENDE ANDESITE AND HORNBLENDE DIORITE

P€pg — PRECAMBRIAN ( ) GRANITE AND PEGMATITE DIKES AND INTRUSIVE MASSES; WHITE M.G. TO C.G. QTZ-KSPAR TOURMALINE GRANITES

P€s / P€gs — PRECAMBRIAN YAVAPAI SCHIST; DARK GREEN F.G TO M.G. AMPHIBOLITE AND BIOTITE QUARTZOFELDSPATHIC SCHISTS (P€s) AND GNEISS (P€gs)

FAULT, SHOWING DOWNTHROWN BLOCK

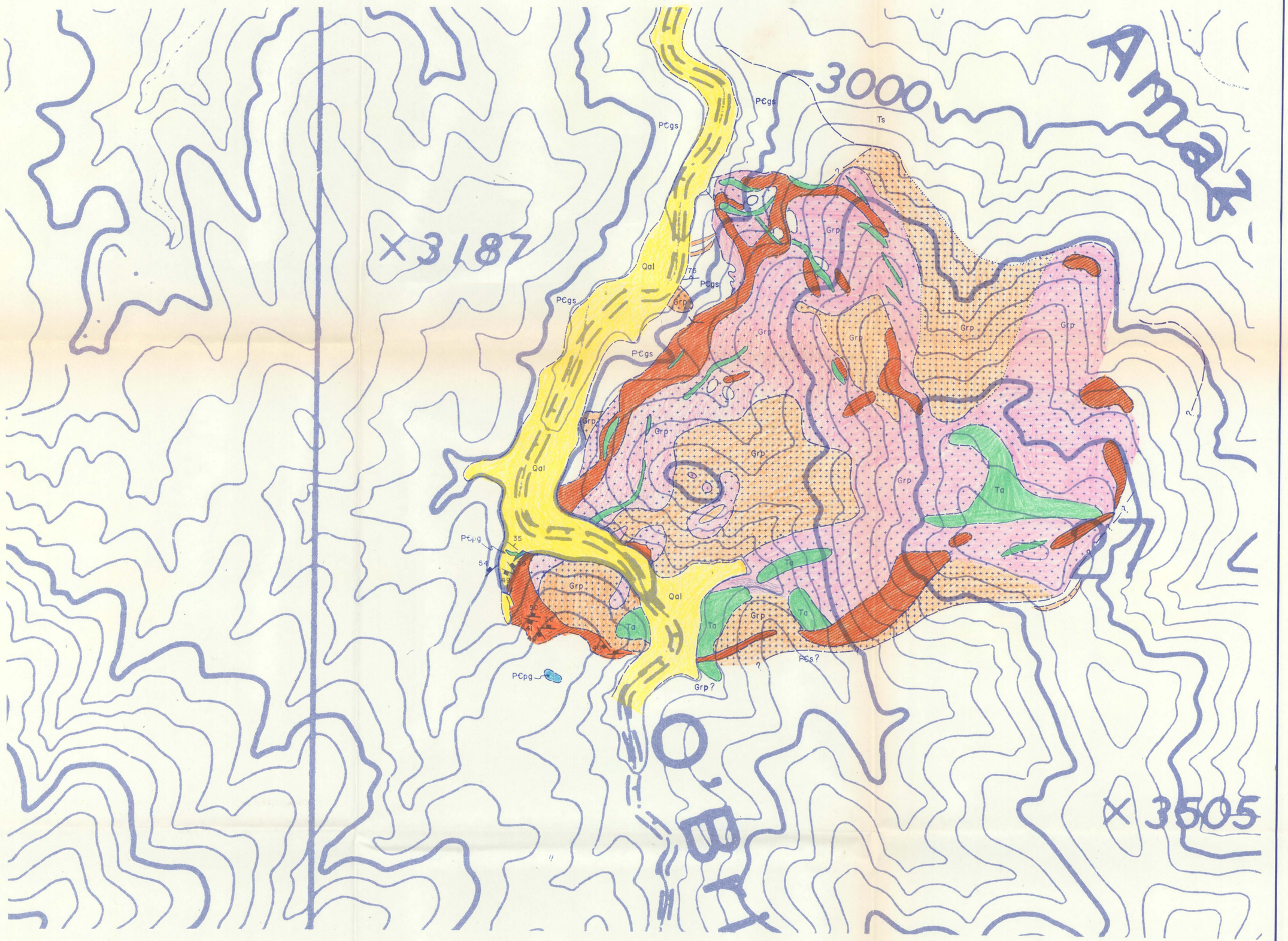
70 — FAULT, SHOWING DIP

65 — FOLIATION

22 — MAJOR PLANAR SHEETING WITHIN BRECCIA HORIZONS

65 — SUBSIDIARY PLANAR SHEETING WITH BRECCIA HORIZONS - FAINT, LESS WELL DEVELOPED, PLANAR FABRIC THAT IS OFTEN CROSSCUT BY MAJOR SHEETING

35 — DIRECTION AND PLUNGE OF BRECCIA PIPE AXIS



NICOR MINERAL VENTURES
One of the NICOR basic energy companies

COMPILED: DATE:	PLATE III: GOLD BLUFF PROJECT, PIPE NO. 5
DRAFTED: DATE: BEM 1/22/85	
REVISED: DATE:	
DATE:	SCALE: 1" = 250' DWG. NO.

EXPLANATION:

- IRON OXIDE STAINED PYRITE AND SERICITE ALTERATION
- IRON OXIDE STAINED QTZ-SERICITE-PYRITE FLUIDIZED BRECCIAS WITH QTZ-KSPAR INTRUSIVE MATRICES
- Ta — TERTIARY (?) INTRUSIVE ANDESITES; GREY F.G. TO M.G. HORNBLENDE ANDESITE AND HORNBLENDE DIORITE
- Grp — PORPHYRITIC TO APLITIC GRANITE
- PCpg — PRECAMBRIAN (?) GRANITE AND PEGMATITE DIKES AND INTRUSIVE MASSES; WHITE M.G. TO C.G. QTZ-KSPAR TOURMALINE GRANITES
- PCs / PCgs — PRECAMBRIAN YAVAPAI SCHIST; DARK GREEN F.G. TO M.G. AMPHIBOLITE AND BIOTITE QUARTZOFELDSPATHIC SCHISTS (PCs) AND GNEISS (PCgs)

- VEIN
- 65 — FOLIATION
- 20 — CONTACT WITH DIP
- 22 — MAJOR PLANAR SHEETING WITHIN BRECCIA HORIZONS
- 65 — SUBSIDIARY PLANAR SHEETING WITHIN BRECCIA HORIZONS - FAINT, LESS WELL DEVELOPED, PLANAR FABRIC THAT IS OFTEN CROSSCUT BY MAJOR SHEETING
- 35 — DIRECTION AND PLUNGE OF BRECCIA PIPE AXIS

N

GOLD BLUFF PROJECT REPORT

GOLD BLUFF PROJECT REPORT

January 18, 1985

Karl M. Emanuel

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

CONCLUSIONS AND RECOMMENDATIONS

The Gold Bluff (GB) claims were staked by DeKalb Mining in April of 1982. At that time, negotiations were underway to acquire an interest in the adjacent Gold Bar property. The Gold Bar property is known to contain numerous breccia pipes, one of which hosts high grade gold mineralization. The GB claims were mapped and sampled and shown to contain a prominent rhyolite dike swarm with localized alteration and veining, but there appears to be little potential for further breccia bodies. The adjacent Gold Bar property was found to contain a previously unrecognized intrusive with an annular ring of fluidized breccia over 1000 feet across. The large pipe structure is weakly anomalous in gold but is large enough to potentially host a 1 to 2MMT deposit of 0.2+ opt gold. The property is currently controlled by Sunshine(?) and should be re-examined if it becomes available.

NICOR was approached by Permian Resources during July of 1984 with a proposal to joint venture the GB claims. A lease/purchase agreement was signed by Permian on January 18, 1985. Permian also controls the Texas Chief and Copper Prince patents against which the GB claims abut. The mineralization in the area is part of a large hematitic vein structure that carries spotty values in copper and gold. Should they return the property to NICOR, it is recommended that the GB claimblock be dropped.

INTRODUCTION

LOCATION

The Gold Bluff property is situated in the Black Rock Mining district of southern Yavapai County, Arizona (Figure 1). The western part of the property (Gold Bar Mine area) can be reached by traveling 17 miles (27 km) northeast of Wickenburg on the Old Constellation road. Access to the eastern part of the property (Red Bluff vein area) involves travel over seven miles of rough dirt road that branches from the Constellation Road at a point 15 miles from Wickenburg. The ends of both roads are within 1.5 miles of each other and are separated by a narrow ridge (Figure 2).

HISTORY (summarized from Wilson et al, 1967)

All of the past production from the Gold Bluff project area has been from the Gold Bar and Red Bluff mine areas. The histories of each of these areas are summarized below.

