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Tucson, Arizona
June 3, 1975

To: J.B. Imswiler
IMC

From: R.B. Blakestad
Perry, Knox, Kaufman, Inc.

Subject: Examination of the Mammoth Mine Area, Goldfield
(Superstition) District, Maricopa and Pinal
Counties, Arizona

Summary

Gold occurs in altered rocks along north-trending zones spatially related to biotite quartz monzonite dikes and masses in the area of the Mammoth, Black Queen and Bulldog Mines. Coarse gold is reported to occur in narrow zones adjacent to barren andesitic intrusions and small amounts of gold are said to be present throughout a 300 foot wide shear zone at the Mammoth Mine. The possibility of developing large tonnages of low-grade gold ore in this area is demonstrated by the fact that the mineralized zone at the Mammoth measures at least 200' X 1000' on the surface and is reported to extend at least 465' in depth with little change in character. The Bulldog Mine is of similar geologic setting and may be an additional source of gold-silver ore. Several large samples were taken in the area to determine the tenor and extent of the mineralization on the surface.

Recommendation

Should the samples taken during the examination indicate interesting amounts of gold and silver, it is recommended that a program of sampling and geologic mapping be undertaken to evaluate the prospect. Because of extensive alluvial cover, outcrops are sparse and widely separated in the Mammoth Mine area. Some bulldozing and/or drilling may be required to gain the needed information.

Location

The Mammoth and Black Queen Mine area is located in the foothills of the Goldfield Mountains, in Sections 1, T1N, R8E and 36(uns.) T2N, R8E, just northwest of the settlement of Goldfield, Arizona. The prospect straddles the Pinal-Maricopa County line and lies partially within the Tonto National Forest.

The Bulldog Mine is situated approximately $1\frac{1}{4}$ miles west of the Mammoth Mine in Section 2, T1N, R8E.

Background

According to Dinsmore⁽¹⁾, the Mammoth Mine was discovered in 1893; the Black Queen was developed sometime prior to that date. The Mammoth appears to have been worked more or less continuously until the early 1920's, producing free-milling ore containing gold and a little silver from high grade ore shoots. The ore was said to run between \$5 and \$50 per ton in gold (at \$20.00 per ounce), and to average about 0.5 oz/ton gold with some silver. The most recent activity of any size was at the Mammoth during the 1950's. During this time, free-milling gold ore was mined from an open cut almost directly west of Goldfield. Although the amount of ore taken is not known, it is estimated that something less than 500,000 tons was excavated. At least this much material is present on the extensive dumps surrounding the old Mammoth shaft. No production records are available for the Black Queen or Bulldog Mines, but their dumps indicate that production was small.

There is no current activity on the properties described, but gold ore is being mined on a small scale at the Golden Hillside property, about 0.5 miles north of the Black Queen shaft (see Fig. 1). This mine appears to be located on the northerly extension of the Mammoth-Black Queen ore zone.

The property comprising the Mammoth Mine Area prospect consists of an as-yet-undetermined number of claims occupying approximately 900 acres. The area of most interest includes 15 unpatented claims and 1 patented claim that take in the Mammoth and Black Queen Mines (see Fig. 2, attached), under option to Mr. C.H. Simpson of Phoenix.

Examination

Approximately $1\frac{1}{2}$ days were spent on the ground at this prospect. Some time was taken to determine the general geology of the area and to distinguish possible favorable ground. A total of 11 chip and grab samples were taken for analysis (results attached).

General Geology

Steeply-dipping, north-trending veins and fault/shear zones occur in coarse-grained Precambrian granite and Tertiary(?)

arkosic conglomerate. The broken zones are bordered and locally intruded by andesitic dikes and masses that appear to largely predate some of the breaking and all of the mineralization. The most intense zones of mineralization and alteration appear to occur in proximity to biotite quartz monzonite intrusions, which are generally propylitized, but are locally bleached and partially sericitized, especially near the Mammoth Mine area.

The granite and arkose are locally bleached and partially silicified and sericitized. The arkose in the Mammoth Mine area is crushed and broken over a zone measuring at least 1000 feet in length and 200 feet in width. Thin veinlets of quartz and calcite are very common in the broken zone, and narrow zones are uniformly silicified. Minor manganese and hematite staining is ubiquitous, and oxidized pyrite comprises approximately 1-2% of the rock in the more intensely altered areas.

The Bulldog Mine area consists of a quartz-calcite vein with some pyrite in Precambrian granite. The vein is strongly developed over widths that vary from 10 to 30 feet. An additional 15 to 30 feet of stringer-type mineralization occurs in the walls of the vein, which outcrops as a bold ridge for approximately 800 feet. A wide zone of altered granite and conglomerate(?) is found, east of the vein and adjacent to a biotite quartz monzonite porphyry mass. The prospect appears analagous in every way to the Mammoth-Black Queen area.

Mine Workings

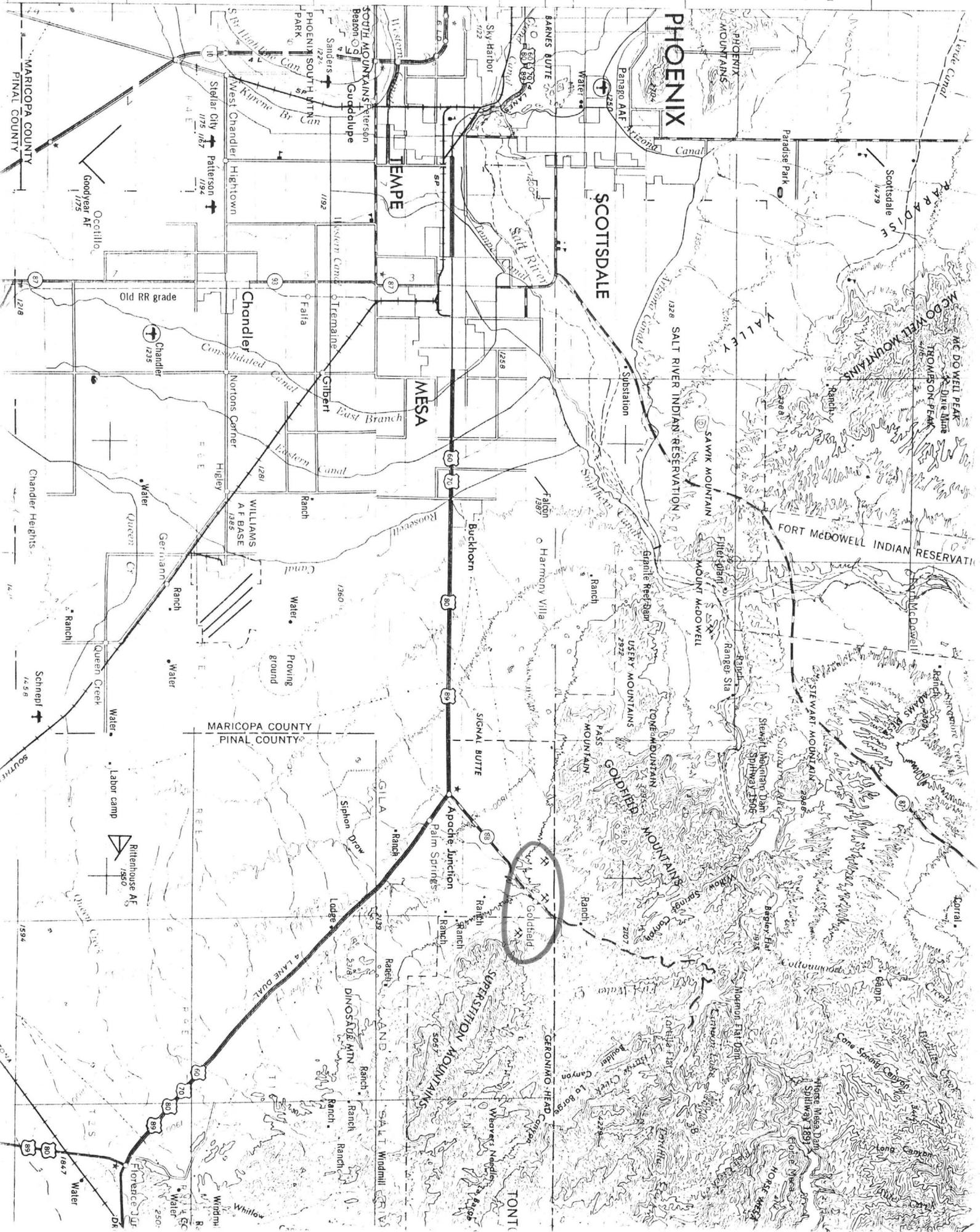
The underground workings at the Mammoth and Black Queen are inaccessible, but Simpson⁽²⁾ reports that there are about 6500 feet of surface and underground workings. Other than the blocked shafts and the open cut, the only other obvious development includes several small prospect pits and shafts and numerous areas where the surface gravels have been dozed from bedrock. No evidence of extensive sampling or diamond drilling was observed.

The area around the Bulldog is currently being mined as road-building material by the Arizona Highway Department.

References

- (1) Dinsmore, C.A., 1911, Operations at the Mammoth Mine, Goldfields, Arizona, Mining Engineering World, v. 35, p691-92
- (2) Simpson, C.H., 1974, Private report prepared for Goldfield Mines, Inc.

1000 FEET (EAS)



PHOENIX

SCOTTSDALE

TEMPE

MESA

CHANDLER

MARICOPA COUNTY
PINAL COUNTY

MARICOPA COUNTY
PINAL COUNTY

SOUTHERN

FOUR

DR

Goldfield

PHOENIX

SCOTTSDALE

TEMPE

MESA

CHANDLER

MARICOPA COUNTY
PINAL COUNTY

MARICOPA COUNTY
PINAL COUNTY

SOUTHERN

FOUR

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SCOTTSDALE

TEMPE

MESA

CHANDLER

MARICOPA COUNTY
PINAL COUNTY

MARICOPA COUNTY
PINAL COUNTY

SOUTHERN

FOUR

DR

Goldfield

GEOLOGICAL SURVEY

111°30'
33°30'

454000m E.

455

456

ROOSEVELT 40 MI.
TORTILLA FLAT 10 MI.

27°30'

458

3706000m N.

3705

3704

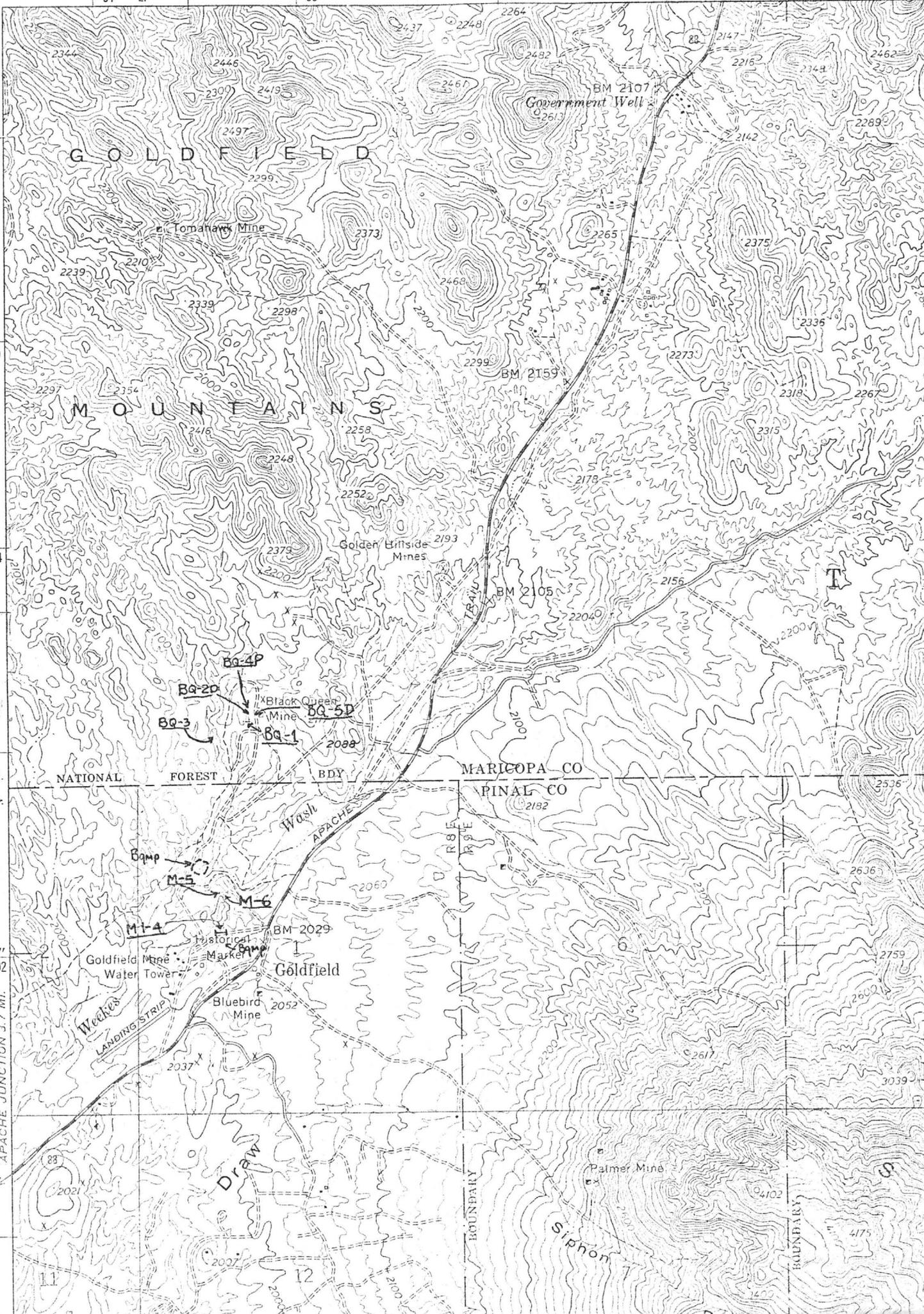
T. 2 N.

T. 1 N.

27°30'

3702

MESA 21 MI.
APACHE JUNCTION 3.7 MI.



APACHE JUNCTION QUADRANGLE
ARIZONA

7.5 MINUTE SERIES (TOPOGRAPHIC)

NE/4 DESERT WELL 15' QUADRANGLE

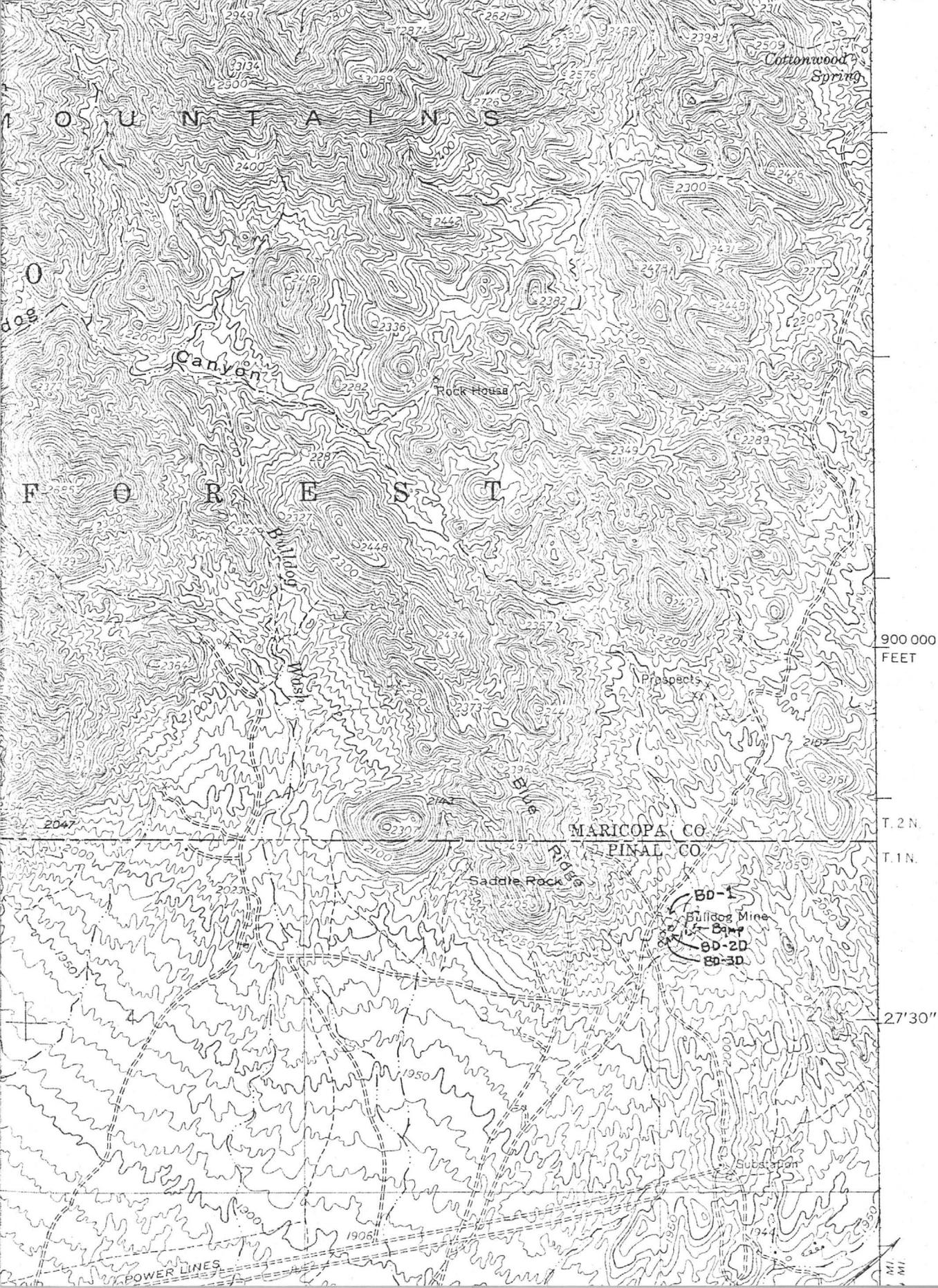
(ROOSEVELT 1:125,000)

111° 30'

620 000 FEET

111° 30'

33° 30'



900 000
FEET

T. 2 N.

T. 1 N.

27° 30'

POWER LINES

M
MI

GOLDFIELD DISTRICT - RECON 4/26/75

Sample Descriptions

BLACK QUEEN MINE AREA

BQ-1 - Chip sample at irregular intervals across 30' wide zone of somewhat altered, mineralized arkose on west side of dozed off area south of Black Queen shaft. Tert.(?) arkose well-sheared with irregular qtz-carb vnlets w/Mn staining. Minor silicification. Zone of fairly good alteration about 200' wide E-W. Possibility of some placer enrichment of gold values here. Local minor Fe oxides after pyrite. Arkose is generally poorly altered, other than qtz veining and Mn oxides. Locally bleached, some pyrite.

