

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

**Mineral investigation of the Superstition Wilderness and  
Contiguous Rare II Further Planning Areas, Gila, Maricopa,  
and Pinal Counties, Arizona**

U.S. Bureau of Mines Mineral Land Assessment  
MLA 136-82  
1982

By  
Jinks, J.E.

This open file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the U.S. Geological Survey. The report is preliminary and has not been edited or reviewed for conformity with the U.S. Bureau of Mines editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

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MINERAL INVESTIGATION OF THE SUPERSTITION WILDERNESS AND CONTIGUOUS RARE II  
FURTHER PLANNING AREAS, GILA, MARICOPA, AND PINAL COUNTIES, ARIZONA

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Jimmie E. Jinks

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## STUDIES RELATED TO WILDERNESS

Under the provisions of the Wilderness Act (Public Law 88-577, September 3, 1964) and the Joint Conference Report on Senate Bill 4, 88th Congress, the U.S. Geological Survey and the U.S. Bureau of Mines have been conducting mineral surveys of wilderness and primitive areas. Areas officially designated as "wilderness," "wild," or "canoe" when the act was passed were incorporated into the National Wilderness Preservation System, and some of them are presently being studied. The act provided that areas under consideration for wilderness designation should be studied for suitability for incorporation into the Wilderness System. The mineral surveys constitute one aspect of the suitability studies. The act directs that the results of such surveys are to be made available to the public and be submitted to the President and the Congress. This report discusses the results of a mineral survey of the Superstition Wilderness and contiguous RARE II Further Planning Areas, Tonto National Forest, Gila, Maricopa, and Pinal Counties, Arizona. The area was established as a wilderness by administrative discretion by the Chief of Forest Service in February 1939. It was ratified by the Wilderness Act (Public Law 88-577, September 3, 1964).

## CONTENTS

	Page
Introduction.....	1
Present investigation.....	1
Lost Dutchman gold mine legend.....	2
Mineralized areas.....	3
Mining history and production.....	3
Mining claims and mineral leases.....	3
Sampling and analytical methods.....	4
Local prospect areas.....	5
JF area.....	5
Peralta area.....	16
Dacite Cliffs Mine.....	18
Other Peralta area prospects.....	21
Palmer Mine.....	21
Kennedy area.....	22
Other prospect workings.....	23
Miscellaneous minerals.....	23
Conclusions.....	24
References.....	25

CONTENTS--Continued

Page

ILLUSTRATIONS

Plate 1.	Mines and prospects map of the Superstition Wilderness and Contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona..	at back
Figure 1.	JF area.....	15
Figure 2.	Peralta area.....	17
Figure 3.	Dacite Cliffs Mine.....	19

TABLES

Table 1.	Results of analysis of samples from the Superstition Wilderness, Gila, Maricopa, and Pinal Counties, Arizona.....	6
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By Jimmie E. Jinks, U.S. Bureau of Mines

INTRODUCTION

The Superstition Wilderness, containing approximately 124,140 acres, is located in central Arizona in Maricopa, Pinal, and Gila Counties (pl. 1). The Wilderness is almost completely surrounded by the Tonto National Forest except along the southwest border where it abuts on state and private lands. Seven contiguous areas, containing 20,509 acres, have been proposed as additions to the Wilderness and are included in this study.

Altitudes in the Superstition Wilderness range from 1,800 ft along La Barge Creek near the northwest corner to 6,265 ft on Mound Mountain in the southeast. Altitudes in the proposed additions fall within the same range except for the northwest addition which drops below 1,700 ft along La Barge Creek and First Water Creek.

The Superstition Wilderness is accessible by approximately 140 miles of trails. The trail heads most frequently used by recreationists are at Peralta Canyon in the southwest and First Water Ranch in the northwest (Sheridan, 1971). The western portion of the Wilderness, the reputed locale of the Lost Dutchman Gold Mine, has more trails and receives more visits than the eastern portion.

Treasure hunting, prospecting, and mining within the Superstition Wilderness are subject to the terms and conditions set forth in the Wilderness Act, and the rules and regulations promulgated by the U.S. Forest Service.

Present investigation

In conjunction with studies conducted by the U.S. Geological Survey, the U.S. Bureau of Mines conducted a mineral survey of the Superstition Wilderness and Contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal

Counties, Arizona. Field work for the present investigation of the Superstition Wilderness began in October 1973, continued into March 1974, was resumed in late September, and continued into December. During 1973 and 1974, field work was conducted by Frank E. Williams and Henry C. Meeves. Additional field work was done in October and December 1976 and January 1977 by Jimmie E. Jinks, assisted by Louis W. Hamm and Lynn S. Griffiths in 1976, and J. A. Tony Fallin in 1977.