Gold Bar Mine - The Gold Bar or O'Brien mine was initially discovered in 1879 and was first located in 1888 by a Mr. J. Mahoney. Only sporadic mining occurred until 1901, when the Saginaw Lumber Company erected a 10-stamp mill on the property and was reported to have treated 4000 tons of ore

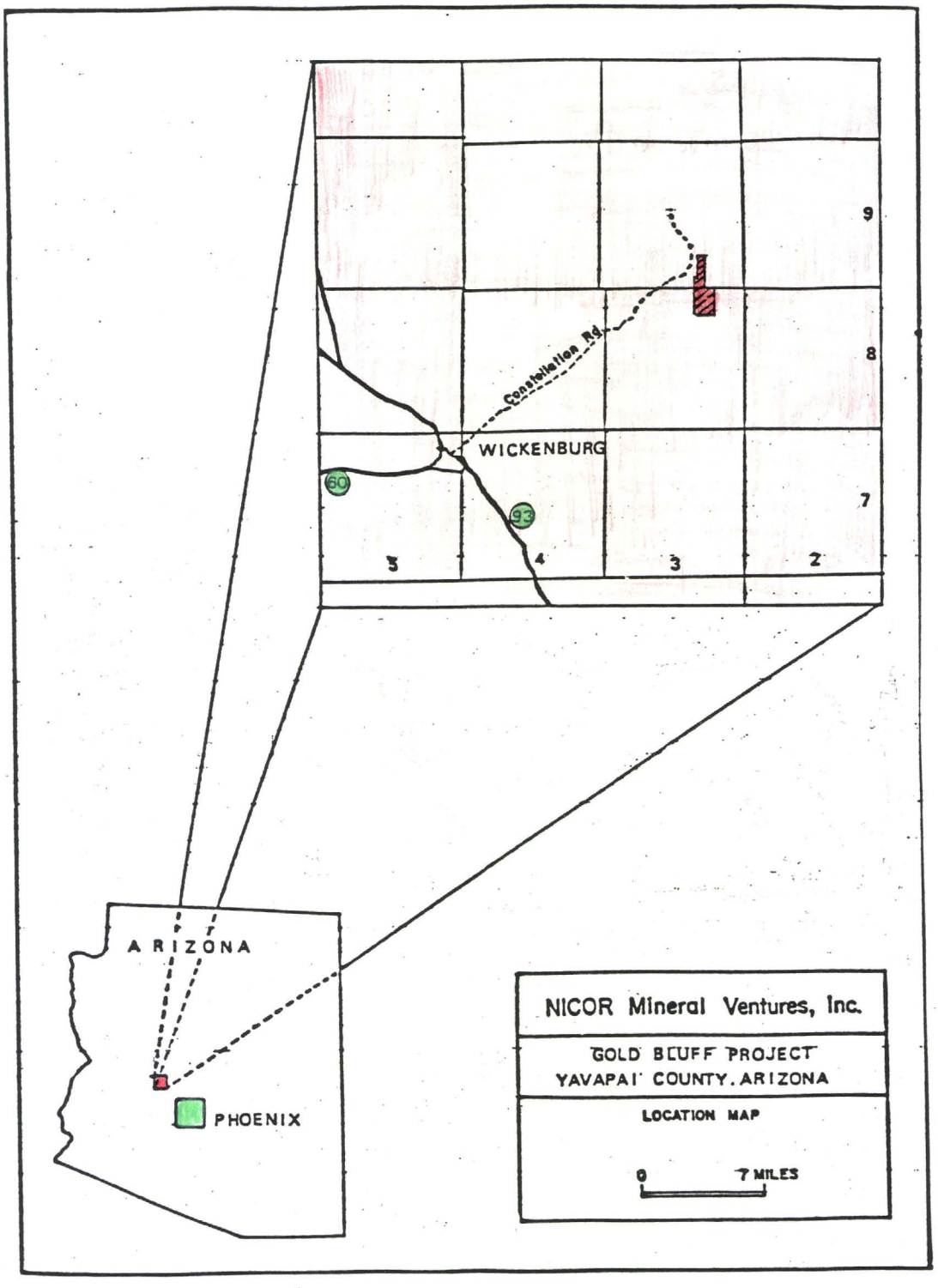


Figure 1. Location Map

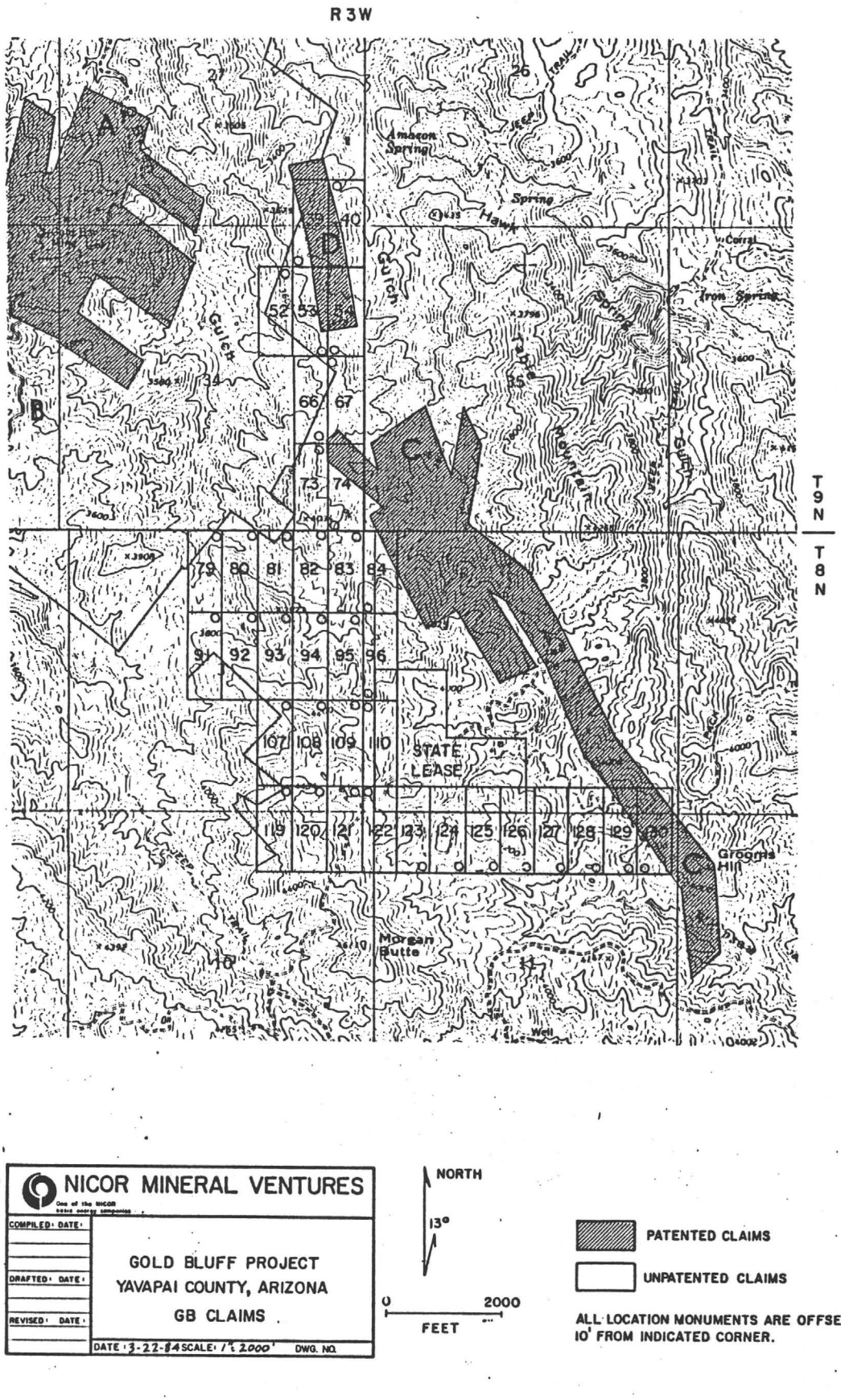

R3W
T9N
T8N
A
B
C
D
Amazon Spring
Spring
Hawk
Gulch
Iron Spring
Corral
Spring
Trail
Mountain
Gulch
STATE LEASE
Grogans Hill
Morgan Butte
Well
NICOR MINERAL VENTURES
One of the NICOR base energy companies
COMPILED: DATE:
DRAFTED: DATE:
REVISED: DATE:
GOLD BLUFF PROJECT
YAVAPAI COUNTY, ARIZONA
GB CLAIMS
DATE: 3-22-84 SCALE: 1" = 2000' DWG. NO.
NORTH
13°
0
2000
FEET
PATENTED CLAIMS
UNPATENTED CLAIMS
ALL LOCATION MONUMENTS ARE OFFSET 10' FROM INDICATED CORNER.

Figure 2

with an average grade of 0.75 opt Au. This ore was extracted from an open cut on the outcrop of one of several breccia zones that occur in the area.

The ore zone at the Gold Bar consists of a quartz-sericite-pyrite breccia pipe that measures 40 by 50 feet in cross section and plunges 30° to the southwest.

In 1907-1908, the Interior Mining and Trust Company is reported to have mined the pipe from the 385 foot level to the glory hole at the surface. During this period, the operators erected a 100 ton per day mill; 1907 production amounted to $33,402 in bullion and concentrates. The concentrates are reported to have averaged 2 opt Au, 3 opt Ag, 49% Fe, 15% Si and 15% S. In 1908, $91,749 worth of gold was produced from the district; most of this production was from the Gold Bar. In 1915, the company was reorganized as the Gold Bar Mining Company, and a shaft was sunk to intersect the pipe on the 700 foot level. Only sporadic production has ensued since 1918, with a brief period of activity during the early 1930's when lessees worked the deposit in a small way. The property was leased by Goldhurst during the 1970's and early 1980's; they reconditioned the 700 foot shaft, dewatered the workings and did limited underground drilling. The property reverted to its owners, the DeVaults of Wickenburg during 1984. A total of 25,000 tons of 0.6 opt gold ore has been produced from the Gold Bar, primarily prior to 1918.

REFERENCES

Trenholme, L.S., 1979, The Gold Bar Prospect, Yavapai, Co., Arizona (Goldhurst Resources Report - unpublished)

Wilson, D.W., et al, 1967, Arizona Lode Gold Mines and Gold Mining, ABM Bull 137 p62-64

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Mo ppm	Sb ppm	As ppm	Sample Description
F341	.02	.24	-	4	-	#5 Pipe: COS
F342	.02	.69	-	6	-	#5 Pipe: COS
F343	.02	.48	-	6	-	#5 Pipe: COS
F344	.02	1.20	-	6	-	#5 Pipe: COS
F465	0.8	1.2	10	<1	<10	R.B. vein: Select vein Qtz
F466	<.01	0.3	30	<1	<10	#5 Pipe: COS
F467	<.01	0.2	15	<1	<10	#5 Pipe: COS
F468	<.01	0.2	10	<1	13	#5 Pipe: COS
F469	<.01	<0.2	10	<1	30	#5 Pipe: COS
F470	<.01	0.2	10	<1	<10	#5 Pipe: COS
F471	<.01	1.6	10	<1	<10	#5 Pipe: COS
F472	<.01	0.2	<10	<1	<10	#5 Pipe: COS
F473	<.01	0.3	15	<1	<10	#5 Pipe: COS
F474	<.01	0.3	<10	<1	10	#5 Pipe: COS

Note: COS = composite outcrop sample
R.B. = Red Bluff
R.dump = Representative dump sample
U.G = Underground

All values in ppm unless otherwise noted.