0.040 oz Au/T
0.57 oz Ag/T

BQ-2D - Select sample of oxidized pyrite-bearing arkose-granite(?). Taken from dump about 150' west of BQ shaft. Rock well altered w/abundant chloritic material; some sericite. Well-fractured with some drusy qtz. in vnlets. As much as 5% FeS₂, much shearing.

< 0.005 oz Au/T
0.04 oz Ag/T

BQ-3 - Chip sample across contact andesite-arkose 500' west of BQ shaft. Zone of heavily frax, propylitized andesite and bleached, iron-stained arkose. Contact appears to strike WNW, dipping steeply North. Minor qtz-carb. veining; poss some ox. pyrite in arkose.

< 0.02 ppm Au
< 0.2 ppm Ag

BQ-4P - Chip sample across 5' vein in pit ~ 200' NNW of BQ shaft. Extremely frax. zone +10' wide here at contact of conglomerate(?) w/andesite. Sample 100% conglomerate(?) with numerous qtz., carb vnlets. Mn stain abundant but not extreme. Zone strikes N. dips +85° west.

0.060 oz Au/T
1.83 oz Ag/T

BQ-5D - Composite sample of altered arkose from dumps S and W BQ shaft.

0.005 oz Au/T
0.39 oz Ag/T

MAMMOTH MINE

Channel Sample across intensely frax, altered conglomerate at south end of pond at Mammoth (large open cut). Zone here approx. 150' wide - extends +20' or more to west of sample. Zone well-mineralized w/qtz. carb., Min. stain. Probably had +5% pyrite, now oxidized.

M-1 (0-7) 0.050 oz Au/T
 0.13 oz Ag/T

M-2 (7-15) 0.010 oz Au/T
 0.10 oz Ag/T

M-3 (15-25) 0.010 oz Au/T
 0.11 oz Ag/T

M-4 (25-35) 0.005 oz Au/T
 0.06 oz Ag/T

M-5 - Chip sample taken at irregular intervals across 30' zone at North end of pit. Well-altered, mineralized arkose w/some andesite along west side.

0.005 oz Au/T
0.23 oz Ag/T

M-6 - Chip sample of altered, bleached, but less-mineralized arkose about 60' east of M-5. Zone reddish, Fe-stained arkose cut by fairly numerous steeply-dipping qtz vnlets averaging 6"-1' apart. O/C well-leached.

0.005 oz Au/T
0.03 oz Ag/T

BULLDOG MINE

BD-1 - Chip sample of western 30' of 60' wide rib sticking up in middle of large pit - rock surrounding vein excavated for use as road metal - vein is well-altered, mineralized PG granite, zone appears to be +800' long, varies from +15'-60' in width. Much Mn calcite locally.

0.025 oz Au/T
0.17 oz Ag/T

BD-2D - Grab sample of vein material from southern most shaft at Bulldog. Vein here still +30' wide, well-defined, well-mineralized. +2000 tons of ore taken from stope (5'-10' wide) along vein to north.

0.050 oz Au/T
0.61 oz Ag/T

BD-3D - Grab sample taken from fine dump material - main shaft Bulldog.

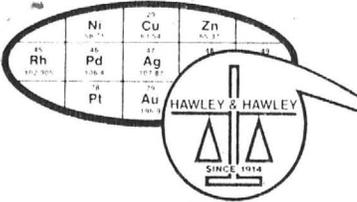
0.60 ppm Au
15. ppm Ag

SKYLINE LABS, INC.

Hawley & Hawley, Assayers and Chemists Division
 1700 W. Grant Rd., P.O. Box 50106, Tucson, Arizona 85703
 (602) 622-4836

Charles E. Thompson
 Arizona Registered Assayer No. 9427

William L. Lehbeck
 Arizona Registered Assayer No. 9425



CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au oz/ton	Ag oz/ton	Au ppm	Ag ppm	Cu ppm	Mo ppm			
1	BQ-1	0.040	0.57							
2	BQ-2D	<0.005	0.04							
3	BQ-3			<0.02	<0.2					
4	BQ-4P	0.060	1.83							
5	BQ-5D	0.005	0.39							
6	M-1 (0-7)	0.050	0.13							
7	M-2 (7-15)	0.010	0.10							
8	M-3 (15-25)	0.010	0.11							
9	M-4 (25-35)	0.005	0.06							
10	M-5	0.005	0.23							
11	M-6	<0.005	0.03							
12	BD-1	0.025	0.17							
13	BD-2D	0.050	0.61							
14	BD-3D			0.60	15.					
15	KMP-1			0.03	<0.2	5	2			
16	KMP-2			<0.02	<0.2	5	4			
17	KMP-3			34.	310.	900	14			
18	KMP-4			0.27	188.	7300	6			

TO: Perry, Knox, Kaufman, Inc.
 P.O. Box 12754
 Tucson, Arizona 85711

REMARKS:
 Trace analysis

CERTIFIED BY: *William L. Lehbeck*

 5/19/75

cc: Mr. Robert Blakestad

DATE REC'D: 5/1/75	DATE COMPL.: 5/19/75	JOB NUMBER: 750938
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SKYLINE LABS, INC.

Hawley & Hawley, Assayers and Chemists Division
 1700 W. Grant Rd., P.O. Box 50106, Tucson, Arizona 85703
 (602) 622-4836

Charles E. Thompson
 Arizona Registered Assayer No. 9427

William L. Lehmsbeck
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4	BQ-4P	0.060	1.83							
5	BQ-5D	0.005	0.39							
6	M-1 (0-7)	0.050	0.13							
7	M-2 (7-15)	0.010	0.10							
8	M-3 (15-25)	0.010	0.11							
9	M-4 (25-35)	0.005	0.06							
10	M-5	0.005	0.23							
11	M-6	<0.005	0.03							
12	BD-1	0.025	0.17							
13	BD-2D	0.050	0.61							
14	BD-3D			0.60	15.					
15	KMP-1			0.03	<0.2	5	2			
16	KMP-2			<0.02	<0.2	5	4			
17	KMP-3			34.	310.	900	14			
18	KMP-4			0.27	188.	7300	6			

TO: Perry, Knox, Kaufman, Inc.
 P.O. Box 12754
 Tucson, Arizona 85711

REMARKS:
 Trace analysis

CERTIFIED BY:

William L. Lehmsbeck
 5/19/75

cc: Mr. Robert Blakestad

DATE REC'D:

5/1/75

DATE COMPL.:

5/19/75

JOB NUMBER:

750938

PERRY, KNOX, KAUFMAN, INC.
MINERAL EXPLORATION AND DEVELOPMENT

OFFICES:

TUCSON, ARIZONA (BUSINESS)

2343 E. BROADWAY, SUITE 206
P. O. BOX 12754, ZIP 85732
TELEPHONE (602) 622-0582

SPOKANE, WASHINGTON

NORTH 20 PINES ROAD, SUITE 21
P. O. BOX 14336, ZIP 99214
TELEPHONE (509) - WA 4-0878

FROM
8/10/75 ALBQ, NM.

Bruce:

C. Simpson appears amenable to any reasonable deal, re: his option on the Goldfield property at Apache Jct., Az. I see renegotiation of his deal w/ Goldfield as an absolute necessity. He has agreed that I go with him to see Goldfield's attorneys in Phoenix, possibly on Aug. 18-19 to attempt a renegotiation. Following are some terms you might consider:

① Current Simpson Option

- Payment Sept. 1 of \$5000- to extend option 6mo.
- End of 6mo from Sept 1 - TPP \$200,000 -

② Suggested to Goldfield

- Free period until Oct 15, 1975
- Dec. 15 pay \$2000-
- If extend beyond Jan 15, 1976 Pay \$3000-
- If beyond Jan 15, 1977 \$50,000
- If beyond Jan 15, 1978 another \$50,000
- " " Jan 15, 1979 \$100,000
- Make TPP \$205,000 -

③ Suggested for C. Simpson

- If IMC-PLC extend Goldfield beyond Jan 15, 1977
we pay Simpson \$10,000 -
- If we extend subsequently beyond
Jan 1978 - 10,000
" 1979 - 20,000
- Thereafter Simpson gets royalty from production
to buyout of \$ 100,000 -- including
all payments.

Bruce, I'll be out of touch until Aug 14-15.
Call you then.

AL PERRY

The magnetic expression of Anomaly 21 is that of a minimal saddle cutting a west dipping or downfaulted WSW trending positive (intrusive extending from Mineral Park?). Depths to magnetic basement vary between 1000' and 2500'.

The land situation over Anomaly 21 is fairly complicated.

Sec. 27-W/2 - patented - held by Az. Land Title & Trust Co. except for SE/SW - surveyed for subdivision, but currently not physically divided.

Sec. 28 - open for mineral location, apparently not recently occupied.

Sec. 33 - patented - with all but a diagonal strip in the SW⁴ and SW/NW which has been subdivided, owned by Harry P. and Martha D. Heuer of Powers Lake, Wis.

Sec. 34 - apparently open for mineral location.

We have not yet ascertained whether the minerals of the former ATSFRR lands (Secs. 27 and Sec. 33 go with the property or were reserved).

Our plan of action is to stake the appropriate acreage in Secs. 28 and 34 then contact the record mineral/surface owners in the adjacent important sections.

The C.G. Patterson properties previously recommended for acquisition are in process of being optioned by a Mr. Hardy who has the turquoise concession at Mineral Park. Patterson expects to receive substantial "front money". (During July Hardy reportedly paid Duval \$100,000 royalty from his production).

The conflict over unpatented claims situated in Sec. 36 T2N - R8E, in the Mammoth-Black Queen area, was resolved in favor of Goldfield Mines, Inc., when the Superior Court of Maricopa County found the defendants (Apex Gold Mine & Expl. Co.), guilty of forcible entry. We subsequently completed the sampling for gold along two additional lines, north of the Mammoth open cut. (results on attached mylar).

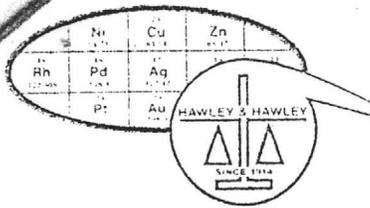
As we have established some continuity to the north trending anomalism, overtures have been made to Mr. Charles Simpson, optionee from Goldfield and to Goldfield thru Simpson. It will be mid-September before the officers of Goldfield are reassembled and any action can be considered. We have provided Simpson data pertaining to our work for recording to fulfill annual labor requirements.

Properties of the Ash Creek Partners situated at Ash Peak, near Duncan, Arizona, were examined -- see report dated August 1, 1975. It is possible that ±500,000 tons of material grade 6.0 oz Ag - 0.02 oz Au could be developed from underground adjacent to old shaft workings; but such a target is of no interest to either IMC or PKK.

Nora Colburn continues with the summary of Yuma Co. potential --- now compiling data from her July field examinations. This work will be completed by mid-September.


A.J. Perry

AJP/sc



CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm							
1	MAM-3 1 E-S	<0.02							
2	2 E-S	<0.02							
3	3 E-S	<0.02							
4	4 E-S A	<0.02							
5	5 E-S	<0.02							
6	6 E-S	<0.02							
7	7 E-S	<0.02							
8	8 E-S	<0.02							
9	8.5 E-S A	<0.02							
10	9 E-S	<0.02							
11	9.5 E-S	<0.02							
12	10 E-S	<0.02							
13	10.5 E-S	<0.02							
14	11 E-R	<0.02							
15	11.5 E-S	<0.02							
16	12 E-S	<0.02							
17	13 E-S	<0.02							
18	0 W-S	<0.02							
19	.5 W-S	0.12							
20	1 W-S	<0.02							
21	1.5 W-S A	0.12							
22	2 W-S A	0.05							
23	3 W-S	<0.02							
24	4 W-S	<0.02							
25	5 W-S	<0.02							
26	6 W-S A	<0.02							
27	7 W-S A	<0.02							
28	8 W-R	<0.02							
29	MAM-3 9 W-S A	<0.02							
30	MAM-4 .5 E-S A	1.9							
31	1 E-S A	0.37							
32	1.5 E-S A	0.09							
33	2 E-S	0.04							
34	3 E-R	0.04							
35	MAM-4 4 E-S A	<0.02							

TO:
 Perry, Knox, Kaufman, Inc.
 P.O. Box 12754
 Tucson, Arizona 85732

REMARKS:

Trace analysis

Page 1 of 2

CERTIFIED BY:

LEHMBECK



Attn.: Mr. A. J. Perry

DATE REC'D:

8/7/75

DATE COMPL.:

8/20/75

JOB NUMBER:

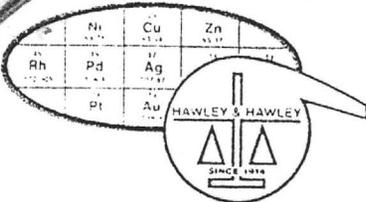
751722

SKYLINE LABS, INC.

Hawley & Hawley, Assayers and Chemists Division
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 (602) 622-4836

Charles E. Thompson
 Arizona Registered Assayer No. 9425

William L. Lehmbek
 Arizona Registered Assayer No. 9425



CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm								
36	MAM-4 1.5 W-S	<0.02								
37	2 W-S	<0.02								
38	2.5 W-S	<0.02								
39	3.5 W-R	<0.02								
40	4.5 W-S	<0.02								
41	MAM-4 5.5 W-R	<0.02								
42	MAM-5 1 E-S A	<0.02								
43	1.5 E-S A	0.04								
44	2 E-S A	0.47								
45	MAM-5 2.5 E-S A	0.21								

TO:

REMARKS:
 Trace analysis
 Page 2 of 2

CERTIFIED BY: *William L. Lehmbek*



DATE REC'D: 8/7/75	DATE COMPL.: 8/20/75	JOB NUMBER: 751722
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Western Yuma County

OFFICES:

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SPOKANE, WASHINGTON

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P. O. BOX 14336, ZIP 99214
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PERRY, KNOX, KAUFMAN, INC.

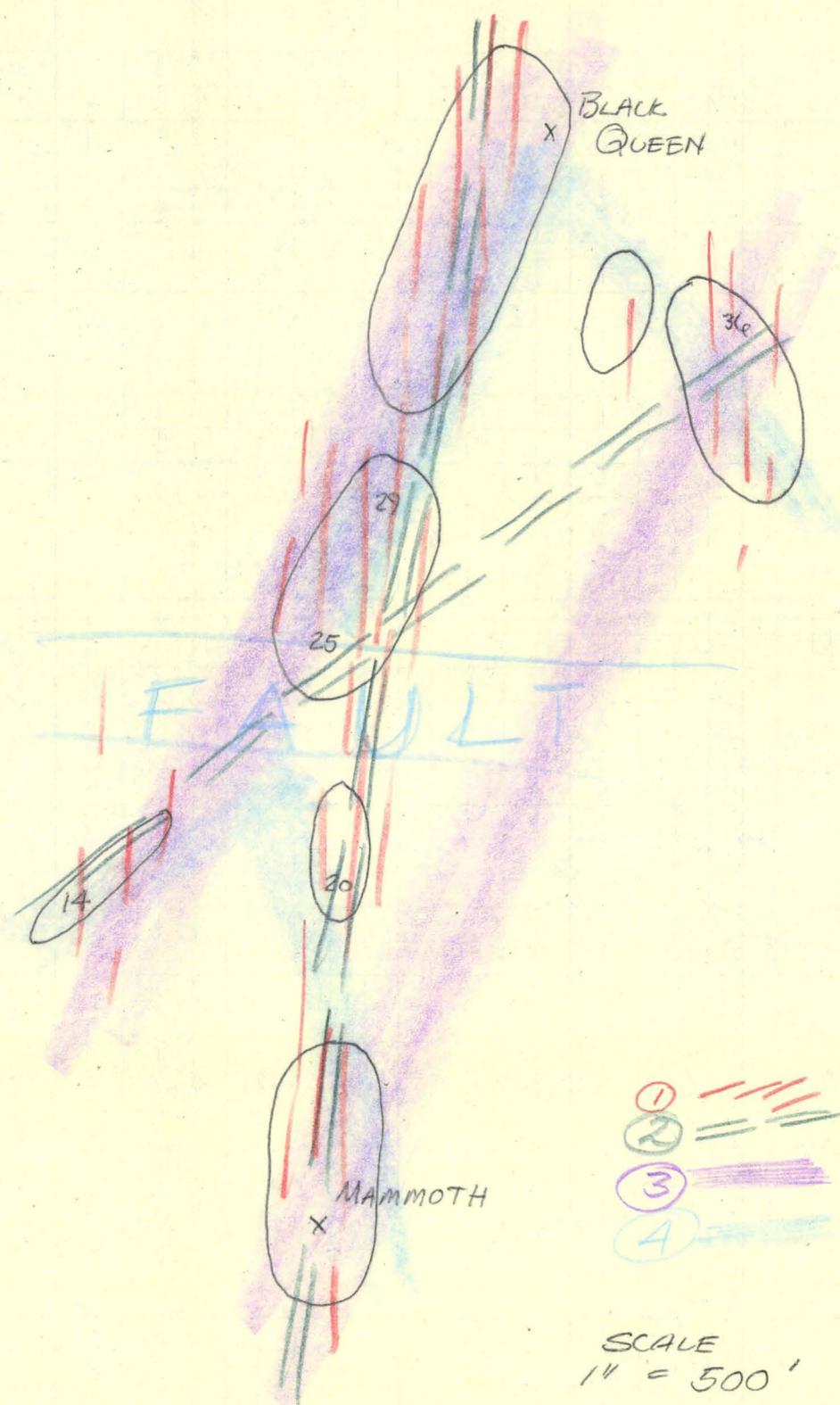
MINERAL EXPLORATION AND DEVELOPMENT

Tucson, Arizona
July 8, 1975

Mr. J.B. Imswiler
Manager of Exploration
Western USA
IMC
Suite 12
390 Freeport Boulevard
Sparks, Nevada 89431

Attached is Nora Colburn's preliminary map, rock descriptions and thoughts as to mineral controls. GC data on two lines will be available tomorrow. I will then report in full, with recommendation. We can discuss Monday -- but this will give you a start.