Bureau personnel researched mining claim and mineral lease records, examined mining claims, and mapped and sampled mine workings and prospects.

#### Lost Dutchman gold mine legend

The portion of the Superstition Mountains situated at the west end of the Superstition Wilderness has long been considered the most likely location of the legendary Lost Dutchman Gold Mine (Blair, 1975).

Weaver's Needle in the NW1/4 sec. 18, T. 1 N., R. 10 E. is often thought to be one of the key landmarks for finding the lost mine. Jacob Waltz, the Dutchman of the legend, died in Phoenix in 1891. Since then, treasure hunters in search for the lost mine have dug hundreds of holes in sight of Weaver's Needle. The sites of many of the pits, gopher holes, shafts, and tunnels were selected on the basis of lost-treasure maps or psychic phenomena. Bureau of Mines personnel sampled and mapped some of the lost treasure diggings during the present survey. Most workings are in unconsolidated, nonstratified surface material or show no evidence of alteration, mineralization, or other geologic indication of mineral deposition. But despite these odds, people continue to search for the Lost Dutchman Gold Mine and other legendary lost mines and treasures within the Superstition Mountains.

## MINERALIZED AREAS

### Mining history and production

According to J. B. Tenney (Wilson and others, 1967), Spanish and Mexican miners in Arizona, prior to the acquisition of the territory by the United States, mined a little silver but no appreciable gold. Tenney comments that, except for some prospecting and mining near Tubac and Tucson prior to the Civil War and some prospecting and mining of rich gold placers in the central part of the state during the Civil War, little prospecting and mining were done in Arizona before the establishment of peace with the Indians about 1872. The silver deposits of Silver King, Globe, and Superior, east and south of the Superstition study area, were discovered about 1874; presumably, the Superstition study area was prospected at the same time or shortly thereafter.

The Goldfield Mine, about 2 mi west of the study area (pl. 1), is reported to have been worked during the early 1890's (Wilson and others 1967). At about the same time, initial work at the Palmer Mine, located inside the proposed western addition to the Superstition Wilderness, was begun. The Palmer Mine has produced gold. The asbestos and iron prospects outside the southeast boundary of the Wilderness have no recorded production. The adits in upper Rogers Canyon and the workings in upper Whetrock Canyon may have produced silver but there is no official record of such production.

During the time of the field investigations, there were no producing mines within the Superstition Wilderness or the proposed additions.

### Mining claims and mineral leases

Bureau of Mines personnel searched Federal public land records and county courthouse records for information on mining claims and mineral leases within

the Superstition study area in 1973. Public land records of the U.S. Bureau of Land Management at the Arizona State Office in Phoenix showed no patented mining claims and no mineral leases, past or present, within the study area. Notices of location of mining claims and affidavits of annual labor on file at the Pinal County Courthouse in Florence and the Maricopa County Courthouse in Phoenix indicate continuing low-level mineral activity in the study area. A search of the mining records of Gila County at Globe revealed few notices of location for claims in or adjacent to the study area.

Most of the mining claims filed over the years have not been maintained by the filing of affidavits of annual labor or assessment work. Some of the mining claim notices refer to lost mines or lost treasures, and many more notices have names which suggest that the claimant was primarily interested in legendary mines. Scattered older mining claims in and near the southeast corner of the Wilderness were staked on showings of asbestos and iron.

Blocks of mining claims held by major mining companies near the Superstition Wilderness include claims connected with the Pinto Valley Mine east of the Wilderness and claims connected with porphyry copper exploration southeast of the Wilderness between Miami and Superior. The boundaries of the blocks of mining claims extend roughly along the west side of Pinto Creek Valley and along Haunted Canyon.

#### Sampling and analytical methods

Chip samples were taken across mineralized, altered, and sheared zones, and across country rock in accessible workings. But, many workings visited during the present survey were inaccessible and could not be sampled. Where a mine dump was associated with the inaccessible working, a sample was taken of each rock type exposed on the dump at an appropriate grid spacing. If

altered or mineralized fragments were present on the dump or near the working, specimen samples were taken of such material. But because the origin of these samples is uncertain, their significance cannot be determined.

All samples were fire assayed for gold and silver and analyzed spectrographically for copper, lead, zinc, tungsten, and chromium. Samples taken in zones of visible copper mineralization which assayed 0.3 percent copper or less spectrographically and which showed trace amounts or less of other metals were not analyzed further. Where the spectrographic analyses indicated lead or zinc values greater than 1 percent, the samples were analyzed by atomic absorption. The results of the analyses are shown in table 1. Holes dug by treasure hunters, were not sampled. Most of these treasure holes lie in the western part of the study area.