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
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F324	<.01	.58	-	9	-	#5 Pipe: 5' chip
F325	<.01	.82	-	9	-	#5 Pipe: 5' chip
F326	<.01	.82	-	13	-	#5 Pipe: 7' chip
F327	<.01	.14	-	6	-	#5 Pipe: 5' chip
F328	<.01	.69	-	11	-	#5 Pipe: 17' chip
F329	.02	.27	-	6	-	#5 Pipe: 18' chip
F330	.12	.93	-	6	-	#2 Pipe: COS
F331	.11	.51	-	6	-	#2 Pipe: COS
F332	.21	.55	-	6	-	#2 Pipe: COS
F333	.07	.93	-	4	-	#2 Pipe: COS
F334	.12	2.57	-	5	-	#2 Pipe: Trench below outcrop
F335	.04	.34	-	8	-	#3 Black Bear: adit dump
F336	.04	.21	-	4	-	#3 Pipe: UG R. chip outer adit
F337	.02	.34	-	8	-	#3 Pipe: UG 3' chip
F338	<.01	.27	-	4	-	#3 Pipe: UG 5' chip
F339	.05	.48	-	8	-	#3 Pipe: UG 5' chip
F340	.03	.62	-	11	-	#3 Pipe: UG 4.5' chip

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
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F-301	1.8	2.0	6800	2	60	R.B. vein: R. trench
F-302	0.14	0.8	1650	2	70	R.B. vein: 17' chip vein
F-303	0.05	0.2	430	2	<10	R.B. vein: R. Dump
F-304	19.0	9.60	82	-	-	G.B. claims: select pit
F-305	1.3	1.68	3.5%	-	-	G.B. claims: select pit
F-306	3.3	0.99	5860	-	-	G.B. claims: select pit
F310	6.3	53.2	-	9	-	#1 Glory Hole pipe: 6' chip
F311	24	25.4	-	5	-	#1 Glory Hole pipe: 7' chip
F312	5.0	12.3	-	7	-	#1 Glory Hole pipe: 7' chip
F313	2.6	8.16	-	9	-	#1 Glory Hole pipe: 7-5' chip
F314	.32	5.97	-	10	-	#1 Glory Hole pipe: 6-5' chip
F315	.77	7.13	-	10	-	#1 Glory Hole pipe: Muck pile
F316	.23	3.43	-	5	-	#1 Glory Hole pipe: Muck grab
F317	<.01	.79	-	7	-	#1 Pipe: COS outcrop
F318	.02	1.06	-	12	-	#1 Pipe: 5' chip outcrop
F319	.05	.51	-	5	-	#1 Pipe: 7' chip outcrop

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F-43	0.17	-	-	-	-	#2 Pipe: 75' long outcrop chip in road cut
F-44	N.R.	52.8	-	-	-	#1 Pipe: pilar chip in Glory Hole (6')
F-45	7.6/ 8.46	10.2	-	-	-	#1 Glory Hole: 12' chip
F-46	0.24	-	-	-	-	#1 Glory Hole: 20' chip in cross cut
F-47	1.1	-	-	-	-	#1 Pipe: COS above Glory hole
F-48	0.34	-	-	-	-	#3 Pipe: grab from adit dump
F-49	0.31	-	-	-	-	R.B. vein: 10' chip
F-50	0.48	-	-	-	-	R.B. cross fracture: R. grab
F-51	0.65	-	-	-	-	R.B. vein: 3.7' chip
F-52	3.53/ 3.60	-	-	-	-	R.B. vein: 10' chip
G-86	0.27	-	-	-	-	#3 Pipe: COS
G-87	0.34	-	-	-	-	#3 Pipe: COS
G-88	0.07	-	-	-	-	#3 Pipe: COS
G-89	0.10	-	-	-	-	3'chip qtz vein
G-90	13.1/ 7.81	-	-	-	-	R. grab Blue Moon veins
G-91	0.96	-	-	-	-	R. Dump Prospect
G-92	0.61	-	-	-	-	Unnamed vein: 8' chip
G-93	0.41	15.2	-	-	-	#4 White Blaze vein dump semi select
G-94	0.38	-	-	-	-	#4 Semi Select White Blaze Pipe Qtz veinlets

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
G-95	0.34	-	-	-	-	R. Dump
G-96	1.60	10.3	-	-	-	White Blaze vein same vein S.Grab
G-97	5.86	-	-	-	-	R. Grab: dump
G-98	1.30	-	-	-	-	R.B. vein: R. Dump
G-99	8.596	-	-	-	-	Prospect pit R. grab vein
G-100	0.31	-	-	-	-	#2 Pipe: Select Qtz-pyrite
G-101	0.34	-	-	-	-	R. Dump: #2 shaft
G-102	0.96	-	-	-	-	R. Dump: #1 shaft
G-103	5.34	6.8	-	-	-	Glory hole pilar: #1 pipe
G-104	Tr	-	-	-	-	Red Wonder: Select CuOx
G-105	0.82	-	-	-	-	R.B. vein: R. grab ore pile
F-291	<0.02	<.8	265	<2	<10	G.B. claims: Select hem vein
F-292	7.50	13.0	900	8	50	G.B. claims: R. Dump, 25' vein
F-293	0.05	0.2	620	<2	100	G.B. claims: R. pit in Rhy
F-294	0.54	0.2	1400	2	20	G.B. claims: 11' chip vein
F-295	0.06	0.2	405	<2	20	R.B. vein: Iron Hill; R. trench
F-296	0.28	0.6	1350	<2	50	R.B. vein: Iron Hill; R. trench
F-297	4.6	0.2	230	<2	30	R.B. vein: Iron Hill; R. Dump pit

APPENDIX 1. ASSAY RESULTS

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
X304	2.81	1.9	0.89%	-	-	R.B. vein: 4' chip vein
X305	6.56	2.1	1.65%	-	-	R.B. vein: S grab
X609	3.95	1.6	0.26%	-	11	R.B. vein: 9' chip vein
X610	6.59	3.5	0.51%	-	10	R.B. vein: 10' chip vein
X611	11.0	7.3	3.28%	-	22	R.B. vein: select trench
X612	1.98	1.8	1.33%	-	5	R.B. vein: select trench
X613	<0.10	1.1	0.16%	-	11	R.B. vein: 10' chip vein
X614	1.10	<1.0	0.22%	-	24	R.B. vein: 40' chip vein
X615	<0.1	1.0	0.54%	-	13	R.B. vein: 8' chip
F-8	6.82	3.4	0.1	54	3	#1 Glory Hole: S.G. Qtz
F-9	0.86	2.5	1.2%	62	17	R.B. vein: 8' chip
F-10	2.13	3.3	0.59%	88	112	R.B. vein: 8' chip
F-35	0.34	-	-	-	-	#2 pipe: COS
F-36	0.17	-	-	-	-	#5 pipe: COS
F-37	0.07	-	-	-	-	#5 pipe: grab from pit
F-38	0.10	-	-	-	-	#4 White Blaze pipe: COS
F-39	0.10	-	-	-	-	#5 Pipe: R. grab from pit
F-40	0.17	-	-	-	-	#5 Pipe: Select outcrop chip
F-41	Tr	-	-	-	-	#5 Pipe: COS
F-42	0.07	-	-	-	-	#5 Pipe: sidewall chip 50' along adit

Red Bluff Vein System - Workings on the Red Bluff vein system probably date from the late 1880's, but no recorded production figures are available for the area. The north-south trending Red Bluff vein system is well over two miles long and generally consists of two highly oxidized veins separated by 200 to 400 feet. The area between and peripheral to these veins is cut by numerous subparallel and cross veins, and the whole zone is variably sheared and pervasively mineralized with hematite. The property was prospected for copper during the late 1920's by the Milevore Copper Company. During the period of activity, a 500 foot exploration shaft was sunk and considerable diamond drilling was done on one of several large vein segments that outcrop near the head of Amazon Gulch. These workings were alternately known as the Groom or the Milevore Mine, and reportedly shipped several hundred tons of high grade copper-gold ore. During 1933 and 1934 a small amount of siliceous gold ore was produced from one of the shallower workings in the area. A 30 ton mill was run by R.L. Beals and Associates during this period to recover the fine grained gold from their siliceous shows. Very little subsequent work appears to have been done until the late 1970's and early 1980's when the Red Bluff Mining Company operated a small custom mill on the property. This operation produced a small amount of gold from open cuts on several of the cross veins, but no reliable grade or tonnage figures are available. The area is currently inactive.

NICOR personnel originally sampled the area in July of 1981. The area between the Gold Bar and Groom Mines was staked during March of 1982. Detailed surface and underground mapping of the claimblock and surrounding areas was undertaken by K.M. Emanuel during January and February of 1983. The Gold Bluff claimblock has been under option to Permian Resources since January 18, 1985.

PROPERTY DESCRIPTION

Figure 2 shows the current status of the Gold Bluff (GB) claims. The area was originally staked during March, 1982 as a contiguous group of 130 lode claims that covered much of sections 27 and 34. These claims were staked after BLM records indicated that the unpatented ground surrounding the Gold Bar patents had lapsed. Because the lapse in assessment was finally shown to be due to a misfiling error at the BLM, many of the GB claims had to be dropped. The current claimblock consists of 37 unpatented lode claims and 120 acres of land leased from the state.

NICOR was approached by Permian Resources during March of 1984 with a proposal to joint venture the GB claims. A lease/purchase agreement was signed on January 19, 1985, which requires Permian to make biannual advance net smelter royal payments to NICOR. The payments apply to a 3% NSR on all production from NICOR ground. When total payments reach $400,000, NICOR will quitclaim all its interest in the GB claims to Permian.

The remainder of the unpatented ground in sections 2 and 34 was not available for minerals location at the time of acquisition. The group of patents covering the Red Bluff vein system are controlled by numerous individuals and have highly fragmented ownership. The extensive group of 15 patented and 90 unpatented claims ringing the Gold Bar mine are owned by Mr. and Mrs. Jack DeVault of Wickenburg, Arizona. These claims were unsuccessfully negotiated for during 1982, at which time they were under lease to a Mr. Steven Ivanov of Goldhurst Resources, Inc. Mr. Ivanov gave his permission to freely map and sample the property during our negotiations, but his demands were unrealistic and negotiations were suspended. The property has since reverted to the DeVaults, and is currently rumored to be under option to Sunshine Mining. Table 1 summarizes the current status of the important claims peripheral to the GB group which were evaluated during this study.