A.J. Perry
AJP/sc
attach



TENTATIVE STRUCTURE MODELS

FIGURE 3

June 27, 1975

To: A.J. Perry
From: N. Colburn
Subject: Outcrop Map, Mammoth Mine Area, Goldfield
(Superstition) District, Maricopa and Pinal Counties,
Arizona

Summary

It appears that much of the alteration (iron oxides and sericite) is associated with the Tertiary volcanic activity within the area. Locally, this activity was mainly flows off the more active areas to the east (Superstition Mountains), north and west, and some subsidiary or parasitic cones.

Formation of the gold deposits, associated with N20E to N20W veins and breccias of manganese oxides, calcite and quartz, also appears to be Tertiary(?). This mineralization age, however, may be a Tertiary reconcentration of gold, previously associated with the Precambrian granite. The granite does act as the main host for the veins.

In some places the mineralized veins seem to intrude an arkose-conglomerate. This rock has a very similar appearance to the granite, and is derived from it by one of possibly three methods.

As can be seen on the accompanying maps, the host granite is fairly continuous, although covered by fluvial deposits or Tertiary volcanics.

Small rhyolitic sills and basaltic intrusives occur in the volcanics, and also in the granite. A distinctive "biotite quartz monzonite" does intrude the granite. In the area mapped, this Tertiary(?) dike system seems not to interrupt the mineralized zones.

A post mineralization disruption has occurred in the form of E-W or N60W fracturing. An andesite dike series, in part follows these trends, but is itself cut off. Some local enrichment seems to form at the edges of such dikes. These andesitic dikes intrude both the granite and the volcanics.

Procedure

Three field days were spent mapping rock outcrops, on 1" = 500' scale aerial photographs.

Mineralized Areas

Using a minimal estimate of size, several zones of alteration and mineralization have been outlined on Figure 2. Based on the pattern of zones (mineralized veins), four tentative models are proposed (Figure 3). These models are geometric only, but geochemical sampling results may give support to one of them. The pattern of altered zones and veins may indicate that:

- 1) mineralization is scattered throughout the area, with higher values in a central N-S shear(s) or vein(s);
- 2) there are intersecting N15E and N45E trends, both mineralized;
- 3) there are two parallel mineralized vein systems trending N20E; and
- 4) mineralization occurs at the intersection of N45W and N15E trends, which are separated into N and S blocks by a nearly E-W trending fault(s).

Extension to depth of the mineralized veins is not certain. The main Mammoth shaft is said to have reached 1000 feet in depth, and was worked on this level. The early workings at the Mammoth (Mormon Stope) were within 150 feet of the surface, and the open pit seems to have reached a depth of 60 feet(?). Making the assumption that the deepest shaft was inclined at -45° mineralization to a depth of 500 feet is assured.

Mineralization depths near the Black Queen are not known.

Alteration

The pre-volcanic rocks all show a fairly high degree of oxidation. The alluvial units derived from these rocks are also highly oxidized, so that the whole area tends to have brown or red (FeOx-lim, hem) coloration.

In mapping, only those areas showing intense FeOx staining, were noted. This was further limited in outcrop areas, to zones showing sericitic alteration. In these same outcrops, varying amounts of MnOx occur in quartz-calcite veins or veinlets.

In some exposures west or southwest of the Black Queen MnOx(?) staining and/or sericitization is intense enough to mask the rock type.

Calcite veins themselves are not indicative of mineralization. This is because calcite is a common weathering product of volcanics. The increase of near-surface vein structures, and caliche deposits to the west and north is due to the increase of volcanic rock outcrops.

Mention has been made of the widespread red oxidation color. In a number of outcrops, the usually "red" rocks are "green". In some cases (as at outcrop 21, located in the wash) the granite, in this case, shows patchy zones of green, with red zones bordering fractures or veinlets. The "green" or gray color occurs also in the arkosic rocks, and is definitely found on contact zones below the younger volcanics. The green color (reduced $FeOx$) can be due to 1) time spent in "alkaline" water, as in bottom of streams, and/or 2) CO_2 added to the local environment from degassing or weathering of the volcanics.

Special note (significance uncertain): The $FeOx$ and alteration type may change within the granitic rocks. On the south and west, hematite or red-brown limonite is more common. On the east, and at the Black Queen outcrop itself, there seems to be a granitic phase typically with yellow (limonite?) coloration.

Rock Types

Precambrian Granite:

There are actually several granitic phases present, but all seem to have "pink" feldspar laths. Generally these rocks can be divided into NE and SW zones. In the SW part of area, the granite is quite coarse grained, in places porphyritic, with zones of definite pegmatite. A "bronze" biotite can be distinguished. In the NE, the granite is more equigranular and finer grained. The "yellow" phase occurs in this area.

Intrusive into these "granites", are dikes of aplite, "muscovite granite" and "biotite quartz monzonite", the last two types may be quite young (Tertiary?) and could be related to diking within the volcanics.

The Precambrian age is assigned, because of known Precambrian granite and metamorphics in the Usery Mountains, Four Peaks and Roosevelt Dam areas.

In the Mammoth area there are no outcrops of granite. However mention is made in the Goldfield Mines, Inc. report of a sample of gouge and porphyry, from the 7th level. This may mean the mined zone is within the porphyritic granite phase.

Arkose-Conglomerate:

As with the "granite", this sedimentary unit is actually three "phases", each type having formed by a different method.

1) An arkose, composed of granitic clasts only, was probably derived directly from the granite and is a true regolith. Similarity to the "granite" is striking and may actually be a "recent" weathering surface on the granite. (Age: Precambrian to Recent).

2) A more widespread arkosic conglomerate, composed predominantly of granite and quartzite clasts, with common red rhyolite fragments and some jasper; exotics include limestone, limy shale (Paleozoic?) and patches of white vein quartz.

As a result of recent weathering, near-outcrops of this unit, are identified by a surface lag deposit of quartzite and rhyolite fragments.

This unit appears to be Tertiary(?) in age, but prior to the major portion of volcanic activity. It is an alluvial(?) reworking of earlier units. One such unit is partially preserved near the Mammoth Pit, and is a quartzite pebble conglomerate similar in appearance and lithology to those in the Younger Precambrian Apache Group. Exotic limestone clasts seem to be Paleozoic in "appearance". Presently the nearest such outcrops are 20 miles to the NE or SE, but outcrops could have previously existed in the Goldfield's area. The flow-banded, crystalline, red rhyolite clasts are very similar to the Older Precambrian "Red Rock Rhyolite". Jasper pebbles are also characteristic of some Older Precambrian units, as those exposed at Four Peaks in the Mazatzals. However, some of the red rhyolite fragments could have been derived from the nearby Superstitions.

Source of this material probably is local (within 5 miles) based on the presence of the earlier clastic unit. However the southern edge of the Mazatzal Mountains 10 miles to the NE, is the nearest source at the present time. (Age: Younger Precambrian to Recent).

3) Another kind of reworking occurred during, or after volcanic activity, so that arkosic conglomerate material became enclosed in a volcanic matrix. This unit is not well defined, and only scattered outcrops exist. Included are zones of highly unsorted material which may represent lahar-mudflow deposition. On the edge of the western volcanics, there are some indications that this type may be an oxidized phase of a distal edge of a lithic tuff breccia flow.

Volcanics:

These Tertiary rocks onlap the granite and arkose-conglomerate from the north and west. They thicken rapidly to the north. Surface lag deposits on the west may indicate underlying volcanics, but perhaps as in the Mammoth area, they may be an erosional veneer on "granitic" units.

Most widespread of the volcanics are a variety of flows, from rhyodacite lithic breccias to andesite feldspar porphyrys. In the west portion, so far mapped, a rhyolitic pyroclastic(?) tuff alternates with or is intruded by massive to vesicular andesite(?). Intrusive into these units, and nearby granite and/or arkose, are basalt plugs. Remanents of associated cinder deposits are found in the west wash.

This basalt intrudes, and intensely bleaches and alters granite and/or arkose at 42 and 43.

Relationship of the basalt event to the previously mentioned andesite dikes is uncertain. The andesite may be younger. (Age: Tertiary).

Alluvium:

Recent reworking of the oxidized basement, results in pervasive red oxidation color of the present-day alluvium. It is distinguished from the Tertiary units by 1) being nearly flat lying, and 2) containing volcanic fragments, as say andesite porphyry. Garbage-filled pit at 7 exposes a crosscut of such river gravel.

BLM work file 7/8/81

Sec. 1 T1N R8E

ownership

Goldfield Mines

Ozburn, Hall, Frederick & Hubble

Sec. 36 T2N R8E

Olive Clark Mine Co.

Peterson & Dieking

Goldfield Mines

Denham

General Mining & Expl.

Note: Some of these claims supposed to have lapsed

1/6/86

- see few drill holes by Canucks,
- area appears to be pretty well urbanized. lots of crushed rock plants
- the mineralized zone is pretty erratic, nothing at surface between the Black Area and Mammoth areas really
- none of the samples shows consistent mineralized values of economic grade, anywhere
- the arkose is interesting, appears to be slightly moved granitic detritus, generally massive, bedding not present.
- little alteration in arkose, even next to gtz veins.
- host is pretty much described in other reports.
- the Bulldog Mine area now covered by a trailer, crushed rock plant
- probably forget further work

Al King

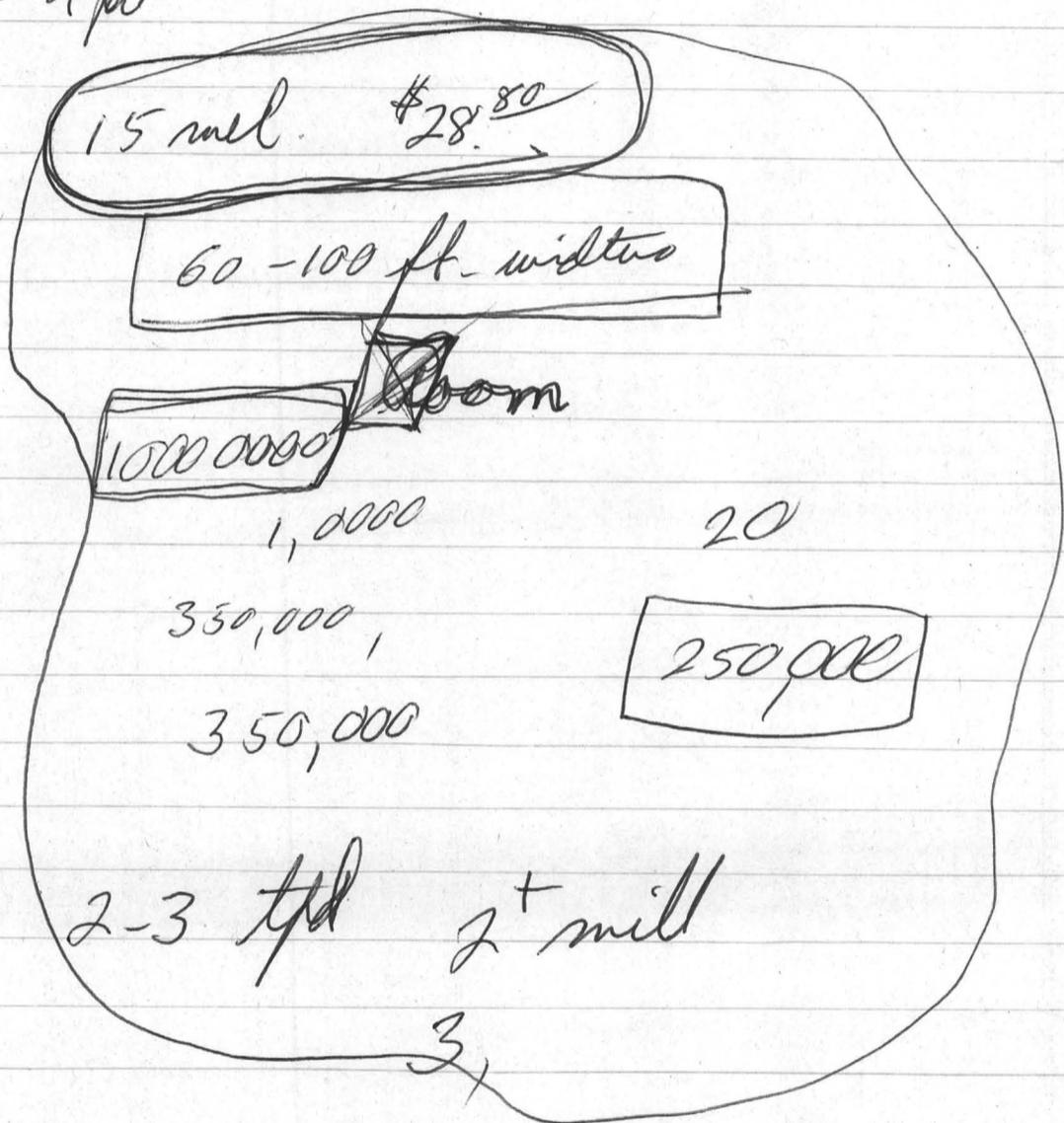
8-15-15

Mammoth - Black Queen

• Owned by Goldfield

• Simpson holds lease from Goldfield

Last pr



Checked out 8 of Ansonia area
between Calicut & turn in Rd @ SE of 20 Wagon
highway

totally & partially in Block 1 some totally
blind.

None in BR saw mineralization along
WN structures.

Dikes parallel axes.

not intersecting except for veins

No widespread dissemination.

If buried intrusion they are @ great
depths.

Negative.

Two areas of interest.

are WSW of Ithaca peak.

- Proximal to Ithaca peak
- Dural has new operations on "tree"
- Trace had mentioned anomaly in tailings pond
area never fully explained
 - 3/4 on tailings pond
 - 1/4 may or may not be on tree left
- 2 low hills - altered
may be occupied - (Dural?)
was occupied by Patterson.
- Very little chance of being new

- Unacupid anomaly
- Rotary Drillhole mineralogy
Pyrite / + Sphalerite

A few hundred feet off of anomaly
anomaly (El Paso?) drill hole
Depth unknown.

Depth in Area of second anomaly
1,000 - 1,500 from surface

Drilled 63-a-5.

About half of land is open

Anomaly = a couple sections

Intrusion - suspect intrusions

may be an outlier of same gneiss block

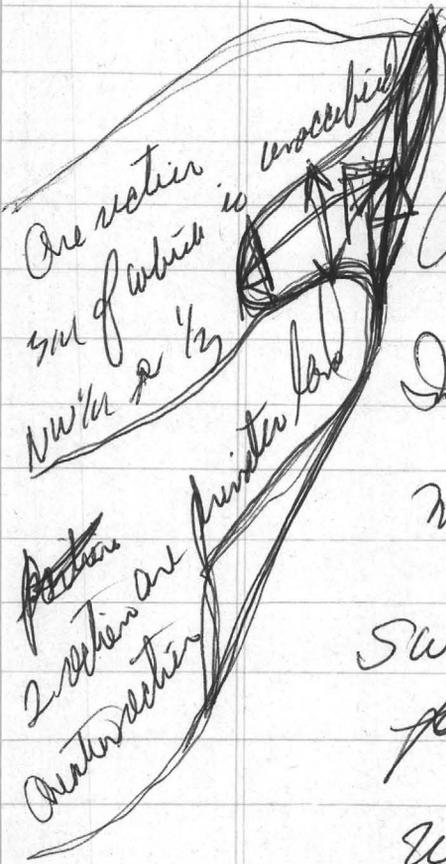
SW trending intrusion & embayments in north
part.

W of Mineral Park

Shallow part of anomaly coincides with

2 blocks of land Ouz had title to Trust
acquisition

Private land.



Tucson, Arizona
June 3, 1975

To: J.B. Imswiler
IMC

From: R.B. Blakestad
Perry, Knox, Kaufman, Inc.

Subject: Examination of the Mammoth Mine Area, Goldfield
(Superstition) District, Maricopa and Pinal
Counties, Arizona

Summary

Gold occurs in altered rocks along north-trending zones spatially related to biotite quartz monzonite dikes and masses in the area of the Mammoth, Black Queen and Bulldog Mines. Coarse gold is reported to occur in narrow zones adjacent to barren andesitic intrusions and small amounts of gold are said to be present throughout a 300 foot wide shear zone at the Mammoth Mine. The possibility of developing large tonnages of low-grade gold ore in this area is demonstrated by the fact that the mineralized zone at the Mammoth measures at least 200' X 1000' on the surface and is reported to extend at least 465' in depth with little change in character. The Bulldog Mine is of similar geologic setting and may be an additional source of gold-silver ore. Several large samples were taken in the area to determine the tenor and extent of the mineralization on the surface.

Recommendation

Should the samples taken during the examination indicate interesting amounts of gold and silver, it is recommended that a program of sampling and geologic mapping be undertaken to evaluate the prospect. Because of extensive alluvial cover, outcrops are sparse and widely separated in the Mammoth Mine area. Some bulldozing and/or drilling may be required to gain the needed information.