TABLE 1. SUMMARY OF ADJACENT PROPERTIES
(Keyed to Figure 2)

The Gold Bar property consists of the following:

A) A central group of fifteen (15) patented claims, (USMS No. 40-60-A)

Owner: Jack & Dorothy DeVault, Wickenburg, Arizona

Charm	Buttons	Cable
Fob	Crown	Robert
The Home	Black Bear	Red Wonder
White Blaze	Gilbreth	Little Jim
Homestake	Bennet	Little John

A single patented Millsite Claim the "Brunton" at the extreme north end of the group (USMS No. 40-60-A)

Table 1 (continued)

B) Ninety (90) located claims:

Owner: Jack & Dorothy DeVault, Wickenburg,Arizona

Gold Bar 1-72 inclusive

Little Bear	Little Jim No. 3	Green Monster
Charm No. 2	Little John No. 2	Green Monster No. 2
White Blaze No. 2	Little John No. 3	Crown No. 2
Gilbreth No. 2	Robert No. 2	Buttons No. 2
Bennet No. 2	Red Wonder No. 2	The Home No. 1
Little Jim No. 2	Red Wonder No. 3	Home No. 2

The Red Bluff Vein Patents consist of the following:

C) A group of eighteen (18) patented claims under various ownership:

(USMS No. 1385)

Owner: Irene Woods, Arizona Amazon Mining Co., c/o Floyd N. Norris, 424 S. Irving Blvd., L.A.,CA 90020

Amazon	South Amazon	Congo
Gypsy	Iron Hill	Cola

(USMS No. 1553)

Owner: W.M. Webber, Commercial Merchants Bank, 301 S. Adams, Peoria, ILL

Lonne Star	Homestake	Homestake 2&3
Toltec	Bellaira	Flying Dutchman

(USMS No. 1331)

Owner: Highly Fragmented

Little Dandy	Keystone	Curley

D) USMS No. 1384

Owner: (?) Currently leased to Permian Resources

Copper Prince	Texas Chief

GEOLOGY

GENERAL

The general area of the Gold Bluff prospect is dominantly underlain by 1.6 - 1.8 by old Yavapai schist which has been intruded by the 1.4 by old Bradshaw granite. These units have been subjected to at least one period of penetrative deformation. The basement complex has been intruded by at least four sets of younger dikes (Plate I). The most recent period of intrusive activity consists of a small granitic stock that is partially rimmed by intrusive andesite. This stock is variably altered and is rimmed by a zone of fluidized breccia that has been mineralized by quartz, sericite and pyrite. A number of other smaller brecciated zones occurs immediately to the southwest of the stock, but are not directly associated with an intrusive.

A very prominent system of quartz porphyry rhyolite dikes occurs throughout the southeastern half of the property, but terminates in a sill complex that dips below the area of pipe mineralization (Plate I). A large swarm of cupriferous veins crosscuts the area from southeast to northwest; these veins parallel the rhyolite dike swarm and die out as the area of pipe development and granitic intrusion is approached. The apparent radial aspect of the rhyolite dikes and vein swarms relative to the intrusive suggests a possible genetic relationship, but this cannot be

demonstrated without further work on the ages and geochemistry of the various intrusive rocks.

PRECAMBRIAN

Quartzofeldspathic Schists and Gneiss: Most of the area consists of quartz-hornblende-biotite schist (p€s) and quartz-feldspar-biotite schists and gneisses (p€gs). These rocks were not differentiated in the field, except where thick continuous horizons of the amphibolitic schist were present (see next section). The statigraphy is quite complex, but generally consists of interfingering metasedimentary and metavolcanic rocks. The section generally contains 10 to 40% amphibolite schist, is strongly foliated and typically strikes northeast with shallow to moderate dips to the north and west. Large scale southeast plunging folds appear to be present to the southwest of the area mapped, but differentiation of such structures within the prospect area would have required a much more detailed structural analysis than was possible in this study.

Amphibolite Schists: These rocks are macroscopically identical to the amphibolites within the Yavapai schist, but are large enough to break out as separate units (p€as). The rock is composed of highly foliated quartz-hornblende-biotite-chlorite schist. Outcrops generally crosscut the trend of earlier lithologies and are elongated towards the northwest. These rocks

have the same metamorphic fabric as the enclosing rocks and may represent highly deformed dikes and sills.

Tourmaline Granite and Pegmatites: The schists and gneisses of the basement complex are widely intruded by northeast to northwest trending dikes and pods of medium- to coarse-grained leucogranite (p€pg). Most of the rock is composed of hypidrimorphic aggregates of alkali feldspar and quartz with up to 10% coarse black tourmaline. The rock is locally very coarse-grained to pegmatitic in texture. Very little foliation is developed in this unit, but it locally appears to be truncated by foliated amphibolite dikes (north center sec 3); in the same area leucogranites also appear to cut these same amphibolites, suggesting a close temporal relationship of the two rock types. The lack of foliation in the leucogranites may be due to their coarse grained, massive character. Most exposures of these dikes are highly fractured.

Amphibolite Dikes: A number of thick northerly trending amphibolite dikes (p€a) crosscuts the earlier schists and granites. These bodies are steeply dipping, foliated parallel to their margins and contain relict igneous textures within their interior portions. Many of these dikes can be traced for distances of up to 3 miles in the area northeast of the Red Bluff vein system. The dikes are 100 to 600 feet wide and are composed of chloritically altered hornblende and biotite in a matrix of hard

plagioclase. Epidote is locally prominent in these rocks, as is limonite and hematite after pyrite. The margins of these dikes locally contain sparse copper oxides. Amphibolite dikes of this type appear to have been involved in large scale folding to the southwest of the study area.

TERTIARY(?)

Porphyritic to Aplitic Granite: A single exposure of unfoliated intrusive granite (Grp) occurs at the north end of the area mapped (center of sec. 27). This rock is pink in color, aplitic to locally coarse-grained in texture and locally contains foundered blocks of older metamorphic rocks. The rock locally appears slightly foliated near its margins, but is generally massive and medium grained in texture. It is composed of 30 to 50% quartz, 20 to 50% pink K-feldspar and 10 to 30% plagioclase, which is generally altered to sericite or clays. The rock appears sheeted near its northern boundary and dips back to the south at approximately 60°. The granite locally contains abundant quartz lined fractures and cavities, especially near its peripheral contacts. Pegmatitic and aplitic varieties of the granite locally occur as dikes within the central part of the intrusive. The granite is sericitically altered near its periphery, where it has also been intruded by andesite dikes (see below). Ringing most of the intrusive is a zone of sericitic, pyritic, and silicic alteration (pipe #5) that shows evidence of fluidization (see section on mineralization).

Andesite Dikes and Intrusive Bodies: Andesite dikes and intrusive masses (Ta) are locally present within the area mapped, but are not abundant. These rocks are light gray to greenish brown in color, and are aphanitic to porphyritic in texture. Much of the matrix is a very fine grained mixture of felted plagioclase laths and chlorite. The phenocrysts consist of 1 to 2% xenomorphic quartz, up to 2% K-feldspar, and from 0 to 20% tabular hornblende; the latter are up to 1 cm across. Andesite to hornblende diorite intrusive masses and dikes occur within and along the margins of the porphyritic granite described above. These rocks are often highly sericitized and constitite the most extensive exposures of andesite mapped in the study area. Few crosscutting relationships have been observed between andesite and younger rocks, but a single exposure near the southeast corner of section 3 suggests that the andesites may be older than the rhyolitic dikes discussed in the following section.

Quartz Porphyry Rhyolite Dikes and Breccias: The most prominent post-Precambrian litholgy exposed on the Gold Bluff property is a series of northwest trending dikes and a sill composed of porphyritic quartz-eye rhyolite (Tr). These intrusives form a zone of anostomosing to subparallel diking that is over a half mile wide and nearly three miles long. Most of the dikes are nearly vertical and hold up prominent ridges. One major dike in

the southwest part of section 34 becomes progressively shallower in dip towards the northwest and eventually terminates in a sill that dips at 25 to 37 northwest under the area of breccia pipe mineralization. Lithologically, the rhyolites can be described as a very fine grained to locally flow banded gray felsite with 10 to 30% abundant glassy quartz eyes (1 to 5 mm). One to five percent irregular argillized feldspar laths (up to 4 mm) are also present. The margins of individual dikes are generally highly flow foliated and show variable amounts of argillic alteration. The surronding rocks are also argillized in some areas (S.C 1/4 corner; sec 34), for distances that are comparable to the dike thickness. Most dikes are 20 to 200 feet wide. In some areas, multiple rhyolite intrusions have resulted in small exposures of rhyolite breccia (Trb; west half sec. 2).

STRUCTURE

Early structural evolution of the area was dominated by the deformation of the Yavapai series sediments and volcanics and the intrusion of the Bradshaw granite. These events imparted a general northeast trending foliation to the Yavapai schists. A later(?) series of southeast plunging folds may also be present, but has not been well documented. Diabase and leucogranite dikes trend variably across the earlier foliated rocks and suggest a complex structural and magmatic evolution within the region. More recent brittle deformation within the area follows these earlier trends. Two persistent systems of faults and fractures characterize the local structure: one group trends about N70 E, the other system trends approximately N30 W. Most of the mineralized fissures in the area belong to the group that strikes N30 W.

An orientation study of the visible structural elements of the Gold Bar breccia pipe was undertaken to determine their relationship to the known plunge of that feature. Sheeting structures were found to define a roughly conical surface about the pipe's axis of plunge. Extrapolation of this data to the other breccia pipes suggests that they all plunge at 20 to 40 to the southwest (Plates II and III).

MINERALIZATION AND ALTERATION

Two types of mineralization have been recognized within the area: 1) Gold-pyrite breccia pipes - mineralization of this type occurs near the Gold Bar Mine, but was not recognized elsewhere in the area mapped. 2) Silicified veins with hematite and copper oxides that trend generally N30° W - vein structures of this type occur in profusion along the Red Bluff trend and to a lesser extent within the GB claims. These vein swarms trend towards a large circular breccia pipe exposed in O'Brien Wash (Plate I), but die out a few thousand feet to the southeast. The Gold Bluff claims contain two small annular structures defined by rhyolite diking and minor veining (east half sec 3). The GB claims were not found to contain recognizable breccia pipe development or widespread vein mineralization as in the Red Bluff system to the east.

The Gold Bar mine exploited a mineralized breccia pipe that occurs within a closely spaced group of five mineralogically similar, but somewhat larger structures. The largest of the group forms an annular zone over 1000 feet across that rims the granitic intrusive (Grp) exposed in O'Brien Wash (Plate III).

The ore zone at the Gold Bar is 40 by 60 feet in section and is relatively uniform in size to the 540 foot level. The deposit has produced about 25,000 tons of 0.6 opt gold ore with

additional tonnage reportedly remaining above a faulted lower extension. Underground drilling by Goldhurst reports several 10 foot intercepts of 0.11 to 0.66 opt gold and a number of low grade shows in the supposed lower extension of the pipe. They also reported chalcopyrite mineralization in shears at depth. The pipe-like zone is mineralized by quartz-pyrite veining and wallrock replacements. The outer margin of the pipe is pervasively silicified and its interior contains rounded blocks of sericitically altered wallrocks in a fine grained matrix of quartz, sericite and pyrite.

The mineralization in the Red Bluff system is within two major (approximately N30° W bearing) fissures that are 200 to 400 feet apart (Plate I). Locally abundant smaller subparallel veins and crossfractures (approximately N70o E bearing) occur between and adjacent to the larger structures. The two principal veins are between two and forty feet wide (average eight feet) with lengths of 2000 and 3000 feet. At least one major crossfracture attains a thickness of eight feet. The mineralization occurs as highly oxidized veins and disseminations of quartz and hematite, with locally abundant (up to 3%) oxidized copper minerals (mal. - chrys. - azur.). Very few sulfides were noted during field examinations. Numerous vein segments create an en-echelon vein swarm that can be traced more or less continuously for three miles.

GEOCHEMISTRY

Sampling within the glory hole of the productive Gold Bar #1 pipe averaged 0.195 opt gold from the walls and pilars of the mined out area (Appendix 1, Plate II). The outcrop above the glory hole was also mildly anomalous (0.28ppm gold), which compares well with the 0.24 ppm seen in a crosscut from the main glory hole (F46, Plate IV). The surface exposures and accessible underground workings of each of the other mineralized breccias were also found to be locally anomalous:

Samples from the outcrop of pipe #2, which has no workings, averaged 0.16ppm (Appendix 1).

Surface samples from the #3 pipe averaged 0.26ppm gold, but under ground sampling averaged only 0.03ppm Au. However, most of the workings sampled a crosscut to the main mineralized area (Plate IV). Surface sampling on the #4 pipe (also called the White Blaze) showed only 0.1ppm Au, with slightly better values in cross-cutting strucures (0.4ppm Au, Appendix 1).

The large annular structure of the #5 pipe displayed weakly anomalous Au and Mo. Surface samples averaged 0.025ppm gold with Mo values up to 30ppm (Appendix 1). Underground sampling in the #5 adit (Plate IV) averaged barely 0.01ppm Au.

Although most of the pipe exposures show surface anomalies comparable to that above the Gold Bar mine, the only structure with the potential for a NICOR sized target (pipe #5) displays the weakest gold values. Given the size of the #5 pipe, however, the downplunge projection might still represent a viable target (1-2MMT @ 0.2+ opt Au). Should the property become available under reasonable terms (currently optioned by Sunshine), a closer look at the area of pipe clusters may be warranted. An IP and resistivity survey over the #5 pipe could help to pinpoint any areas of high sulfide content at depth.

Most of the surface sampling done on the Red Bluff veins revealed anomalous, but overall subeconomic, gold mineralization. The average of twenty four representative chip and dump samples is 0.043 opt gold with 0.7% copper. The southwestern most part of section 35 did show some potential for precious metals mineralization. A nineteen foot chip across a zone of veining and altered granite assayed 0.155 opt gold (X-609, X-610). A more diffuse 40 foot zone assayed 0.03 opt gold (X-614). These

samples are on a vein segment that is 1000 feet long with an average width of twenty feet. Exposures between the two sampling points are very poor, however, and continuity of the zone could not be demonstrated without trenching or drilling. Although dissemination of gold values into wallrock was noted at various localities along the vein, cross-fracturing and veining do not appear to be dense enough for development of an open pit sized target suitable for NICOR.

COSTS

The costs incurred to date by NICOR (and DeKalb) on the Gold Bluff property are as follows:

65 mandays @ $275/day	-	$17,875
94 claims @ $81.13/claim	-	$ 7,626
land takeoff and negotiations	-	$13,370
111 samples @ $20/sample	-	$ 2,220
Total		$41,091

REFERENCES

Trenholme, L.S., 1979, The Gold Bar Prospect, Yavapai, Co., Arizona (Goldhurst Resources Report - unpublished)

Wilson, D.W., et al, 1967, Arizona Lode Gold Mines and Gold Mining, ABM Bull 137 p62-64

APPENDIX 1. ASSAY RESULTS

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
X304	2.81	1.9	0.89%	-	-	R.B. vein: 4' chip vein
X305	6.56	2.1	1.65%	-	-	R.B. vein: S grab
X609	3.95	1.6	0.26%	-	11	R.B. vein: 9' chip vein
X610	6.59	3.5	0.51%	-	10	R.B. vein: 10' chip vein
X611	11.0	7.3	3.28%	-	22	R.B. vein: select trench
X612	1.98	1.8	1.33%	-	5	R.B. vein: select trench
X613	<0.10	1.1	0.16%	-	11	R.B. vein: 10' chip vein
X614	1.10	<1.0	0.22%	-	24	R.B. vein: 40' chip vein
X615	<0.1	1.0	0.54%	-	13	R.B. vein: 8' chip
F-8	6.82	3.4	0.1	54	3	#1 Glory Hole: S.G. Qtz
F-9	0.86	2.5	1.2%	62	17	R.B. vein: 8' chip
F-10	2.13	3.3	0.59%	88	112	R.B. vein: 8' chip
F-35	0.34	-	-	-	-	#2 pipe: COS
F-36	0.17	-	-	-	-	#5 pipe: COS
F-37	0.07	-	-	-	-	#5 pipe: grab from pit
F-38	0.10	-	-	-	-	#4 White Blaze pipe: COS
F-39	0.10	-	-	-	-	#5 Pipe: R. grab from pit
F-40	0.17	-	-	-	-	#5 Pipe: Select outcrop chip
F-41	Tr	-	-	-	-	#5 Pipe: COS
F-42	0.07	-	-	-	-	#5 Pipe: sidewall chip 50' along adit

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F-43	0.17	-	-	-	-	#2 Pipe: 75' long outcrop chip in road cut
F-44	N.R.	52.8	-	-	-	#1 Pipe: pilar chip in Glory Hole (6')
F-45	7.6/ 8.46	10.2	-	-	-	#1 Glory Hole: 12' chip
F-46	0.24	-	-	-	-	#1 Glory Hole: 20' chip in cross cut
F-47	1.1	-	-	-	-	#1 Pipe: COS above Glory hole
F-48	0.34	-	-	-	-	#3 Pipe: grab from adit dump
F-49	0.31	-	-	-	-	R.B. vein: 10' chip
F-50	0.48	-	-	-	-	R.B. cross fracture: R. grab
F-51	0.65	-	-	-	-	R.B. vein: 3.7' chip
F-52	3.53/ 3.60	-	-	-	-	R.B. vein: 10' chip
G-86	0.27	-	-	-	-	#3 Pipe: COS
G-87	0.34	-	-	-	-	#3 Pipe: COS
G-88	0.07	-	-	-	-	#3 Pipe: COS
G-89	0.10	-	-	-	-	3'chip qtz vein
G-90	13.1/ 7.81	-	-	-	-	R. grab Blue Moon veins
G-91	0.96	-	-	-	-	R. Dump Prospect
G-92	0.61	-	-	-	-	Unnamed vein: 8' chip
G-93	0.41	15.2	-	-	-	#4 White Blaze vein dump semi select
G-94	0.38	-	-	-	-	#4 Semi Select White Blaze Pipe Qtz veinlets

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
G-95	0.34	-	-	-	-	R. Dump
G-96	1.60	10.3	-	-	-	White Blaze vein same vein S.Grab
G-97	5.86	-	-	-	-	R. Grab: dump
G-98	1.30	-	-	-	-	R.B. vein: R. Dump
G-99	8.596	-	-	-	-	Prospect pit R. grab vein
G-100	0.31	-	-	-	-	#2 Pipe: Select Qtz-pyrite
G-101	0.34	-	-	-	-	R. Dump: #2 shaft
G-102	0.96	-	-	-	-	R. Dump: #1 shaft
G-103	5.34	6.8	-	-	-	Glory hole pilar: #1 pipe
G-104	Tr	-	-	-	-	Red Wonder: Select CuOx
G-105	0.82	-	-	-	-	R.B. vein: R. grab ore pile
F-291	<0.02	<.8	265	<2	<10	G.B. claims: Select hem vein
F-292	7.50	13.0	900	8	50	G.B. claims: R. Dump, 25' vein
F-293	0.05	0.2	620	<2	100	G.B. claims: R. pit in Rhy
F-294	0.54	0.2	1400	2	20	G.B. claims: 11' chip vein
F-295	0.06	0.2	405	<2	20	R.B. vein: Iron Hill; R. trench
F-296	0.28	0.6	1350	<2	50	R.B. vein: Iron Hill; R. trench
F-297	4.6	0.2	230	<2	30	R.B. vein: Iron Hill; R. Dump pit