Location

The Mammoth and Black Queen Mine area is located in the foothills of the Goldfield Mountains, in Sections 1, T1N, R8E and 36(uns.) T2N, R8E, just northwest of the settlement of Goldfield, Arizona. The prospect straddles the Pinal-Maricopa County line and lies partially within the Tonto National Forest.

The Bulldog Mine is situated approximately $1\frac{1}{4}$ miles west of the Mammoth Mine in Section 2, T1N, R8E.

Background

According to Dinsmore⁽¹⁾, the Mammoth Mine was discovered in 1893; the Black Queen was developed sometime prior to that date. The Mammoth appears to have been worked more or less continuously until the early 1920's, producing free-milling ore containing gold and a little silver from high grade ore shoots. The ore was said to run between \$5 and \$50 per ton in gold (at \$20.00 per ounce), and to average about 0.5 oz/ton gold with some silver. The most recent activity of any size was at the Mammoth during the 1950's. During this time, free-milling gold ore was mined from an open cut almost directly west of Goldfield. Although the amount of ore taken is not known, it is estimated that something less than 500,000 tons was excavated. At least this much material is present on the extensive dumps surrounding the old Mammoth shaft. No production records are available for the Black Queen or Bulldog Mines, but their dumps indicate that production was small.

There is no current activity on the properties described, but gold ore is being mined on a small scale at the Golden Hillside property, about 0.5 miles north of the Black Queen shaft (see Fig. 1). This mine appears to be located on the northerly extension of the Mammoth-Black Queen ore zone.

The property comprising the Mammoth Mine Area prospect consists of an as-yet-undetermined number of claims occupying approximately 900 acres. The area of most interest includes 15 unpatented claims and 1 patented claim that take in the Mammoth and Black Queen Mines (see Fig. 2, attached), under option to Mr. C.H. Simpson of Phoenix.

Examination

Approximately $1\frac{1}{2}$ days were spent on the ground at this prospect. Some time was taken to determine the general geology of the area and to distinguish possible favorable ground. A total of 11 chip and grab samples were taken for analysis (results attached).

General Geology

Steeply-dipping, north-trending veins and fault/shear zones occur in coarse-grained Precambrian granite and Tertiary(?)

arkosic conglomerate. The broken zones are bordered and locally intruded by andesitic dikes and masses that appear to largely predate some of the breaking and all of the mineralization. The most intense zones of mineralization and alteration appear to occur in proximity to biotite quartz monzonite intrusions, which are generally propylitized, but are locally bleached and partially sericitized, especially near the Mammoth Mine area.

The granite and arkose are locally bleached and partially silicified and sericitized. The arkose in the Mammoth Mine area is crushed and broken over a zone measuring at least 1000 feet in length and 200 feet in width. Thin veinlets of quartz and calcite are very common in the broken zone, and narrow zones are uniformly silicified. Minor manganese and hematite staining is ubiquitous, and oxidized pyrite comprises approximately 1-2% of the rock in the more intensely altered areas.

The Bulldog Mine area consists of a quartz-calcite vein with some pyrite in Precambrian granite. The vein is strongly developed over widths that vary from 10 to 30 feet. An additional 15 to 30 feet of stringer-type mineralization occurs in the walls of the vein, which outcrops as a bold ridge for approximately 800 feet. A wide zone of altered granite and conglomerate(?) is found, east of the vein and adjacent to a biotite quartz monzonite porphyry mass. The prospect appears analagous in every way to the Mammoth-Black Queen area.

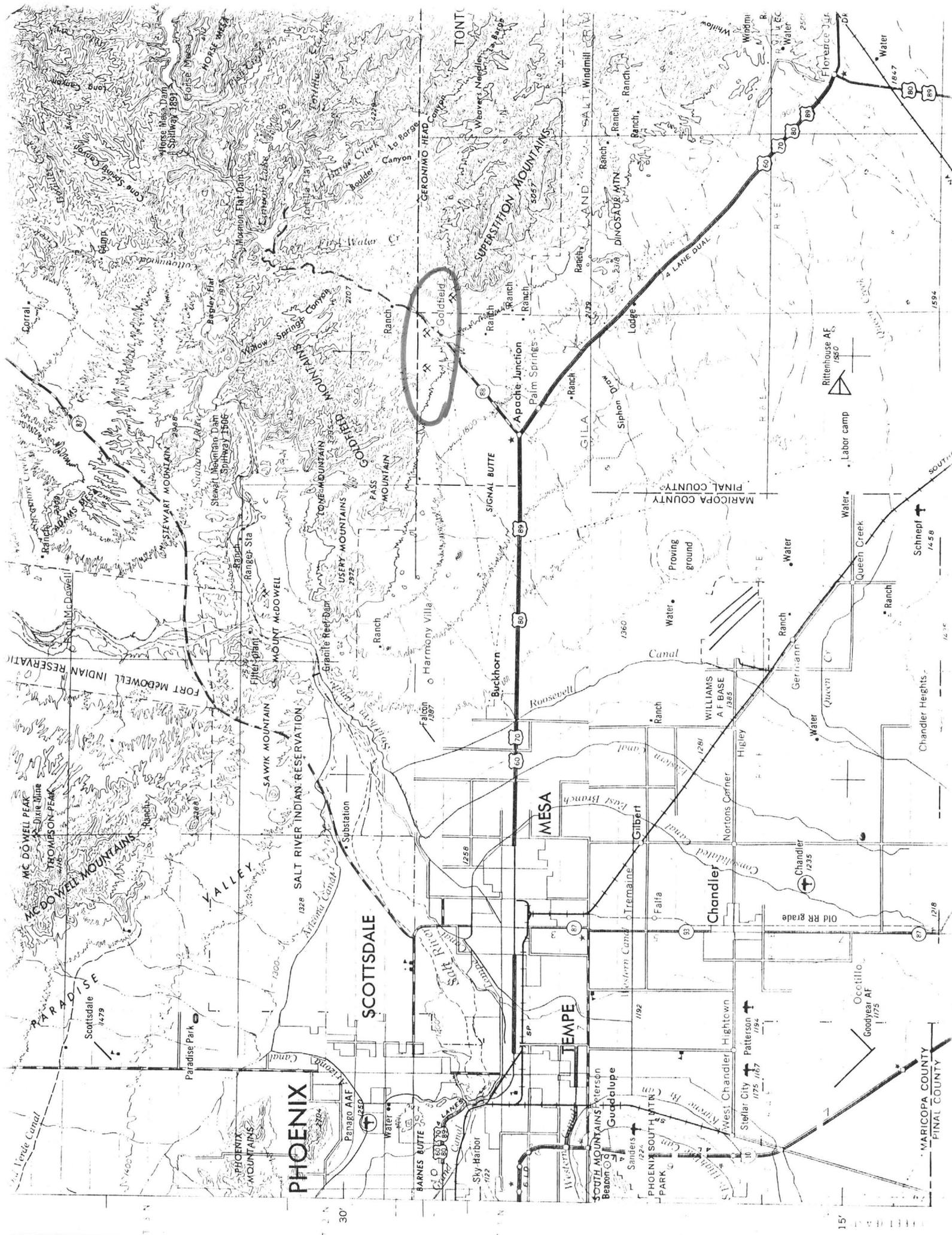
Mine Workings

The underground workings at the Mammoth and Black Queen are inaccessible, but Simpson⁽²⁾ reports that there are about 6500 feet of surface and underground workings. Other than the blocked shafts and the open cut, the only other obvious development includes several small prospect pits and shafts and numerous areas where the surface gravels have been dozed from bedrock. No evidence of extensive sampling or diamond drilling was observed.

The area around the Bulldog is currently being mined as road-building material by the Arizona Highway Department.

References

- (1) Dinsmore, C.A., 1911, Operations at the Mammoth Mine, Goldfields, Arizona, Mining Engineering World, v. 35, p691-92
- (2) Simpson, C.H., 1974, Private report prepared for Goldfield Mines, Inc.



PHOENIX

SCOTTSDALE

TEMPE

MESA

CHANDLER

PHOENIX MOUNTAINS

SALT RIVER INDIAN RESERVATION

SAWIK MOUNTAIN

GOLDIE MOUNTAIN

TONTO

BARNES BUTTE

WESTERN MOUNTAINS

USERY MOUNTAINS

CONE MOUNTAIN

GERONIMO HEAD

SKY HARBOR

SOUTH MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

PHOENIX SOUTH MOUNTAINS PARK

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

GUADALUPE

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

WEST CHANDLER

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

STELLAR CITY

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

WEST CHANDLER

WESTERN MOUNTAINS

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WEAVERS NEEDLES

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WEAVERS NEEDLES

STELLAR CITY

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

WEST CHANDLER

WESTERN MOUNTAINS

GRANITE REEF-BEAR

WILLOW SPRINGS

WEAVERS NEEDLES

30'

15'

MARICOPA COUNTY
PINAL COUNTY

GEOLOGICAL SURVEY

111°30'
33°30'

454000m E.

455

456

ROOSEVELT 40 MI.
TORTILLA FLAT 10 MI.

27°30'

458

3706000m N.

3705

3704

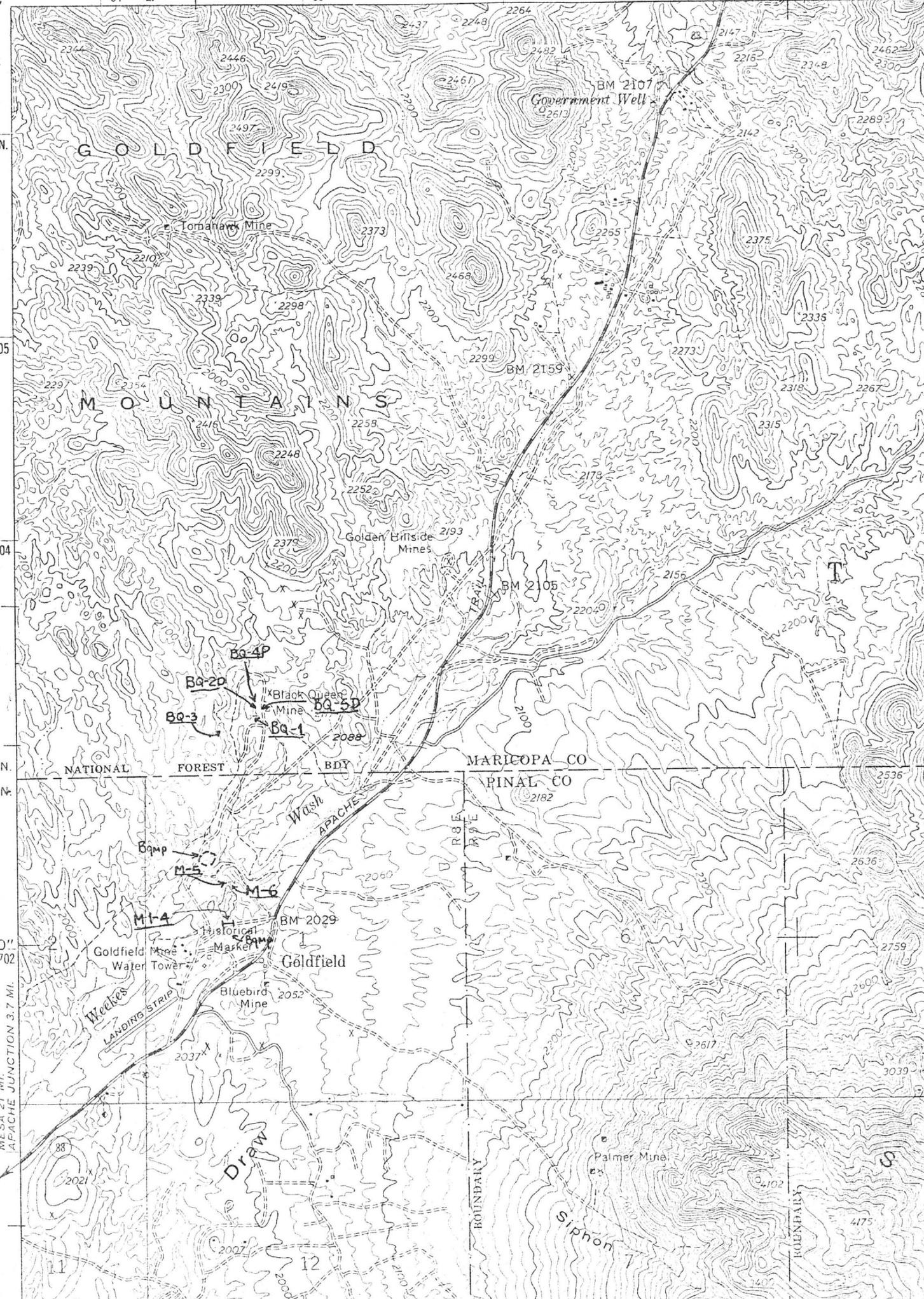
T. 2 N.

T. 1 N.

27°30'

3702

MESA 21 MI.
APACHE JUNCTION 3.7 MI.



APACHE JUNCTION QUADRANGLE

ARIZONA

7.5 MINUTE SERIES (TOPOGRAPHIC)

NE/4 DESERT WELL 15' QUADRANGLE

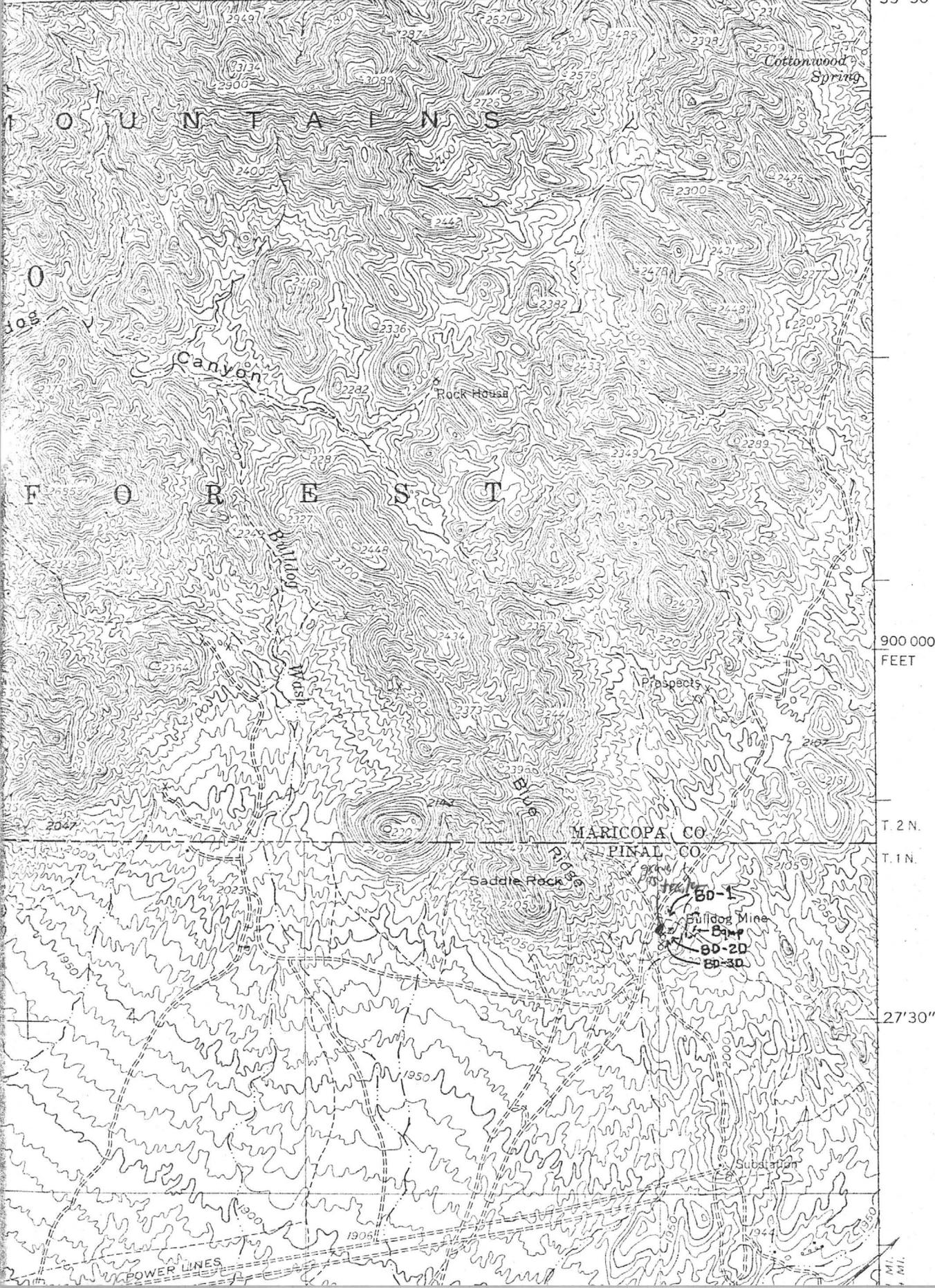
(ROOSEVELT 1:125,000)

111° 30'

620 000 FEET

111° 30'

33° 30'



900 000 FEET

T. 2 N.
T. 1 N.

27' 30"

MI.
MI.

GOLDFIELD DISTRICT - RECON 4/26/75

Sample Descriptions

BLACK QUEEN MINE AREA

BQ-1 - Chip sample at irregular intervals across 30' wide zone of somewhat altered, mineralized arkose on west side of dozed off area south of Black Queen shaft. Tert.(?) arkose well-sheared with irregular qtz-carb vnlets w/Mn staining. Minor silicification. Zone of fairly good alteration about 200' wide E-W. Possibility of some placer enrichment of gold values here. Local minor Fe oxides after pyrite. Arkose is generally poorly altered, other than qtz veining and Mn oxides. Locally bleached, some pyrite.

0.040 oz Au/T
0.57 oz Ag/T

BQ-2D - Select sample of oxidized pyrite-bearing arkose-granite(?). Taken from dump about 150' west of BQ shaft. Rock well altered w/abundant chloritic material; some sericite. Well-fractured with some drusy qtz. in vnlets. As much as 5% FeS₂, much shearing.