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F-298	1.6	3.8	10%	2	10	Altered area; select float
F-299	0.29	0.4	630	<2	30	Congo area: 21' chip vein
F-300	0.15	1.0	5.1%	2	40	R.B. vein: R. pit
F-301	1.8	2.0	6800	2	60	R.B. vein: R. trench
F-302	0.14	0.8	1650	2	70	R.B. vein: 17' chip vein
F-303	0.05	0.2	430	2	<10	R.B. vein: R. Dump
F-304	19.0	9.60	82	-	-	G.B. claims: select pit
F-305	1.3	1.68	3.5%	-	-	G.B. claims: select pit
F-306	3.3	0.99	5860	-	-	G.B. claims: select pit
F310	6.3	53.2	-	9	-	#1 Glory Hole pipe: 6' chip
F311	24	25.4	-	5	-	#1 Glory Hole pipe: 7' chip
F312	5.0	12.3	-	7	-	#1 Glory Hole pipe: 7' chip
F313	2.6	8.16	-	9	-	#1 Glory Hole pipe: 7-5' chip
F314	.32	5.97	-	10	-	#1 Glory Hole pipe: 6-5' chip
F315	.77	7.13	-	10	-	#1 Glory Hole pipe: Muck pile
F316	.23	3.43	-	5	-	#1 Glory Hole pipe: Muck grab
F317	<.01	.79	-	7	-	#1 Pipe: COS outcrop
F318	.02	1.06	-	12	-	#1 Pipe: 5' chip outcrop
F319	.05	.51	-	5	-	#1 Pipe: 7' chip outcrop

Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Cu ppm	Sb ppm	As ppm	Sample Description
F320	.12	.45	-	5	-	#1 Pipe: 5' chip outcrop
F321	.37	.55	-	3	-	#1 Pipe: COS
F322	<.01	.34	-	5	-	#5 Pipe: 5' chip
F323	<.01	.58	-	8	-	#5 Pipe: 5' chip
F324	<.01	.58	-	9	-	#5 Pipe: 5' chip
F325	<.01	.82	-	9	-	#5 Pipe: 5' chip
F326	<.01	.82	-	13	-	#5 Pipe: 7' chip
F327	<.01	.14	-	6	-	#5 Pipe: 5' chip
F328	<.01	.69	-	11	-	#5 Pipe: 17' chip
F329	.02	.27	-	6	-	#5 Pipe: 18' chip
F330	.12	.93	-	6	-	#2 Pipe: COS
F331	.11	.51	-	6	-	#2 Pipe: COS
F332	.21	.55	-	6	-	#2 Pipe: COS
F333	.07	.93	-	4	-	#2 Pipe: COS
F334	.12	2.57	-	5	-	#2 Pipe: Trench below outcrop
F335	.04	.34	-	8	-	#3 Black Bear: adit dump
F336	.04	.21	-	4	-	#3 Pipe: UG R. chip outer adit
F337	.02	.34	-	8	-	#3 Pipe: UG 3' chip
F338	<.01	.27	-	4	-	#3 Pipe: UG 5' chip
F339	.05	.48	-	8	-	#3 Pipe: UG 5' chip
F340	.03	.62	-	11	-	#3 Pipe: UG 4.5' chip

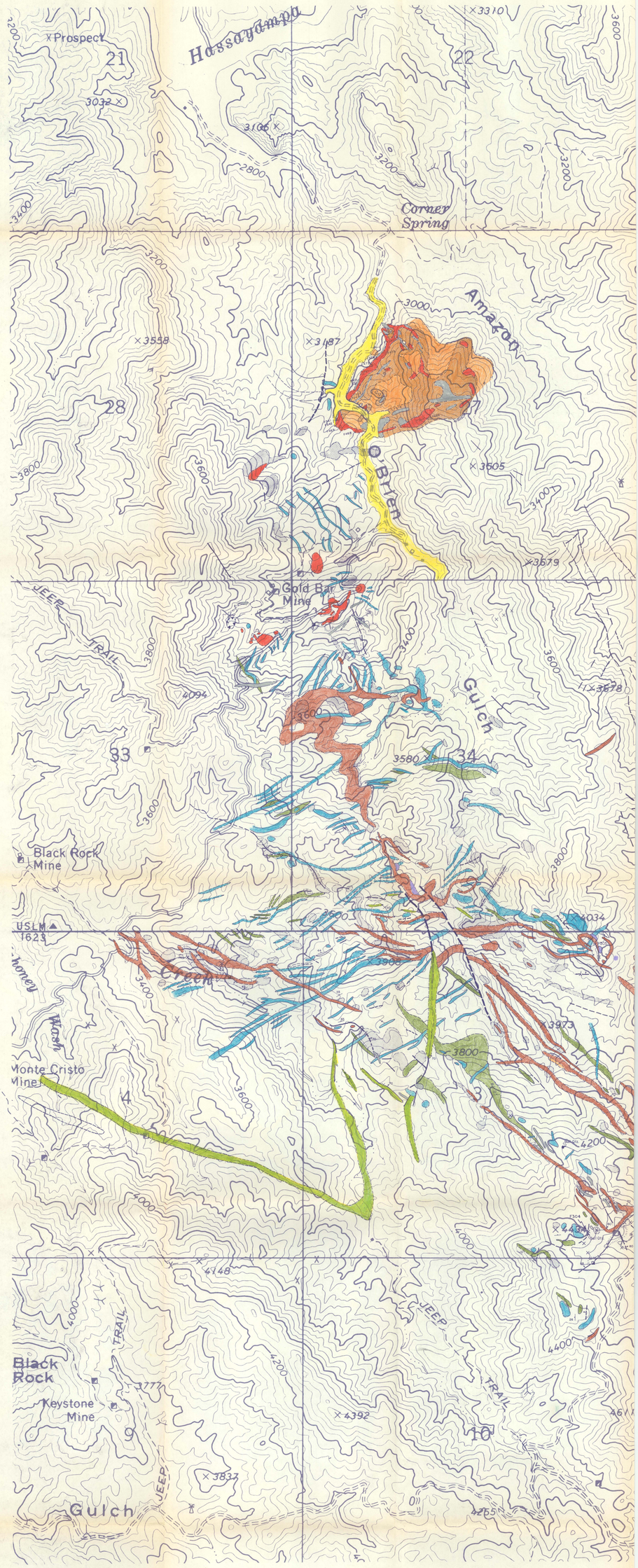
Appendix 1 (continued)

Sample	Au ppm	Ag ppm	Mo ppm	Sb ppm	As ppm	Sample Description
F341	.02	.24	-	4	-	#5 Pipe: COS
F342	.02	.69	-	6	-	#5 Pipe: COS
F343	.02	.48	-	6	-	#5 Pipe: COS
F344	.02	1.20	-	6	-	#5 Pipe: COS
F465	0.8	1.2	10	<1	<10	R.B. vein: Select vein Qtz
F466	<.01	0.3	30	<1	<10	#5 Pipe: COS
F467	<.01	0.2	15	<1	<10	#5 Pipe: COS
F468	<.01	0.2	10	<1	13	#5 Pipe: COS
F469	<.01	<0.2	10	<1	30	#5 Pipe: COS
F470	<.01	0.2	10	<1	<10	#5 Pipe: COS
F471	<.01	1.6	10	<1	<10	#5 Pipe: COS
F472	<.01	0.2	<10	<1	<10	#5 Pipe: COS
F473	<.01	0.3	15	<1	<10	#5 Pipe: COS
F474	<.01	0.3	<10	<1	10	#5 Pipe: COS

Note: COS = composite outcrop sample
R.B. = Red Bluff
R.dump = Representative dump sample
U.G = Underground

All values in ppm unless otherwise noted.

PLATE I



NICOR Mineral Ventures, Inc.

GOLD BLUFF PROJECT
GEOLOGIC MAP

SCALE 1"=500' | DRAWN SELKE | DATE

QUATERNARY
Qa ALLUVIUM

TERTIARY
Tr QUARTZ PORPHYRY RHYOLITE DIKES
Trb QUARTZ PORPHYRY RHYOLITE BRECCIA
TA ANDESITE DIKES
Grp PORPHYRITIC TO APLITIC GRANITE
● - pipe bodies

PRECAMBRIAN
PCA AMPHIBOLITE DIKES
PCgt TOURMALINE GRANITE / PEGMATITES
PCam AMPHIBOLITIC SCHIST
PCgz QUARTZOFELDSPATHIC SCHISTS AND GNEISSES

FeO_x STAINED AREAS
QUARTZ VEINS
FAULTS

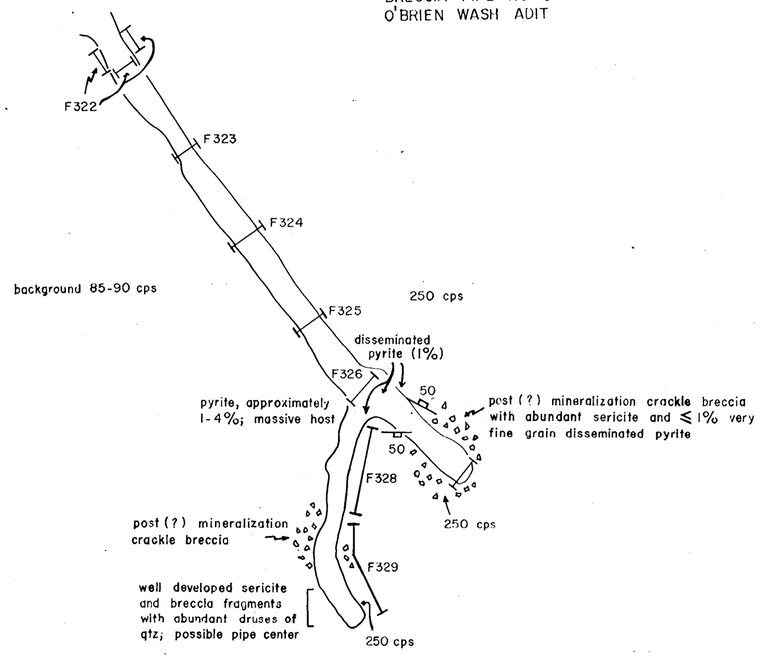
NORTH

0 500
FEET
SCALE 1"= 500'