< 0.005 oz Au/T
0.04 oz Ag/T

BQ-3 - Chip sample across contact andesite-arkose 500' west of BQ shaft. Zone of heavily frax, propylitized andesite and bleached, iron-stained arkose. Contact appears to strike WNW, dipping steeply North. Minor qtz-carb. veining; poss some ox. pyrite in arkose.

< 0.02 ppm Au
< 0.2 ppm Ag

BQ-4P - Chip sample across 5' vein in pit ~ 200' NNW of BQ shaft. Extremely frax. zone +10' wide here at contact of conglomerate(?) w/andesite. Sample 100% conglomerate(?) with numerous qtz., carb vnlets. Mn stain abundant but not extreme. Zone strikes N. dips +85° west.

0.060 oz Au/T
1.83 oz Ag/T

BQ-5D - Composite sample of altered arkose from dumps S and W BQ shaft.

0.005 oz Au/T
0.39 oz Ag/T

MAMMOTH MINE

Channel Sample across intensely frax, altered conglomerate at south end of pond at Mammoth (large open cut). Zone here approx. 150' wide - extends +20' or more to west of sample. Zone well-mineralized w/qrtz. carb., Min. stain. Probably had +5% pyrite, now oxidized.

M-1 (0-7) 0.050 oz Au/T
 0.13 oz Ag/T

M-2 (7-15) 0.010 oz Au/T
 0.10 oz Ag/T

M-3 (15-25) 0.010 oz Au/T
 0.11 oz Ag/T

M-4 (25-35) 0.005 oz Au/T
 0.06 oz Ag/T

M-5 - Chip sample taken at irregular intervals across 30' zone at North end of pit. Well-altered, mineralized arkose w/some andesite along west side.

0.005 oz Au/T
0.23 oz Ag/T

M-6 - Chip sample of altered, bleached, but less-mineralized arkose about 60' east of M-5. Zone reddish, Fe-stained arkose cut by fairly numerous steeply-dipping qtz vnlets averaging 6"-1' apart. O/C well-leached.

0.005 oz Au/T
0.03 oz Ag/T

BULLDOG MINE

BD-1 - Chip sample of western 30' of 60' wide rib sticking up in middle of large pit - rock surrounding vein excavated for use as road metal - vein is well-altered, mineralized PG granite, zone appears to be +800' long, varies from +15'-60' in width. Much Mn calcite locally.

0.025 oz Au/T
0.17 oz Ag/T

BD-2D - Grab sample of vein material from southern most shaft at Bulldog. Vein here still +30' wide, well-defined, well-mineralized. +2000 tons of ore taken from stope (5'-10' wide) along vein to north.

0.050 oz Au/T
0.61 oz Ag/T

BD-3D - Grab sample taken from fine dump material - main shaft Bulldog.

0.60 ppm Au
15. ppm Ag

BRACE RESOURCES LTD. (BCE-V)

ANSCO RESOURCES (B.C.) LTD.

VISIBLE GOLD REPORTED IN - David R. Morgan P.Eng. manager for the Brace Resources Ltd. 60%, FIRST ARIZONA DRILL HOLE AnSCO Resources (B.C.) Ltd 40% joint venture has reported the first hole on the gold field property near Apache Junction, 80 miles east of Phoenix, Arizona was diamond drilled to a depth of 120 ft. at a 45° angle. Visible gold has been reported in two sections near 80 feet. The hole was still thought to be in quartz at its 120 foot depth, assays will be reported.

Hole No.2 has been collared under the hole No.1 Rotary drilling is to commence the week of February 5.

BRACE RESOURCES LTD. (BCE-V)

ANSCO RESOURCES (B.C.) LTD.

ERRATIC GOLD VALUES REPORTED - Results from the Brace Resources Ltd. 60%, AnSCO Resources (B.C.) Ltd. 40% joint venture on the Mammoth property near Apache Junction Arizona show erratic gold values.

Three chip samples from the centre or "Copper" zone over a 1.2 foot width returned results of 0.88; 3.6; and 19 oz. of gold/ton showing the vein to be very erratic. On diamond drill hole and three rotary drill holes 250 ft. to 300 ft. west of the "Copper" zone have also shown visible gold. One of the rotary holes, #4, had a good visible gold section from 180 ft. to 200 ft. but encountered a previously mined stope and was lost. It ran 0.364 oz. of gold from 180 ft. to 190 ft. and .755 oz. of gold from 190 ft. to 200 ft. or 0.559 oz. of gold over 20 ft.

Seven diamond drill holes and seven rotary drill holes have now been completed over a 3000 foot strike length of the vein.

Assay from further of the holes are awaited.

BRACE RESOURCES LTD. (BCE-V)

MAJOR FIRMS INTERESTED - On the Brace Resources Ltd. 60% - AnSCO Resources (B.C.) Ltd. 40% joint venture Mammoth IN ARIZONA GOLD CLAIMS property at Apache Junction, Arizona, representatives of 4 major mining companies have visited in the last 2 weeks and a geologist with one of these companies has been on the property for the past 8 days. This geologist has been taking his own samples and is obtaining his own assays.

In reporting this, Brace secretary John C.L. Black adds that assay results from the first 10 holes drilled by the joint venture will be released early next week.

Diamond drilling continues.

BRACE RESOURCES LTD. (BCE-V)

ANSCO RESOURCES (B.C.) LTD. (ANS-V)

APACHE JUNCTION PROPERTY DROPPED - Brace Resources Ltd. and AnSCO Resources (B.C.) Ltd. have reported termination of the option on their property at Apache Junction, Arizona. The companies are abandoning their option on the Mammoth property forthwith. The decision was brought about because of the optionors refusal to reduce the 9% gross royalty as well as the disappointing results obtained while driving the decline on the property.

Hole No	Interval	Length	Oz.Gold/T	Oz.Silver/T
DL	50 - 54	4.0 Ft.	.038	.44
	54 - 55.5	1.5	2.76	1.36
	55.5- 60.0	4.5	.024	.70
	50 - 60	10.0	.44	.698
	95 - 102	7.0	1.952	1.18
DDH7	84 - 86.5	2.5	0.154	7.21
R-10	165 - 170	5.0	.082	.14
	170 - 175	5.0	.852	.77
	175 - 180	5.0	.604	.46
	165 - 180	15.0	.512	.45
R-19	140 - 150	10.0	.494	0.25
	150 - 155	5.0	.460	0.1
	140 - 155	15.0	.482	0.20
R-20	165 - 170	5.0	.238	2.38
	170 - 175	5.0	.102	1.84
	175 - 180	5.0	.366	0.48
	180 - 185	5.0	.130	0.51
	165 - 185	20.0	.204	1.30
R-22	105 - 110	5.0	.238	2.70

FORTY HOLES DRILLED TO DATE ON HIGH POTENTIAL PHOENIX GOLD PROJECT

Steve Radvak, P.ENG., mining engineer, and president of Brace Resources Ltd. and AnSCO Resources (B.C.) Ltd. has been prospecting, and exploring, in Arizona for more than ten years. He has worked on gold, copper, silver and uranium. He has raised the money through a variety of companies and with a variety of partners. Several properties he has worked on have developed ore and several have got to limited production. The Mammoth gold property, which he now has in Brace and AnSCO, has, at worst, a small tonnage of low grade for a large tonnage operation. The 30-claim, 980-acre Mammoth property is located 10 miles north of Apache Junction, at the foot of the Superstition Mountains 30 miles east of Phoenix, Arizona. Brace has to 60% and AnSCO as to 40% hold an option

to acquire the property from Goldfield Mines Inc. and Triple S Mining Company. Payments were \$150,000 by Feb. 10, 1984 then \$20,000 March 10, 1984, and \$20,000 per month or 9% of production until \$500,000 has been paid then reducing to 7% and later to 5% of production until the full end price of \$50,000,000 has been paid. Each of Brace and AnSCO have recently completed public financing. Brace has a free working capital of approximately \$700,000 with 3,697,971 shares issued and AnSCO has a free working capital of approximately \$480,000 and 2,748,001 shares issued. One of the claims is subject of a court case and no work is being done there now.

-CONTINUED ON PAGE TWO -

geologist who has worked on various of Mr.Radvak's projects for the past ten years and Steve Radvak, Jr., a recent U.B.C. graduate mining engineer.

The history of high grade gold production from the property goes back to 1890. There are three shafts, 1,100 ft.deep, 400, and 300 ft., plus over two miles of flooded workings. On surface there is a series of exposures, trenches and pits where high grade gold samples are readily found. Brace and AnSCO have been mapping, sampling, cleaning out some of the old workings and drilling. To date ,27 percussion drill holes and 13 diamond drill holes have been completed. Of the over 8,000 feet of hole drilled ,assays are back on about 3,000feet. At one point ,with two rotary rigs and one diamond drill machine working ,the logging and sampling got away ahead of the samplers and geologists. The work is pretty well caught up now with the two rotary rigs shut down pending assay returns.The diamond drill is now drilling No.14 hole to duplicate the No.19 rotary hole in an effort to obtain a correlation between rotary and diamond drill assays.Mr.Wagner pointed out that the company has been having some trouble with rotary hole assays. Some of the holes show good gold in the pan but none in the assays or little in the pan and good assays. The company is working with the assayer and sampler to improve the results. The twinning of the rotary hole should help considerably. The companies have been using H(NQ) 2 1/4 inch core but have increased to PQ 3 3/4 inch core for a larger more accurate sample.

The native gold occurs in quartz veins which strike north-south and dip to the west. They are associated with a major fault contact between granite and volcanics which has been traced over several miles. The main target is the Mammoth vein which was mined in the Mormon pit, now 30-40 feet wide, 100 feet long and about 40 feet deep and water filled. Off the south end of this pit the structure has been drilled to return good grade values. The zone is 50 to 60 feet wide and contains a series of quartz veins with very high grade gold. The drilling is almost to the stage where tonnage estimates can be made for this open pit potential. The property set up is such that with the warehouse, garage, machine shop and considerable useable equipment on hand ,an operation could get underway cheaply and quickly to open three veins for bulk sampling and to generate a cash flow. There are several other targets on the property where mapping, sampling, geochemical surveying, geophysical surveys are to be completed prior to starting drill testing.

Representatives of a number of major companies have been on the property with one of these companies negotiating toward an exploration agreement.

Assay results to date include a series of surface samples across 1.2 feet which ran 0.88; 3.60 and 19.0 oz.gold per ton and the No.4 rotary hole which returned from 180 to 190 ft a 10 foot section assaying 0.88 oz.gold/t; from 190 to 200 ft. a 10 ft.section assaying 0.755 oz.gold per ton. The most encouraging hole to date is No.7 in the Mammoth zone which returned from surface to 100 ft. 0.2 oz.gold per ton, including 54 to 55 1/2 ft., a 1 1/2 foot section assaying 2.76 oz.gold/t and then 7.5 ft. at 92.5 to 100 ft. assaying 1.96 oz.gold/t.

Some of the old reports on the property are interesting, particularly one by Dr.Allan P.Fawley,P.Eng., dated Jan.1978 for Loredi Resources Ltd. wherein he says that old reports show reserves of 3,000,000 tons grading 0.191 oz.gold/t.He also stated that the possibility of developing an economic open pit mine is excellent.



East Zone

ANSCO RESOURCES (B.C.) LTD.
BRACE RESOURCES LTD
Mammoth Property
Goldfield, Arizona
GEOLOGY
Scale: 1" - 500 feet
Date: 16 March 1984
By: D.R. Morgan, P. En

LITTLE BEAR RESOURCES LTD. (LBR-V)

CONTROL SHIFTING TO BRACE GROUP. 2 - Robert A. Mathews announces the appointment as directors of Little Bear Resources ARIZONA PROPERTIES BEING ACQUIRED Ltd. of John K. Campbell and Russell Dunn. Lois Matthews has resigned from the board. A change of control to Steve Radvak and Lewis Patmore is pending, subject to shareholder and regulatory approval.

Little Bear have granted incentive options to buy a total of 90,000 shares at 80¢ per share to Mr. Steve Radvak a to 50,000 shares, Mr. Campbell 20,000 and Captain Dunn 20,000. William Patmore has been appointed as Properties Manager and granted an employee incentive option to buy 60,000 shares at 80¢ each.

Little Bear have acquired an option to buy a gold property in Arizona. Staking to protect and enlarge the optioned property is in progress. It is planned to undertake a major financing and to arrange partners for development of the Arizona property.

Negotiations are in progress for Little Bear to acquire 5 patented and 21 unpatented claims adjacent to the Brace-Ansco property near Apache Junction, Arizona. It is anticipated that the property will be held by Little Bear - 52%, Brace Resources - 24% and Ansco Resources - 24%.

Little Bear's working capital currently stands at about \$140,000. Documentation is being prepared and assembled preparatory to filing a Statement of Material Facts and to holding a shareholders' meeting on June 28.

CHATWOOD RESOURCES LTD. (CHW-V)

HARDY INTERNATIONAL DEVELOPMENTS INC. (HID-V)

APACHE JUNCTION PLAY ENTERED - Chatwood Resources Ltd., as to 50%, and Hardy International Developments Inc., as to 50%, have completed negotiations to option mineral claims near Apache Junction, Arizona, adjacent to the southern boundary of the mineral claims held by Brace Resources Ltd. and Ansco Resources (B.C.) Ltd. The property has a 200-foot shaft (with hoist in working condition). At the 35-foot level down the shaft, good gold and silver values were reported by the owners.

A geologist is presently evaluating the property.

DRC RESOURCES CORPORATION

STRATA ENERGY CORPORATION (SGC-V)

ARIZONA GOLD PROPERTY - DRC Resources Corporation and Strata Energy Corporation president John H. Kruzick announces AQISITION PROPOSED that negotiations have started for them to acquire a gold-silver property in the Superstition mining district, Marizopa county, Arizona, and to joint venture its exploration.

Mr. Kruzick says the property is a former producer and appears to have the potential of being an open pit mine as compared to the previous underground operation. The shaft and hoist are in working order and the drifts are accessible for resampling to determine the property's potential. Renewed interest in the area has been created by the recently published drill results of Brace Resources Ltd. and Ansco Resources (B.C.) Ltd.

PERRY, KNOX, KAUFMAN, INC.

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TELEPHONE (509) - WA 4-0878

Tucson, Arizona
July 17, 1975

Mr. J.B. Imswiler
Manager, Exploration
Western USA
IMC
Suite 12
390 Freeport Boulevard
Sparks, Nevada 89431

Attached is a brief report pulling together our work at Mammoth-Black Queen. Also attached are a final geologic map with a geochemical survey overlay and additional geologic comments by Colburn.

Subsequent to our July 14 meeting I learned from Ms. Colburn that Apex Exploration personnel had turned her away from Sec. 36 on July 9. She contacted Goldfield's attorney but reported that equipment of Apex was still on the property July 12.

It appears to PKK that the property problems at Goldfield must be resolved before additional work is performed or negotiations undertaken. My letter to Simpson of the 14th reflects that opinion.

This is a property worthy of exploration, under proper terms and without adverse claims problems. We now request a decision as to IMC's interest in the prospect if there is a favorable claims clarification.


A.J. Perry

AJP/sc

PERRY, KNOX, KAUFMAN, INC.

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TELEPHONE (509) 338-1087

Tucson, Arizona
July 14, 1975

Mr. Charles H. Simpson
P. O. Box 11385
Phoenix, Arizona 85017

During April you brought to the attention of this Company certain mineral properties of Goldfield Mines, Inc (Mammoth-Black Queen) which you and Mr. Loy Turberville hold under option from Goldfield.

Subsequent to that time PKK has undertaken substantial geologic investigations of those mineral holdings as well as doing limited geochemical sampling.

Several weeks ago we noted adverse locations in Section 36 by Apex Gold Mining and Exploration of Apache Junction. Later one of our technicians was asked to vacate the premises by persons presumed to be employees of Apex.

On Wednesday, July 9, after being assured that action had been taken to clear the property of the adverse claimants, one of our geologists was asked by an agent of Apex to abandon work in Sec. 36.

Although our initial investigations have not been completed our interest in the remaining potential of the Goldfield properties was sufficient that I had arranged to meet with you this date to discuss terms under which you might be willing to assign your option from Goldfield, subject to the renegotiation of that option.

page 2- Simpson- July 14, 1975

The continued harrasment of our personnel by agents of Apex and the resulting uncertainty as to who owns what makes it necessary that we terminate all further investigations and any discussions pertaining to assignment of option.

We thank you for your cooperation with respect to our limited investigations. We will return all data furnished for our evaluation within the next few days.



A. J. Perry
President
PERRY, KNOX, KAUFMAN, INC.

copy: Mr. Simpson, Spanish Trail Motel, Tucson

Tucson, Arizona
July 17, 1975

To: Mr. J.B. Imswiler
IMC

From: A.J. Perry
Perry, Knox, Kaufman, Inc.

Subject: RECOMMENDATION FOR EXPLORATION - MAMMOTH-BLACK QUEEN AREA (Properties of Goldfield Mines, Inc.), Pinal and Maricopa Counties, Arizona

GENERAL COMMENTS

Robert Blakestad of this Company reported on his initial investigations of the Mammoth-Black Queen properties of Goldfield Mines, Inc., June 3. Nora Colburn developed a preliminary geologic map of the area complete with supplemental comments, June 27. Since that time additional data has been collected regarding past production, possible ore grades, etc. Some geochemical sampling has been done and Ms. Colburn has expanded her geologic coverage.

The purpose of this report is to; 1) briefly summarize the geology, 2) comment on the geochemical results, 3) discuss the mineral potential, 4) review terms under which Mr. Charles Simpson holds an option from Goldfield, and 5) make recommendation for acquisition of exploration rights on the Goldfield lands contingent upon a satisfactory solution to the present conflict with Apex Exploration in Section 36.

GEOLOGIC SUMMARY

Geologic work by Colburn was summarized on her preliminary geologic map and in the explanation submitted June 27. Her additional remarks are appended and a final geologic map accompanies this report.

The Mammoth-Black Queen area is an area of low relief situated between the Superstition Mountains on the east and more suppressed Goldfield Mountains to the west.

A Precambrian granite basement is partially overlain and locally cut by volcanic rocks ranging in composition from basalt to rhyolite. An arkose conglomerate, often similar to the granite in outcrop appearance complicates detailed mapping. Recent thin fluvial deposits obscure outcrop over much of the area.

Ore controls are uncertain but the alignment of the "minimum extent of altered/mineralized zones", Figure 2 of Colburn's first report, suggests the importance of the N-S shearing/veining.

Remobilization and enrichment of precious metals mineralization may have occurred at the intersection of NW trending shears/fractures possibly related to volcanic activity with this major N-S shear zone. While some volcanics may be pre-mineral in age most appear to obscure mineral trends.

The oxidation of former sulfides, presumed to be primarily pyrite, has resulted in the staining red of favorable granite and arkose exposures. This staining provides a straight forward exploration tool in areas of outcrop.

GEOCHEMICAL SURVEY

It was intended that initial geochemical work consist of four E-W lines designed to test the continuity of mineralization along the assumed N-S strike. Two lines designed to test Sec. 36 lands were not completed due to the harrassment of our technician by Apex personnel. The south side of the Mammoth pit was also sampled.

Fourty-six samples of soil, saprolite and rock were collected. Results are plotted on (Figure 2) the acetate overlay to the geologic map. Tabulated results are also attached. Examination will show that although the amounts of gold recorded are low (<0.02 to 0.49 ppm) there is distinct anomalism for a width of at least 60 feet along the south side of the Mammoth pit and for 200 feet along Line 1 in an area situated east of the projection of the Mammoth pits long dimension, in line with an area said to have shown gold values in churn drilling conducted sometime in the past*.

The low geochem values for gold may be accounted for by mechanical leaching in the upper few inches of the soil and saprolite and/or by chemical processes**.

MINERAL POTENTIAL

Accurate records of production from the Mammoth and Black Queen operations are not available. The highly promotional nature of much if not all of the 20th century efforts in the area makes published and ADMR information concerning those operations

* Hugh Nichols, Goldfield Mines, Inc., personal communication

** see USGS Bull 1330 - Geochemistry of Gold in the Weathering Cycle

of questionable worth (eg) (Mining Journal article February 25, 1926, attached). However, there was gold production from both the Mammoth and Black Queen and the following constitutes our estimate of the potential of those mineralized zone(s).

0.17 oz/T

1. Grade - variable, but values mined during the 1950's from the open cut operations of Nichols et al at the Mammoth from surface to 50-60' of depth were \$2.40/T @ \$35 oz/Au with gold to silver ratios of 3:1. This mining was accomplished thru areas gouged of higher grade material by former underground operations then filled with sand and boulders by the flooding of those workings. Therefore, low grade wallrock and waste yielded \$2.40/T in value. It seems fair to assume that grades in old mined and unflooded areas would be twice those of the open cut operations; and possible $2\frac{1}{2}X$ that in unmined extensions of the favorable zone. That is, $\$2.40 \times 2\frac{1}{2} \times 4.3$ (price differential, assuming \$150 gold) = \$25.80 value rock, might be available thru mineable widths.

2. Tonnage - Several references indicate some mining at the Mammoth along at least 1200 feet of strike length. There are other areas of unknown mineral length at the Black Queen and at the Tom Thumb (between the Mammoth and Black Queen). Underground stoped areas were apparently fairly wide. Nichols* reports 60' widths mined near surface during their shovel operations. Our geochemical survey shows a minimum width of mineralized ground of 60' at the south edge of Mammoth pit and greater widths are suggested on Line 1. Assuming a 3500' strike length (total of several separate ore shoots), a width of 100' and extension of ore to a depth of 500' - 14.6 million tons could be developed.

Colburn's "minimum extend of altered/mineralized zones" suggests a much greater potential.

Summary: Assuming 15 million tons of material, value \$25.80/T, mined from underground, in volume, from steeply dipping chutes -- a substantial medium sized operation is envisioned.

TERMS OF SIMPSONS OPTION

Mr. Charles H. Simpson and a Mr. Loy Turbeville have an option to purchase the properties of Goldfield Mines, Inc., which consist of one patented claim (Mammoth Lode) and 15 unpatented lode claims. These lands are outlined on Colburn's Figure 1. Simpson has other claims in the area which are also available.

Principal terms of Simpson's Agreement with Goldfield are:

- (1) 6 months option to purchase for \$200,000

* Hugh Nichols, Goldfield Mines, Inc., personal communication

- (2) option can be extended for 12 months (beyond Sept. 1, 1975) with the payment of \$5000.
- (3) optionee has the right to explore and develop.
- (4) optionee must perform assessment work for the assessment year ending September 1, 1975, on or before July 10, 1975.
- (5) optionee shall supply owners with all exploration information developed in the event of termination
- (6) option is assignable

Because of the actions of the adverse claimants in Section 36 and the cessation of our work on the Mammoth-Black Queen, no terms of agreement were discussed with Mr. Simpson. From his past comments we can presume \$2000-3000 in cash would satisfy his immediate needs. He has indicated that renegotiation is possible with Goldfield.

RECOMMENDATION

If there is favorable clarification of the conflict with Apex an effort should be made to come to terms with Mr. Simpson and commence the exploration of this property.

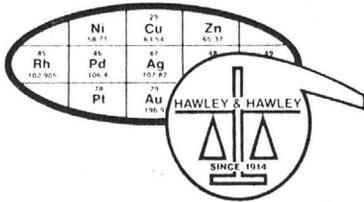


SKYLINE LABS, INC.

Hawley & Hawley, Assayers and Chemists Division
 1700 W. Grant Rd., P.O. Box 50106, Tucson, Arizona 85703
 (602) 622-4836

Charles E. Thompson
 Arizona Registered Assayer No. 9427

William L. Lehmbeck
 Arizona Registered Assayer No. 9425



CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm							
1	MAM-1 .5W-SA	<0.02							
2	1W-SA	0.12							
3	1.5W-S	<0.02							
4	2W-S	<0.02							
5	2.5W-S	<0.02							
6	3W-S	<0.02							
7	4W-S	<0.02							
8	5W-S	<0.02							
9	6W-S	<0.02							
10	0E-SA	<0.02							
11	.5E-SA	<0.02							
12	1E-S	0.05							
13	1.5E-S	0.04							
14	2E-SA	0.12							
15	2.5E-SA	0.43							
16	3E-S	<0.02							
17	4E-S	<0.02							
18	5E-S	<0.02							
19	MAM-1 6E-S	<0.02							
20	MAM-2 .5W-SA	<0.02							
21	1W-S	<0.02							
22	1.5W-S	<0.02							
23	2W-S	<0.02							
24	2.5W-S	<0.02							
25	3W-S	<0.02							
26	3.5W-SA	<0.02							
27	4W-S	<0.02							
28	4.5W-SA	<0.02							
29	1E-SA	<0.02							
30	2E-S	<0.02							
31	3E-S	<0.02							
32	4E-S	<0.02							
33	5E-S	<0.02							
34	6E-S	<0.02							
35	MAM-2 7E-S	<0.02							

TO:
 Perry, Knox, Kaufman, Inc.
 P.O. Box 12754
 Tucson, Arizona 85732

REMARKS:
 Trace analysis
 Page 1 of 2

CERTIFIED BY:
IMC - AZ
MAMMOTH MINE AREA
Apache Junction, AZ.

Attn.: Mr. A. J. Perry

DATE REC'D:
 7/1/75

DATE COMPL.:
 7/9/75

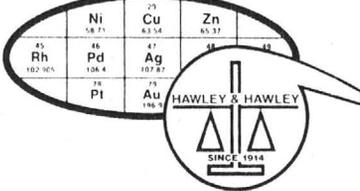
JOB NUMBER:
 751414

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Charles E. Thompson
 Arizona Registered Assayer No. 9427

William L. Lehmbeck
 Arizona Registered Assayer No. 9425



CERTIFICATE OF ANALYSIS

ITEM NO.	SAMPLE IDENTIFICATION	Au ppm								
36	MAM-2 8E-S	<0.02								
37	MAM-2 9E-S	<0.02								
38	MAM-2 10E-S	<0.02								
39	MAM-M 0-10	0.32								
40	10-20	0.49								
41	20-30	0.21								
42	30-40	0.42								
43	40-50	0.27								
44	50-60	0.33								
45	60-70	<0.02								
46	MAM-M 70-80	<0.02								

TO:

REMARKS:
 Trace analysis
 Page 2 of 2

CERTIFIED BY: *[Signature]*

DATE REC'D: 7/1/75	DATE COMPL.: 7/9/75	JOB NUMBER: 751414
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The Young Mines Company



JOURNAL

for FEBRUARY 28, 1926

Tucson, Arizona
July 16, 1975

To: A.J. Perry
From: N.I. Colburn
Subject: Outcrop Map, Mammoth Mine Area, Goldfield (Superstition)
District, Maricopa and Pinal Counties, Arizona

ADDENDUM

SUMMARY

Granitic outcrops, showing some seritization and iron-oxide staining, are found at least a thousand feet to the east and south of the Mammoth claim group. Most of this land lies within the U.S. Lost Dutchman Recreation Area, or is near the Bluebird Mine (Au-quartz).

To the west in sections 1 and 2 (T1N, R8E) some outcrops of arkose-conglomerate exist. By far the most widespread rocks here are the volcanics, consisting of andesite flows, rhyodacite tuff breccias and a variety of feldspar porphyries. There is a consistent NW striking trend within these units.

PURPOSE

This mapping was undertaken to extend and fill-in the previous (June 27, 1975) 1"=500 ft. preliminary map. Between July 9 and 12, three field days were spent in the area. The northern portion (section 36) was not completed because of the presence of "Apex Gold Mining" personnel near the Black Queen.

SUGGESTION

Some correlation seems to exist between gold values and MnOx in the veins or wallrock. (See Geochem overlay). In areas, as line 2, where surface gold values are low (< 0.02 ppm), manganese values could show anomalies related to underlying mineralization.

It is recommended, if work continues in this area, to test Mn geochems for use as an exploration tool.

MINERALIZATION AND ALTERATION

In NW $\frac{1}{4}$, Section 1, just south of the boundary fence (at points 62-63), the arkose-conglomerate unit is cut by a 2 to 3 foot wide, NW trending vein of crystalline calcite with associated iron oxides. The vein is near the contact between the arkose and a tan, pyritic rhyolite.

Parallel, altered and/or brecciated zones spaced 100 to 300 feet apart, occur in the Tertiary volcanics. At point 66, 500 feet east of the calcite vein, 3 to 6 inch wide rhyolite dikes (N40W, 40NE) intrude andesite. On the extension of these dikes (400 feet NW) is a zone in the andesite of brecciation (N35W, 50NE) and diking (N15W, 60NE), delineated by red (Fe-oxide) mottling. Several hundred feet to the southwest, other NW zones of similar red "alteration" occur in the andesite. These zones are not obviously brecciated and appear to be associated with basalt.

An olive green color change of the andesite is also noted, near or parallel to such "red" zones. In NE $\frac{1}{4}$ Section 2, such a zone trends N30W for about 1000 feet.

Iron oxides after pyrite are found in the rhyolitic flow units. The best exposed zone is at point 56, where chalcedony is present and 2-3% pyrite casts are concentrated along a N15W, 50SW fault.

In the volcanics, these NW trends acted as channels for degassing and alteration. There are similar NW zones (green-reduced or red-oxidized) within the central Mammoth-Black Queen mineralized area. So that enrichment probably occurs within the N-S to NE trending granitic-gold zone at intersections with the NW structures.

ROCK TYPES

Precambrian Granite

Due south of the Mammoth pit (1500 feet) are outcrops of "quartz monzonite porphyry". Sericite-clay alteration is present, with only light to moderate Fe-staining. Except for the feldspar phenocrysts, the rock is similar to small outcrops farther north, and weathers to grus, as do the other Precambrian "granites".

Arkose-Conglomerate

To the east this unit seems lacking, except just south of the boundary fence.

To the south the arkose unit may form part of the surface at the Bluebird mine.

Mention has been made of the calcite vein within this unit and a southward extension of this zone contains fragments of "Barnes" type conglomerate.

It is not until section 2 that thick exposures are found. On the east side of the river the unsorted, chaotic nature of the conglomerate is well seen. Large (+5 feet) boulders of granite are here, with the coarsest material and greater percentage of quartzite clasts to the west grading eastward into finer grained arkose.

Exotic fragments include limestone, sandy shale, white quartz, jasper and schist. One possible origin of this chaotic material is landslides off pre-existing ridges.

Volcanics

In section 2, evidence of the flow nature of the andesites is common. Small plug intrusions of basalt have baked some of the nearby tuff into white zeolite zones.

In NW $\frac{1}{4}$ section 1, lithic tuff breccias of some thickness form the ridges. Some of the rhyolitic types show flow bands and contain patches of pyrite casts.

Feldspar porphyry units in this southern part are not the dark gray andesite porphyry found north of the Black Queen. The matrix of these porphyries may be dark red (andesite?) to light gray (dacite?) to cream or white (rhyolite). Quartz phenocrysts are present in addition to feldspar in the more felsic units. Some iron staining occurs but is caused by decomposition of distinctive, euhedral biotite books and not sulfides.

Because of the existence of these biotite-feldspar tuffs, the outcrop of "quartz monzonite porphyry" south of the highway may actually be related to these units.

Alluvium

River alluvium reaches some thickness near the main wash (east and NE of the Mammoth).

A moderately indurated conglomerate with clay matrix, in the recreation area to the east, may be an old river terrace.

Nora Colburn



INTERNATIONAL MINERALS & CHEMICAL CORPORATION
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PERRY, KNOX, KAUFMAN, INC.

MINERAL EXPLORATION AND DEVELOPMENT

Tucson, Arizona
July 8, 1975

Mr. J.B. Imswiler
Manager of Exploration
Western USA
IMC
Suite 12
390 Freeport Boulevard
Sparks, Nevada 89431

Attached is Nora Colburn's preliminary map, rock descriptions and thoughts as to mineral controls. GC data on two lines will be available tomorrow. I will then report in full, with recommendation. We can discuss Monday -- but this will give you a start.


A.J. Perry

AJP/sc

attach

June 27, 1975

To: A.J. Perry
From: N. Colburn
Subject: Outcrop Map, Mammoth Mine Area, Goldfield
(Superstition) District, Maricopa and Pinal Counties,
Arizona

Summary

It appears that much of the alteration (iron oxides and sericite) is associated with the Tertiary volcanic activity within the area. Locally, this activity was mainly flows off the more active areas to the east (Superstition Mountains), north and west, and some subsidiary or parasitic cones.

Formation of the gold deposits, associated with N20E to N20W veins and breccias of manganese oxides, calcite and quartz, also appears to be Tertiary(?). This mineralization age, however, may be a Tertiary reconcentration of gold, previously associated with the Precambrian granite. The granite does act as the main host for the veins.

In some places the mineralized veins seem to intrude an arkose-conglomerate. This rock has a very similar appearance to the granite, and is derived from it by one of possibly three methods.

As can be seen on the accompanying maps, the host granite is fairly continuous, although covered by fluvial deposits or Tertiary volcanics.

Small rhyolitic sills and basaltic intrusives occur in the volcanics, and also in the granite. A distinctive "biotite quartz monzonite" does intrude the granite. In the area mapped, this Tertiary(?) dike system seems not to interrupt the mineralized zones.

A post mineralization disruption has occurred in the form of E-W or N60W fracturing. An andesite dike series, in part follows these trends, but is itself cut off. Some local enrichment seems to form at the edges of such dikes. These andesitic dikes intrude both the granite and the volcanics.

Procedure

Three field days were spent mapping rock outcrops, on 1" = 500' scale aerial photographs.

Mineralized Areas

Using a minimal estimate of size, several zones of alteration and mineralization have been outlined on Figure 2. Based on the pattern of zones (mineralized veins), four tentative models are proposed (Figure 3). These models are geometric only, but geochemical sampling results may give support to one of them. The pattern of altered zones and veins may indicate that:

- 1) mineralization is scattered throughout the area, with higher values in a central N-S shear(s) or vein(s);
- 2) there are intersecting N15E and N45E trends, both mineralized;
- 3) there are two parallel mineralized vein systems trending N20E; and
- 4) mineralization occurs at the intersection of N45W and N15E trends, which are separated into N and S blocks by a nearly E-W trending fault(s).

Extension to depth of the mineralized veins is not certain. The main Mammoth shaft is said to have reached 1000 feet in depth, and was worked on this level. The early workings at the Mammoth (Mormon Stope) were within 150 feet of the surface, and the open pit seems to have reached a depth of 60 feet(?). Making the assumption that the deepest shaft was inclined at -45° mineralization to a depth of 500 feet is assured.

Mineralization depths near the Black Queen are not known.

Alteration

The pre-volcanic rocks all show a fairly high degree of oxidation. The alluvial units derived from these rocks are also highly oxidized, so that the whole area tends to have brown or red (FeOx-lim, hem) coloration.

In mapping, only those areas showing intense FeOx staining, were noted. This was further limited in outcrop areas, to zones showing sericitic alteration. In these same outcrops, varying amounts of MnOx occur in quartz-calcite veins or veinlets.

In some exposures west or southwest of the Black Queen MnOx(?) staining and/or sericitization is intense enough to mask the rock type.

Calcite veins themselves are not indicative of mineralization. This is because calcite is a common weathering product of volcanics. The increase of near-surface vein structures, and caliche deposits to the west and north is due to the increase of volcanic rock outcrops.

Mention has been made of the widespread red oxidation color. In a number of outcrops, the usually "red" rocks are "green". In some cases (as at outcrop 21, located in the wash) the granite, in this case, shows patchy zones of green, with red zones bordering fractures or veinlets. The "green" or gray color occurs also in the arkosic rocks, and is definitely found on contact zones below the younger volcanics. The green color (reduced FeOx) can be due to 1) time spent in "alkaline" water, as in bottom of streams, and/or 2) CO₂ added to the local environment from degassing or weathering of the volcanics.