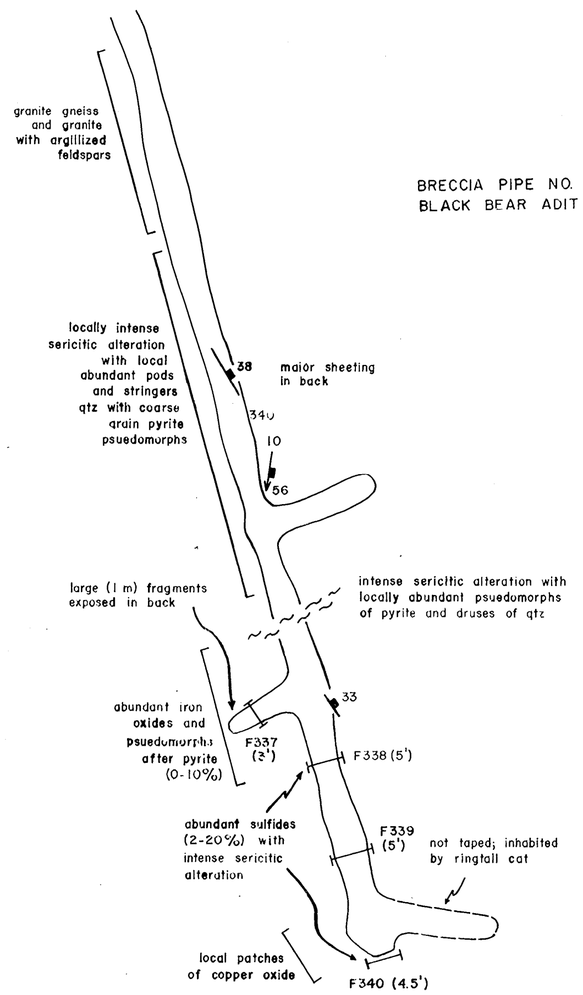

23
24
26
25
35
36
1
11
12
3200
3400
3600
3800
4000
4200
×3710
×3270
×3667
×3703
×3955
×3914
×4197
×4265
×4095
×4350
×4141
×4079
×4008
×4002
4454
4533
3913
3694
Crown Point
Spring
Roberts Camp
Amazon Spring
Hawk Spring
Table Mountain
Iron Spring
Corral
Swallow Gulch
Grooms Hill
Morgan Butte
Abe Lincoln Mine
Well
JEEP TRAIL
TRAIL
JEEP
PACK TRAIL
Whipsaw Creek

PLATES II, IIA, III, IIIA, IV

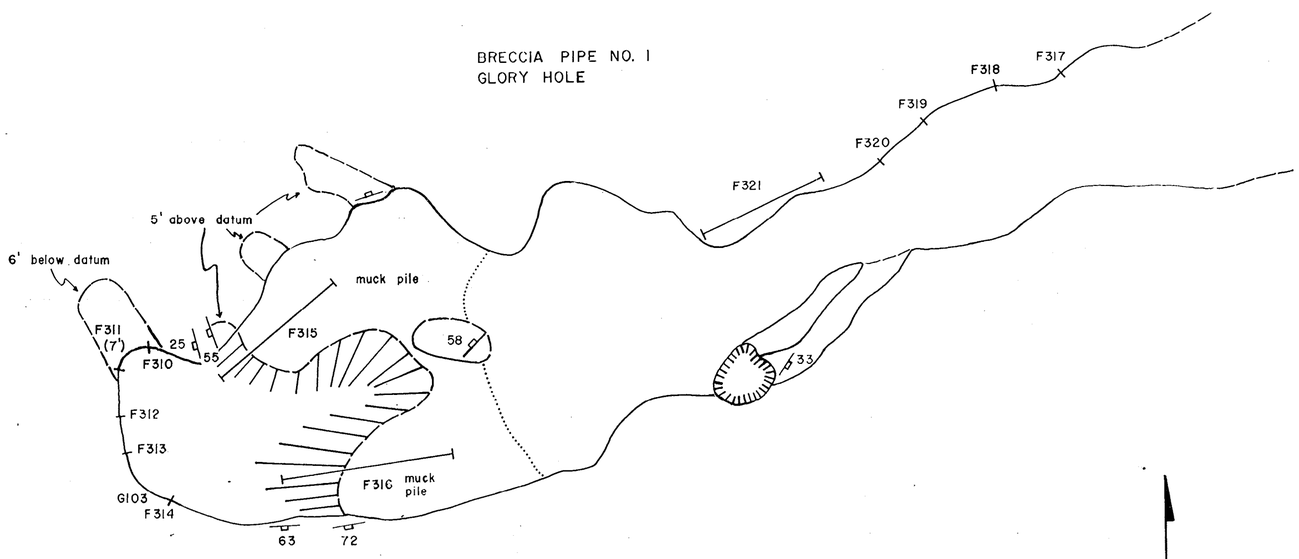
BRECCIA PIPE NO. 5
O'BRIEN WASH ADIT



BRECCIA PIPE NO. 3
BLACK BEAR ADIT



BRECCIA PIPE NO. 1
GLORY HOLE



NICOR MINERAL VENTURES
One of the NICOR basic energy companies

COMPILED: DATE:	
DRAFTED: DATE: BEM 1/20/85	PLATE IV UNDERGROUND WORKINGS OF THE GOLD BLUFF PROJECT
REVISED: DATE:	
DATE:	SCALE: 1" = 250' DWG. NO.