Special note (significance uncertain): The FeOx and alteration type may change within the granitic rocks. On the south and west, hematite or red-brown limonite is more common. On the east, and at the Black Queen outcrop itself, there seems to be a granitic phase typically with yellow (limonite?) coloration.

Rock Types

Precambrian Granite:

There are actually several granitic phases present, but all seem to have "pink" feldspar laths. Generally these rocks can be divided into NE and SW zones. In the SW part of area, the granite is quite coarse grained, in places porphyritic, with zones of definite pegmatite. A "bronze" biotite can be distinguished. In the NE, the granite is more equigranular and finer grained. The "yellow" phase occurs in this area.

Intrusive into these "granites", are dikes of aplite, "muscovite granite" and "biotite quartz monzonite", the last two types may be quite young (Tertiary?) and could be related to diking within the volcanics.

The Precambrian age is assigned, because of known Precambrian granite and metamorphics in the Usery Mountains, Four Peaks and Roosevelt Dam areas.

In the Mammoth area there are no outcrops of granite. However mention is made in the Goldfield Mines, Inc. report of a sample of gouge and porphyry, from the 7th level. This may mean the mined zone is within the porphyritic granite phase.

Arkose-Conglomerate:

As with the "granite", this sedimentary unit is actually three "phases", each type having formed by a different method.

1) An arkose, composed of granitic clasts only, was probably derived directly from the granite and is a true regolith. Similarity to the "granite" is striking and may actually be a "recent" weathering surface on the granite. (Age: Precambrian to Recent).

2) A more widespread arkosic conglomerate, composed predominantly of granite and quartzite clasts, with common red rhyolite fragments and some jasper; exotics include limestone, limey shale (Paleozoic?) and patches of white vein quartz.

As a result of recent weathering, near-outcrops of this unit, are identified by a surface lag deposit of quartzite and rhyolite fragments.

This unit appears to be Tertiary(?) in age, but prior to the major portion of volcanic activity. It is an alluvial(?) reworking of earlier units. One such unit is partially preserved near the Mammoth Pit, and is a quartzite pebble conglomerate similar in appearance and lithology to those in the Younger Precambrian Apache Group. Exotic limestone clasts seem to be Paleozoic in "appearance". Presently the nearest such outcrops are 20 miles to the NE or SE, but outcrops could have previously existed in the Goldfield's area. The flow-banded, crystalline, red rhyolite clasts are very similar to the Older Precambrian "Red Rock Rhyolite". Jasper pebbles are also characteristic of some Older Precambrian units, as those exposed at Four Peaks in the Mazatzals. However, some of the red rhyolite fragments could have been derived from the nearby Superstitions.

Source of this material probably is local (within 5 miles) based on the presence of the earlier clastic unit. However the southern edge of the Mazatzal Mountains 10 miles to the NE, is the nearest source at the present time. (Age: Younger Precambrian to Recent).

3) Another kind of reworking occurred during, or after volcanic activity, so that arkosic conglomerate material became enclosed in a volcanic matrix. This unit is not well defined, and only scattered outcrops exist. Included are zones of highly unsorted material which may represent lahar-mudflow deposition. On the edge of the western volcanics, there are some indications that this type may be an oxidized phase of a distal edge of a lithic tuff breccia flow.

Volcanics:

These Tertiary rocks onlap the granite and arkose-conglomerate from the north and west. They thicken rapidly to the north. Surface lag deposits on the west may indicate underlying volcanics, but perhaps as in the Mammoth area, they may be an erosional veneer on "granitic" units.

Most widespread of the volcanics are a variety of flows, from rhyodacite lithic breccias to andesite feldspar porphyrys. In the west portion, so far mapped, a rhyolitic pyroclastic(?) tuff alternates with or is intruded by massive to vesicular andesite(?). Intrusive into these units, and nearby granite and/or arkose, are basalt plugs. Remnants of associated cinder deposits are found in the west wash.

This basalt intrudes, and intensely bleaches and alters granite and/or arkose at 42 and 43.

Relationship of the basalt event to the previously mentioned andesite dikes is uncertain. The andesite may be younger. (Age: Tertiary).

Alluvium:

Recent reworking of the oxidized basement, results in pervasive red oxidation color of the present-day alluvium. It is distinguished from the Tertiary units by 1) being nearly flat lying, and 2) containing volcanic fragments, as say andesite porphyry. Garbage-filled pit at 7 exposes a crosscut of such river gravel.

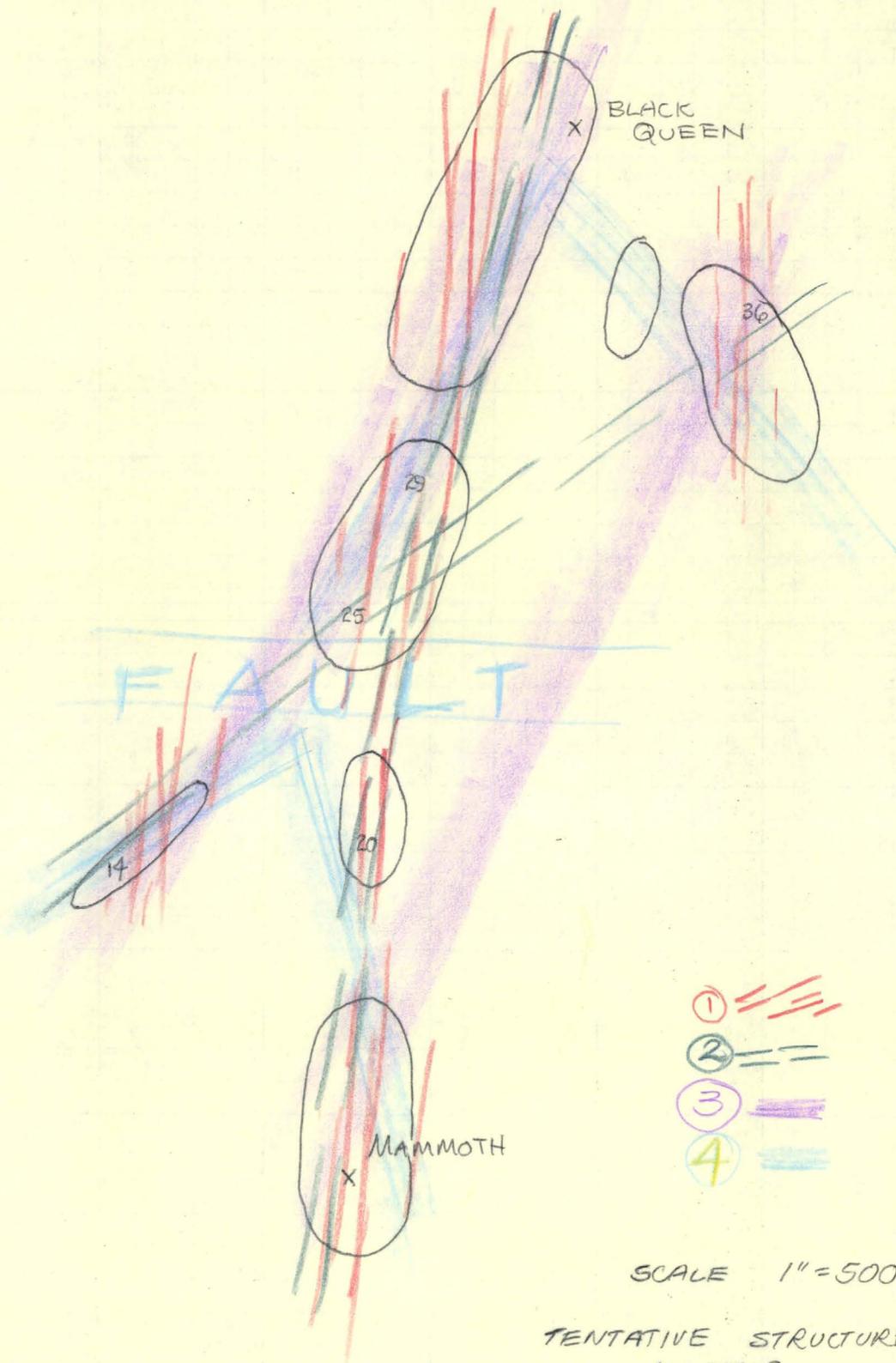


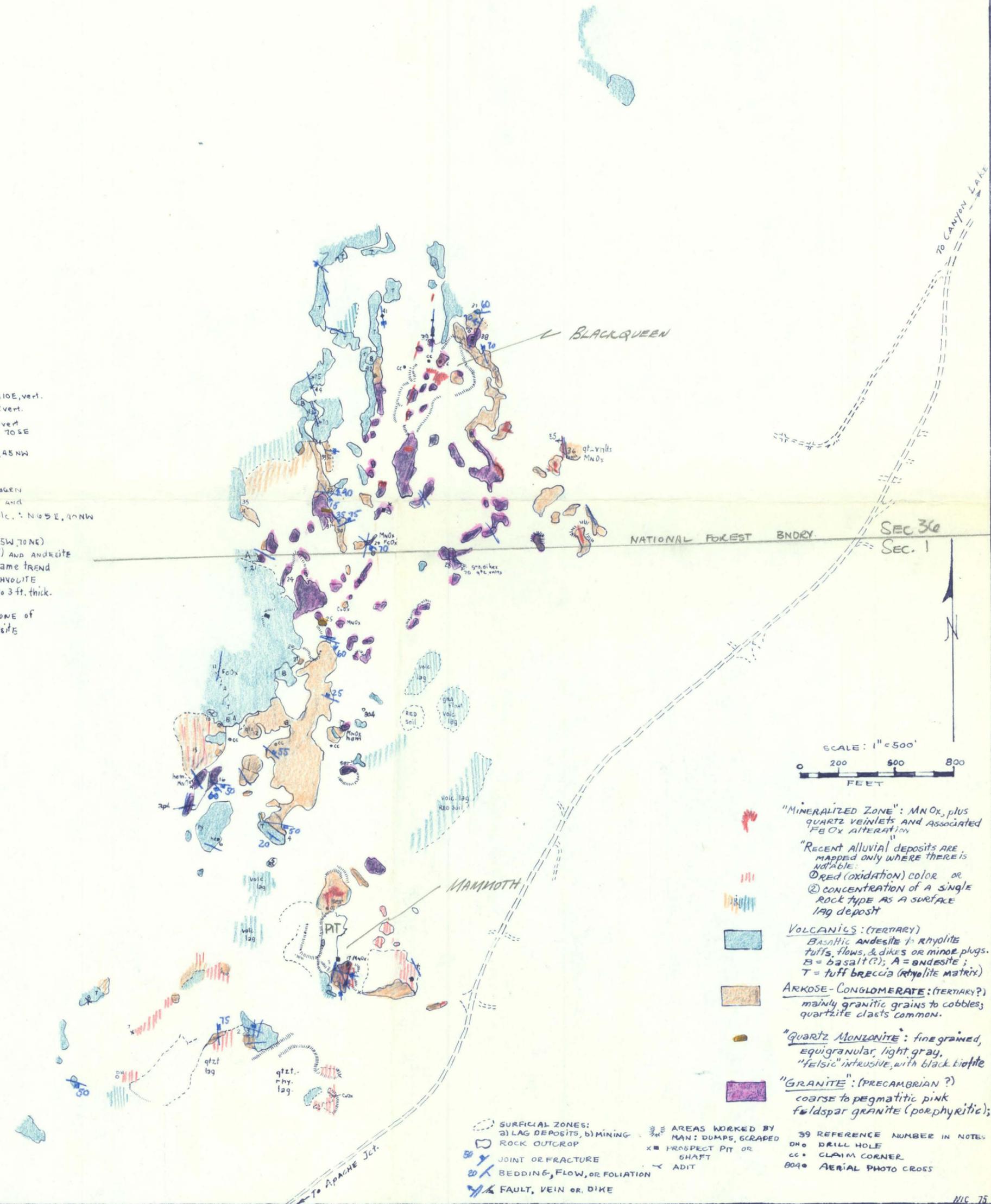
FIGURE 3



INTERNATIONAL MINERALS & CHEMICAL CORPORATION
390 FREEPORT BLVD., SUITE 12, SPARKS, NEVADA 89431

PRELIMINARY OUTCROP MAP
MAMMOTH - BLACK QUEEN MINE AREA

- 31. GRANITE - ARKOSE CONTACT: N10E, vert.
Arkose bedding: N15W, ?vert.
(3") joints in gra: N10E, vert
N10W, 70SE
fn. grn. granite
(upite) dike: N 85E, 45NW
peg. pod.:
- 34. irregular contact between
top of "arkose - cg." and
overlying m. gray. volc.: N 45E, 40NW
- 43. Andesite - basalt dikes (N25W, 70NE)
into arkose cg-tuff(?) and andesite
flows(?). Also with same trend
into arkose cg(?) a RHVOLITE
SILL (LENS) - 6 inches to 3ft. thick.
- 44. Prospect pit in "bake" zone of
RHVOLITE dike in ANDESITE
tuff(?) N20W, 75NE.



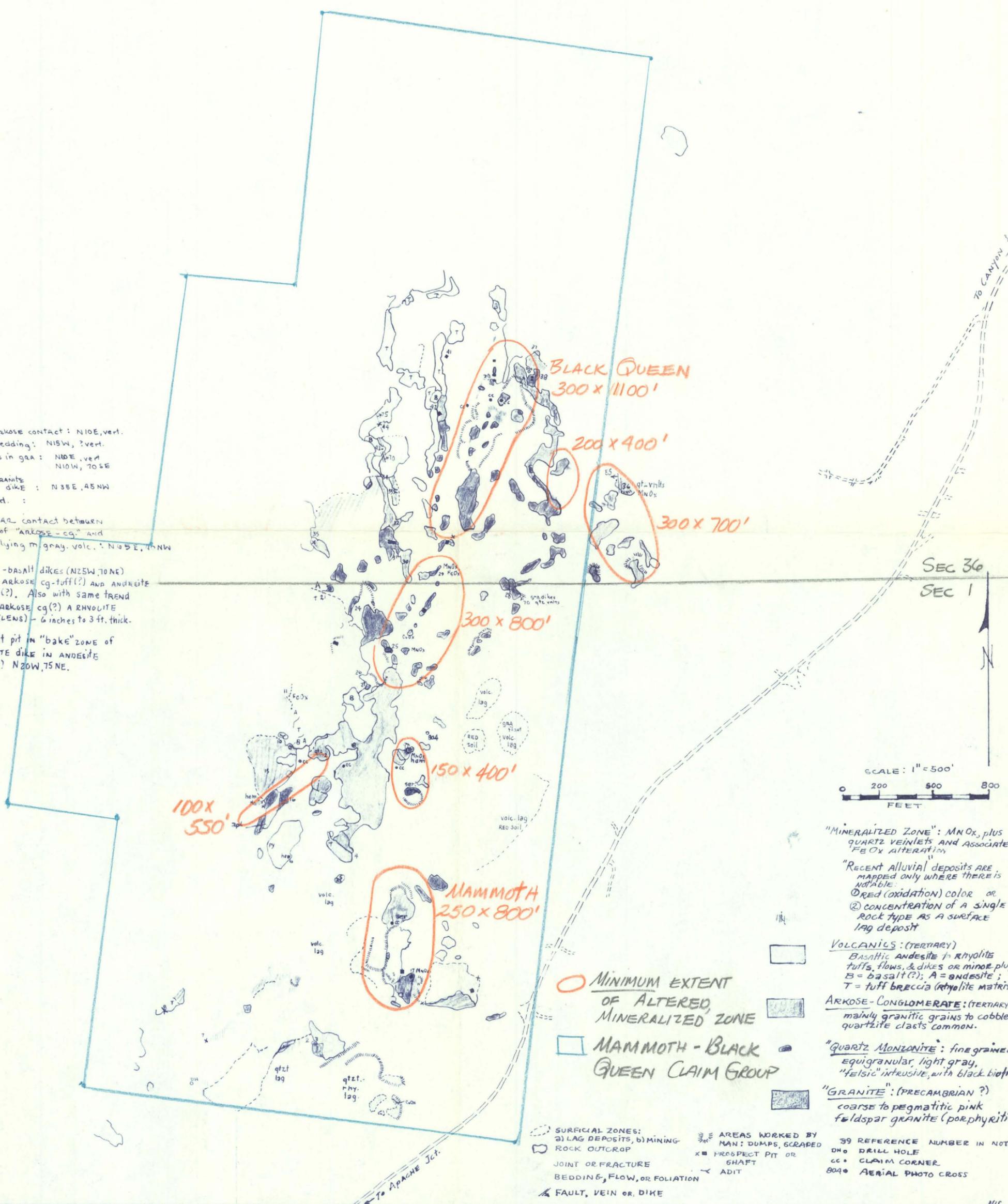
- "MINERALIZED ZONE": MnOx, plus
quartz veinlets and associated
FeOx alteration
- "RECENT ALLUVIAL DEPOSITS ARE
MAPPED ONLY WHERE THERE IS
NOTABLE:
① ORE (oxidation) color or
② CONCENTRATION OF A SINGLE
ROCK TYPE AS A SURFACE
LAG DEPOSIT
- VOLCANICS: (TERTIARY)**
Basaltic andesite to rhyolite
tuffs, flows, & dikes or minor plugs.
B = basalt(?); A = andesite;
T = tuff breccia (rhyolite matrix)
- ARKOSE-CONGLOMERATE: (TERTIARY?)**
mainly granitic grains to cobbles;
quartzite clasts common.
- "QUARTZ MONZONITE": fine grained,
equigranular, light gray,
"felsic" intrusive, with black biotite
- "GRANITE": (PRECAMBRIAN?)
coarse to pegmatitic pink
feldspar granite (porphyritic);
- 39 REFERENCE NUMBER IN NOTES
- OH = DRILL HOLE
- CC = CLAIM CORNER
- 804 = AERIAL PHOTO CROSS

- SURFICIAL ZONES:
a) LAG DEPOSITS, b) MINING
ROCK OUTCROP
- JOINT OR FRACTURE
- BEDDING, FLOW, OR FOLIATION
- FAULT, VEIN OR DIKE
- AREAS WORKED BY
MAN: DUMPS, SCRAPPED
- PROSPECT PIT OR
SHAFT
- ADIT

FIGURE 1

PRELIMINARY
 OUTLINE OF OUTCROP AREAS
 OF POSSIBLE ECONOMIC INTEREST

31. granite-arkose contact: N10E, vert.
 arkose bedding: N15W, 3 vert.
 (3") joints in gra: N10E, vert
 N10W, 70SE
 fn. gm. granite
 (aplite) dike: N35E, 45NW
 peg. pod.:
34. irregular contact between
 top of "arkose-cg." and
 overlying m. gray. volc.: N10E, 15NW
43. Andesite-basalt dikes (N25W, 70NE)
 into arkose cg-tuff(?) and andesite
 flows(?). Also with same trend
 into arkose cg(?) A RHYOLITE
 SILL (LENS) - 6 inches to 3 ft. thick.
44. Prospect pit in "bake" zone of
 RHYOLITE dike in ANDESITE
 tuff(?) N20W, 75NE.