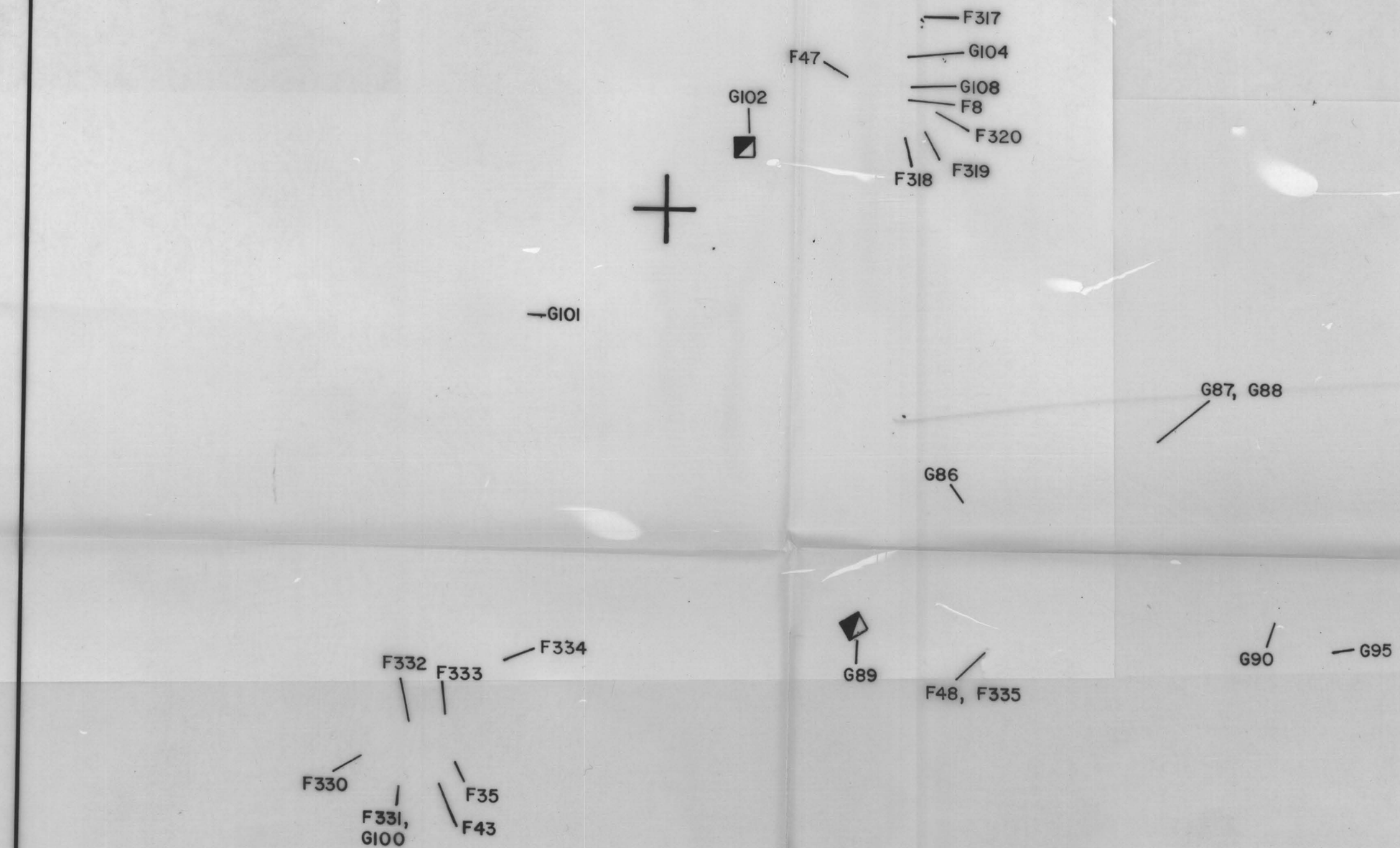


PLATE IIA - GOLD BLUFF PROJECT, PIPES NO. 1,
2 & 3 - SAMPLE OVERLAY

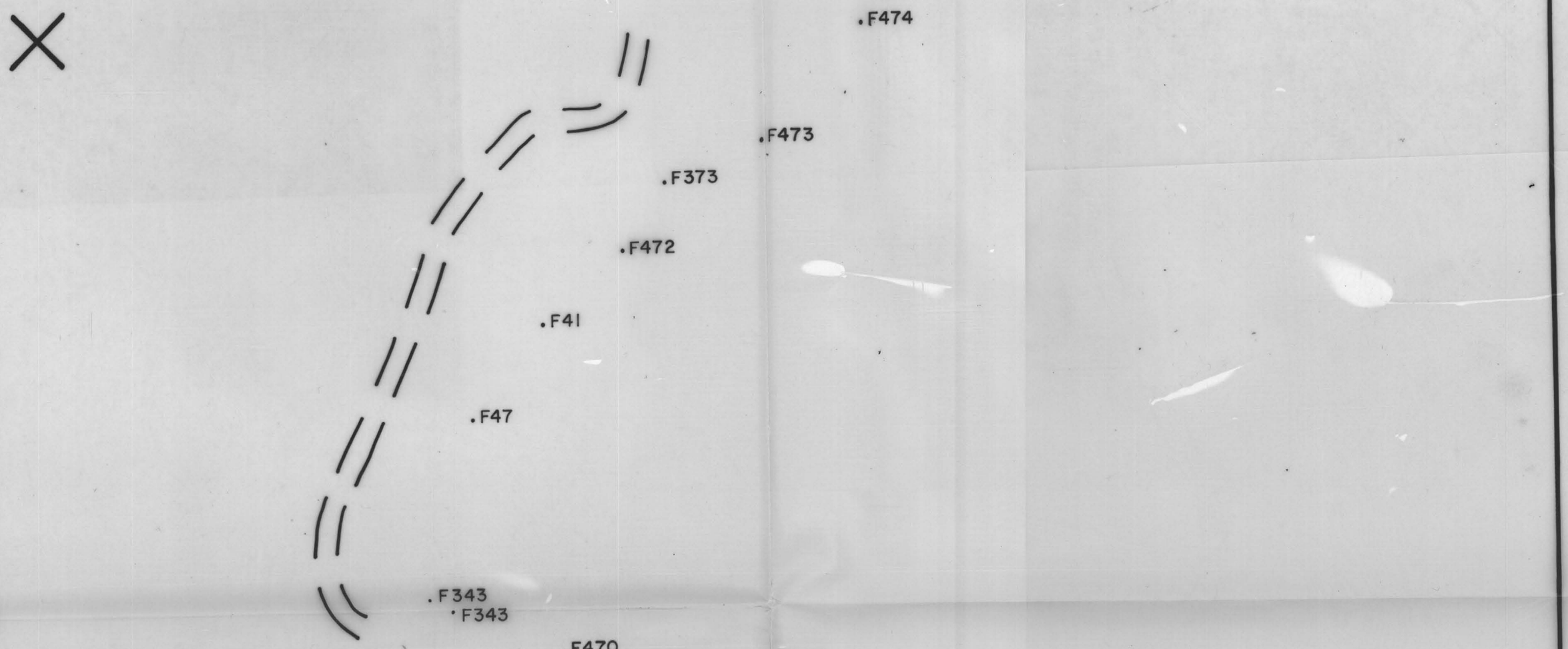


PLATE IIIA - GOLD BLUFF PROJECT, PIPE NO. 5 -
SAMPLE OVERLAY

PIPE NO. 1

PIPE NO. 2

PIPE NO. 3

Gold Bar Mine

3400

3600

NICOR Mineral Ventures, Inc.

PLATE II
GOLD BLUFF PROJECT,
PIPES 1, 2 & 3

SCALE 1" = 250' | DRAWN B. Morgan | DATE 1/18/85

IRON OXIDE STAINED PYRITE AND SERICITE ALTERATION

IRON OXIDE STAINED QTZ-SERICITE-PYRITE FLUIDIZED BRECCIAS WITH QTZ-KSPAR INTRUSIVE MATRICES

Ta — TERTIARY ( ) INTRUSIVE ANDESITES; GREY F.G. TO M.G. HORNBLENDE ANDESITE AND HORNBLENDE DIORITE

P€pg — PRECAMBRIAN ( ) GRANITE AND PEGMATITE DIKES AND INTRUSIVE MASSES, WHITE M.G. TO C.G. QTZ-KSPAR TOURMALINE GRANITES

P€s / P€gs — PRECAMBRIAN YAVAPAI SCHIST; DARK GREEN F.G TO M.G. AMPHIBOLITE AND BIOTITE QUARTZOFELDSPATHIC SCHISTS (P€s) AND GNEISS (P€gs)

FAULT, SHOWING DOWNTHROWN BLOCK

70 — FAULT, SHOWING DIP

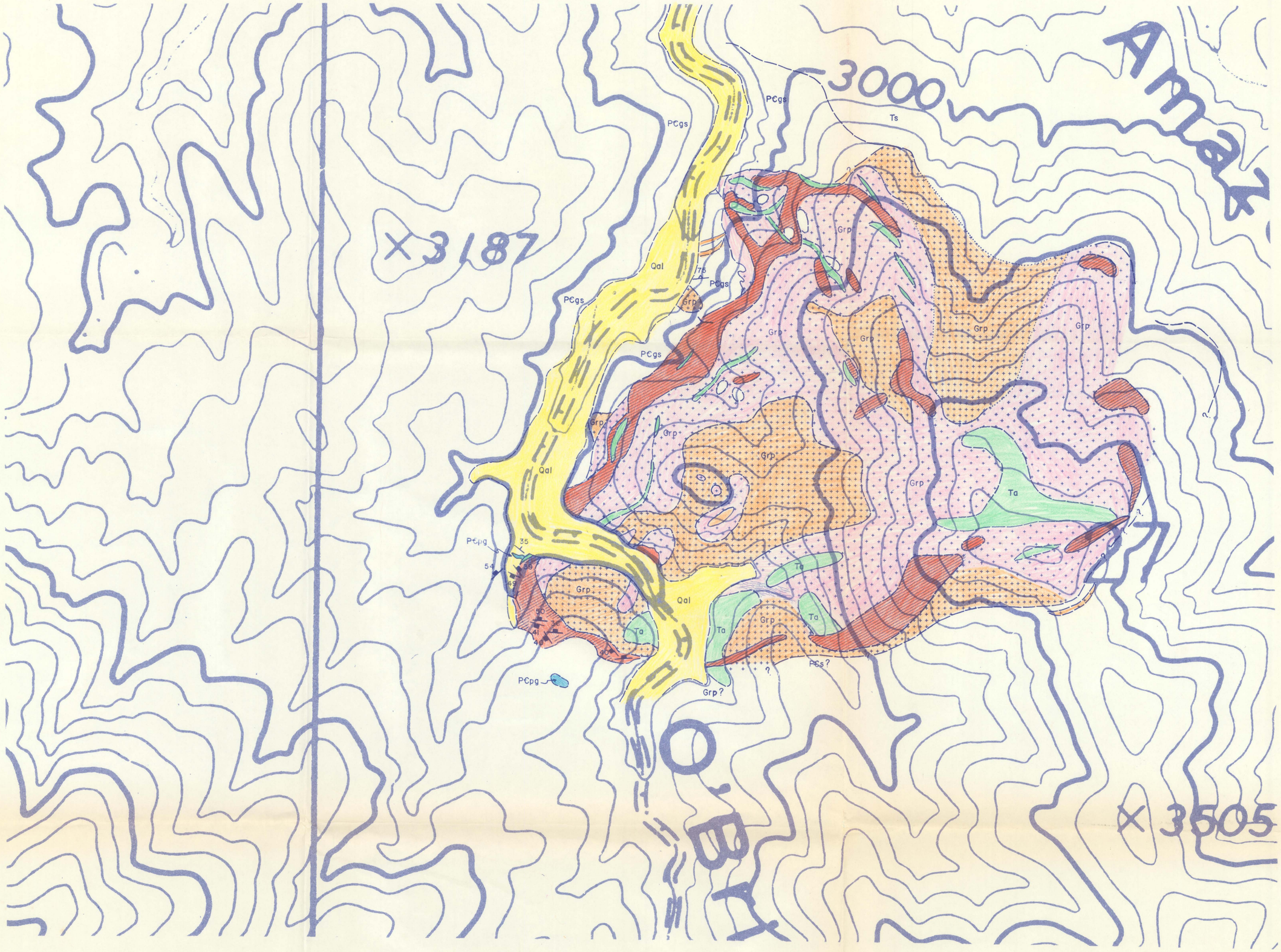
65 — FOLIATION

22 — MAJOR PLANAR SHEETING WITHIN BRECCIA HORIZONS

65 — SUBSIDIARY PLANAR SHEETING WITH BRECCIA HORIZONS - FAINT, LESS WELL DEVELOPED, PLANAR FABRIC THAT IS OFTEN CROSSCUT BY MAJOR SHEETING

35 — DIRECTION AND PLUNGE OF BRECCIA PIPE AXIS

N



NICOR MINERAL VENTURES
One of the NICOR basic energy companies

COMPILED: DATE:	PLATE III: GOLD BLUFF PROJECT, PIPE NO. 5
DRAFTED: DATE: BEM 1/22/85	
REVISED: DATE:	
	DATE: SCALE: 1" = 250' DWG. NO.

EXPLANATION:

- IRON OXIDE STAINED PYRITE AND SERICITE ALTERATION
- IRON OXIDE STAINED QTZ-SERICITE-PYRITE FLUIDIZED BRECCIAS WITH QTZ-KSPAR INTRUSIVE MATRICES
- Ta — TERTIARY (?) INTRUSIVE ANDESITES; GREY F.G. TO M.G. HORNBLENDE ANDESITE AND HORNBLENDE DIORITE
- Grp — PORPHYRITIC TO APLITIC GRANITE
- PCpg — PRECAMBRIAN (?) GRANITE AND PEGMATITE DIKES AND INTRUSIVE MASSES; WHITE M.G. TO C.G. QTZ-KSPAR TOURMALINE GRANITES
- PCs / PCgs — PRECAMBRIAN YAVAPAI SCHIST; DARK GREEN F.G. TO M.G. AMPHIBOLITE AND BIOTITE QUARTZOFELDSPATHIC SCHISTS (PCs) AND GNEISS (PCgs)

- VEIN
- 65 — FOLIATION
- 20 — CONTACT WITH DIP
- 22 — MAJOR PLANAR SHEETING WITHIN BRECCIA HORIZONS
- 65 — SUBSIDIARY PLANAR SHEETING WITHIN BRECCIA HORIZONS - FAINT, LESS WELL DEVELOPED, PLANAR FABRIC THAT IS OFTEN CROSSCUT BY MAJOR SHEETING
- 35 — DIRECTION AND PLUNGE OF BRECCIA PIPE AXIS

N

NICOR MINERAL VENTURES

One of the NICOR
basic energy companies

MEMORANDUM

To: Karl Emanuel

From: Paul Taylor Paul

Date: February 20, 1985

Subject: GOLD BLUFF PROJECT ANNUAL REPORT 1984

The Gold Bluff report in general contains the things that should be in an annual report and it appears that you certainly given some thought in writing it.

I think that it would be well to discuss in general the underlying terms that we have with Permian on the joint venture agreement in which they are working.

I also feel that your discussion on the geochemistry may be a little light and think that it would be well to get in touch with Jeff in the future on any programs on which you are working so that we can have a more detailed look at the data and certainly a more rigorous statistical approach than has been done in this report.

I would like to commend you for the work you have done on the project and appreciate the effort you have put into this report.

PT:se