○ MINIMUM EXTENT
 OF ALTERED,
 MINERALIZED ZONE

□ MAMMOTH - BLACK
 QUEEN CLAIM GROUP

- SCALE: 1" = 500'
 0 200 500 800
 FEET
- "MINERALIZED ZONE": MnOx, plus
 QUARTZ VEINLETS AND ASSOCIATED
 FeOx ALTERATION
- "RECENT ALLUVIAL DEPOSITS ARE
 MAPPED ONLY WHERE THERE IS
 NOTABLE:
 ① RED (OXIDATION) COLOR OR
 ② CONCENTRATION OF A SINGLE
 ROCK TYPE AS A SURFACE
 LAG DEPOSIT
- VOLCANICS: (TERTIARY)
 BASALTIC ANDESITE + RHYOLITE
 TUFFS, FLOWS, & DIKES OR MINOR PLUGS.
 B = basalt(?); A = andesite;
 T = tuff breccia (rhyolite matrix)
- ARKOSE-CONGLOMERATE: (TERTIARY?)
 mainly granitic grains to cobbles;
 quartzite clasts common.
- "QUARTZ MONZONITE": fine grained,
 equigranular, light gray,
 "felsic" intrusive, with black biotite
- "GRANITE": (PRECAMBRIAN?)
 coarse to pegmatitic pink
 feldspar granite (porphyritic);
- 59 REFERENCE NUMBER IN NOTES
 DM = DRILL HOLE
 CC = CLAIM CORNER
 804 = AERIAL PHOTO CROSS

- SURFICIAL ZONES:
 a) LAG DEPOSITS, b) MINING
 ROCK OUTCROP
- JOINT OR FRACTURE
 BEDDING, FLOW, OR FOLIATION
- FAULT, VEIN OR DIKE
- AREAS WORKED BY
 MAN: DUMPS, SCRAPPED
- PROSPECT PIT OR
 SHAFT
- ADIT

FIGURE 2

SEC. SEC.
35 36

SEC. SEC.
2 1

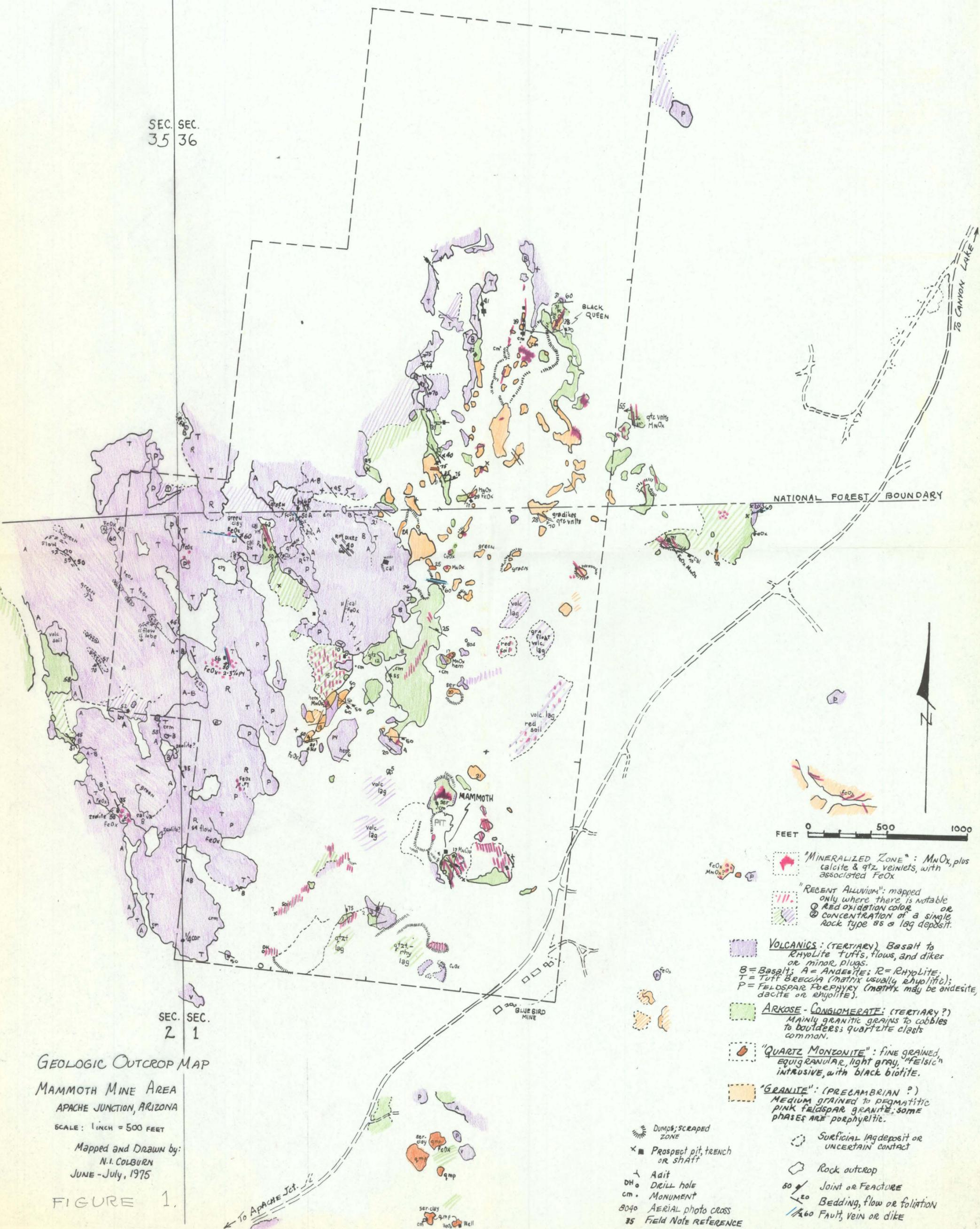
GEOLOGIC OUTCROP MAP

MAMMOTH MINE AREA
APACHE JUNCTION, ARIZONA

SCALE: 1 INCH = 500 FEET

Mapped and Drawn by:
N.I. COLBURN
JUNE - JULY, 1975

FIGURE 1.



FEET 0 500 1000

- "MINERALIZED ZONE": MnOx, plus calcite & qtz veinlets, with associated FeOx
- "RECENT ALLUVIUM": mapped only where there is notable
 - ① Red oxidation color
 - or
 - ② concentration of a single rock type as a lag deposit.
- VOLCANICS: (TERTIARY), Basalt to Rhyolite tuffs, flows, and dikes or minor plugs.
B = Basalt; A = Andesite; R = Rhyolite;
T = Tuff Breccia (matrix usually rhyolitic);
P = Feldspar Porphyry (matrix may be andesite, dacite or rhyolite).
- ARKOSE-CONGLOMERATE: (TERTIARY?)
Mainly granitic grains to cobbles to boulders; quartzite clasts common.
- "QUARTZ MONZONITE": fine grained, equigranular, light gray, "felsic" intrusive, with black biotite.
- "GRANITE": (PRECAMBRIAN?)
Medium grained to pegmatitic pink feldspar granite, some phases are porphyritic.
- DUMPS; SCRAPED ZONE
- Prospect pit, trench or shaft
- Airt
- Drill hole
- Monument
- Aerial photo cross
- Field Note Reference
- Surficial lag deposit or uncertain contact
- Rock outcrop
- Joint or fracture
- Bedding, flow or foliation
- Fault, vein or dike

SEC. SEC.
35 36

SEC. SEC.
2 1

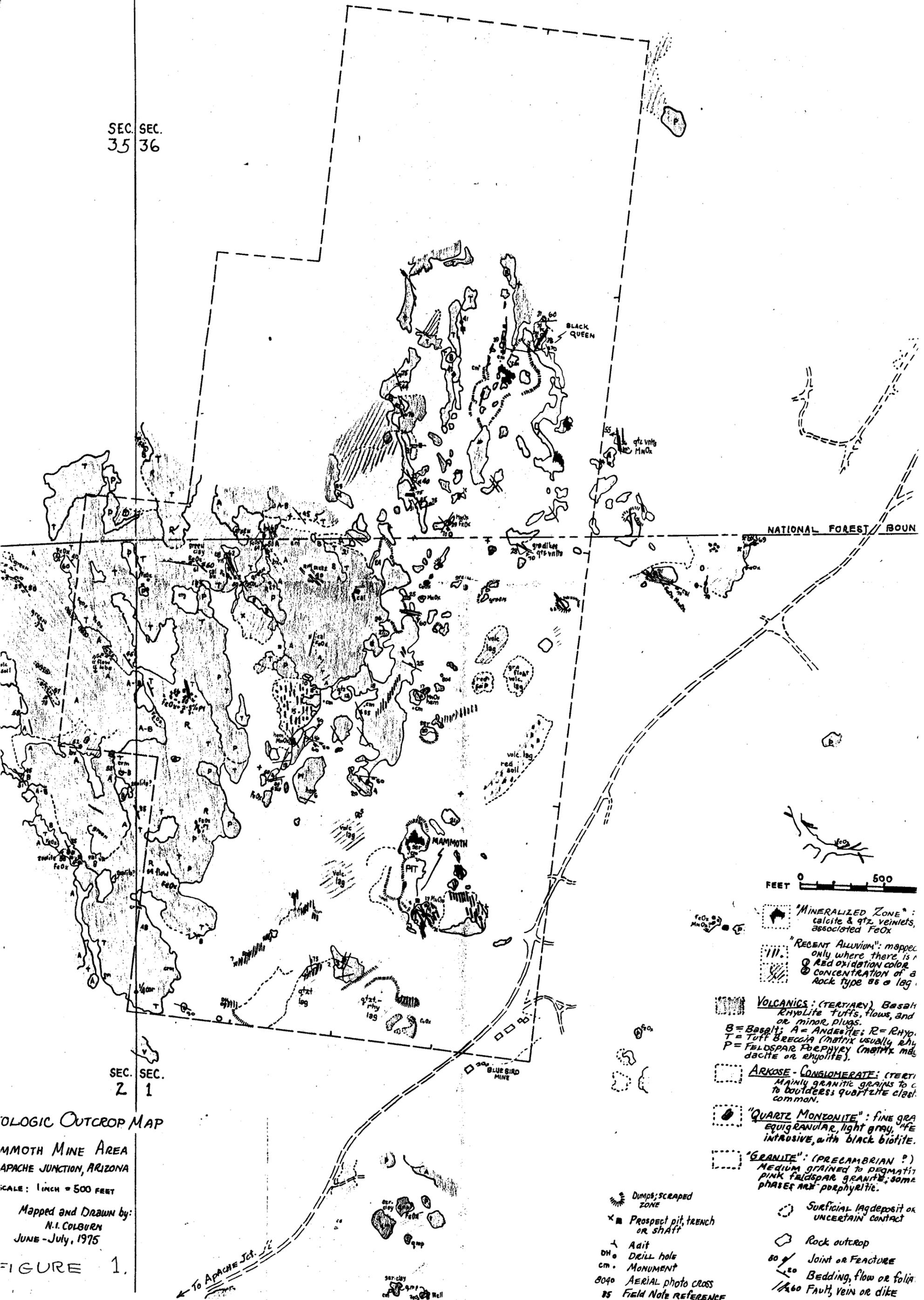
GEOLOGIC OUTCROP MAP

MAMMOTH MINE AREA
APACHE JUNCTION, ARIZONA

SCALE: 1 INCH = 500 FEET

Mapped and Drawn by:
N.I. COLBURN
JUNE - JULY, 1975

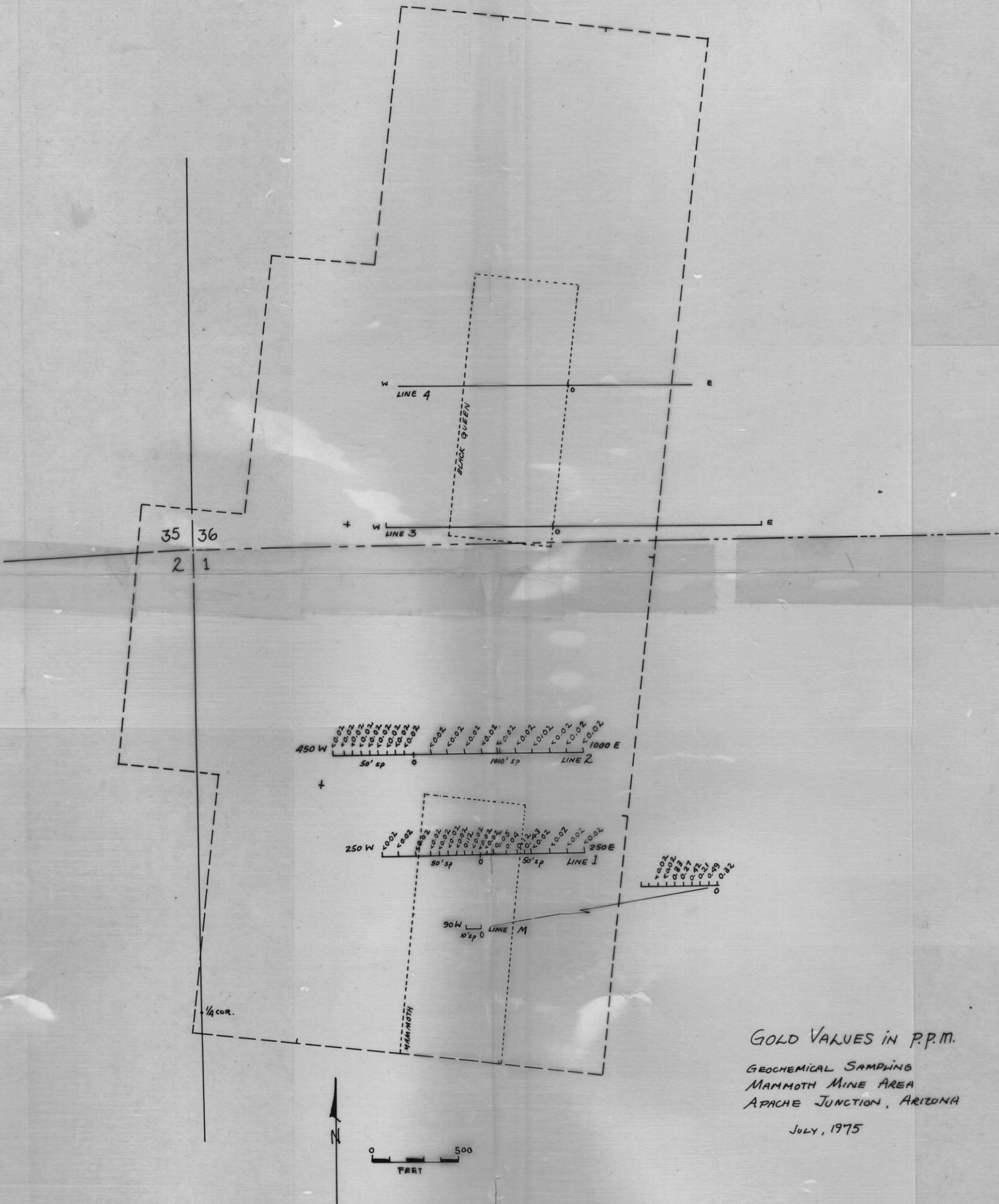
FIGURE 1.



NATIONAL FOREST BOUNDARY

FEET 0 500

- "MINERALIZED ZONE": calcite & qtz veinlets, associated FeOx
- "RECENT ALLUVIUM": mapped only where there is a red oxidation color, concentration of a rock type or lag
- VOLCANICS: (TERTIARY) Basalt, Rhyolite tuffs, flows, and or minor plugs.
 B = Basalt; A = Andesite; R = Rhyolite
 T = Tuff Breccia (matrix usually rhyolite)
 P = FELDSPAR PORPHYRY (matrix may be dacite or rhyolite)
- "ARKOSE CONGLOMERATE": (TERTIARY) MAINLY GRANITIC GRAINS TO CLASTIC TO BOULDER-SIZED QUARTZITE CLASTIC COMMON.
- "QUARTZ MONZONITE": FINE GRAINED, EQUIGRANULAR, LIGHT GRAY, INTRUSIVE, WITH BLACK BIOTITE.
- "GRANITE": (PRECAMBRIAN?) MEDIUM GRAINED TO PEGMATITIC PINK FELDSPAR GRANITE, SOME PHASES ARE PORPHYRYTIC.
- DUMPS; SCRAPED ZONE
- Prospect pit, trench or shaft
- Adit
- DRILL HOLE
- MONUMENT
- 8040 AERIAL PHOTO CROSS
- 85 FIELD NOTE REFERENCE
- Surficial lag deposit or uncertain contact
- Rock outcrop
- Joint or Fracture
- Bedding, flow or foliation
- Fault, vein or dike



GOLD VALUES IN P.P.M.
 GEOCHEMICAL SAMPLING
 MAMMOTH MINE AREA
 APACHE JUNCTION, ARIZONA
 JULY, 1975