#### Local prospect areas

Prospect workings containing anomalous amounts of metals were found along the southern border within and adjacent to the Wilderness, inside the proposed western addition, and at the southeastern corner of the Superstition Wilderness (pl. 1).

Copper, silver, lead, and zinc are found along the southern border in the vicinity of the JF Ranch and Peralta Canyon. Gold and copper occur at the Palmer Mine, which is inside the proposed western addition to the Wilderness. Asbestos and iron are present near the old Kennedy Ranch at the southeastern corner of the Wilderness.

#### JF area

The JF area (fig. 1) is named after the JF Ranch whose buildings and windmill are located in Fraser Canyon in the protracted SE1/4 sec. 21, T. 1 N., R. 11 E. (unsurveyed, Protraction no. 61). The JF Ranch covers the southwestern

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona

[Gold and silver determined by fire assay; values reported in oz/ton. Copper, lead, zinc, and tungsten determined by chemical analysis; values reported in percent. Spectrographic analyses results are available for public inspection at the Bureau of Mines, Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, Colorado. Tr, trace; -, not detected; ND, not determined]

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
1	Specimen	-	0.1	0.68	ND	ND	Schist with malachite and azurite. Prospect dump.
2	Specimen	Tr	-	1.89	ND	ND	Do.
3	Chip	-	-	ND	ND	ND	Dacite with quartz stringers; minor limonite, otherwise no mineralization visible. Prospect wall.
4	1.5-ft chip	Tr	-	ND	ND	ND	Granitic gouge at shear zone; no mineralization visible. Prospect wall.
5	2.0-ft chip	-	-	ND	ND	ND	Limonitic fault gouge; no mineralization visible. Shaft wall.
6	9-in chip	-	Tr	ND	ND	ND	Quartzose shear zone in diorite. Adit face.
7	Grab	Tr	.9	.06	0.05	ND	Diorite and quartz with minor malachite. Adit dump.
8	Specimen	Tr	11.3	ND	ND	ND	Altered granite showing secondary copper mineralization. Caved adit dump.
9	Grab	-	.2	ND	ND	ND	Drusy quartz with chlorite. Shaft dump.
10	Grab	0.02	8.1	.02	.19	0.03	Quartz. Dump north of prospect pit.
11	3-in. chip	Tr	1.2	.05	ND	ND	Quartz vein with secondary copper in diorite country rock. Prospect wall.
12	Specimen	.03	27.3	1.5	.09	ND	Quartz with malachite and chrysocolla. Prospect dump.
13	Specimen	.02	48.0	ND	ND	ND	Quartz with malachite and azurite. Prospect stockpile.
14	Specimen	Tr	-	ND	ND	ND	Quartz zone in schist and diabase. Outcrop.
15	Grab	-	.1	ND	ND	ND	Quartzose shear zone in diorite. Prospect dump.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Area Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
16	Grab	Tr	10.6	1.2	ND	ND	Quartz with malachite, azurite, and chrysocolla. Prospect dump.
17	1.2-ft chip	-	-	ND	ND	ND	Quartz vein in quartz diorite; no mineralization visible. Prospect wall.
18	Grab	0.01	14.1	0.28	2.0	0.30	Altered granite with malachite, azurite and chrysocolla. Prospect dump.
19	1.2-ft chip	Tr	0.1	ND	ND	ND	Altered diabase with 1-to 2-in wide aplitic dikes intruded; no mineralization visible. Shaft collar.
20	Chip	Tr	.2	ND	1.3	2.20	Quartz with hematite stain. Near prospect.
21	1.3-ft chip	Tr	.2	.36	2.2	1.50	Diorite (?). Shear zone near prospect.
22	0.9-ft chip	Tr	Tr	.10	1.3	.90	Diabase, footwall of shear. Prospect wall.
23	Specimen	.02	2.4	.38	11.2	5.8	Copper mineralization at prospect.
24	Specimen	.01	.3	.18	1.3	2.7	Diabase; among last material removed from shaft. Visible malachite, azurite, chrysocolla, galena. Shaft dump.
25	Specimen	.03	1.6	.34	15.3	21.3	Diabase; shows galena, sphalerite. Shaft dump.
26	1.3-ft chip	Tr	.5	.66	ND	ND	Siliceous dike in granite; pyrite, malachite, chrysocolla, brochantite (?). Shaft wall.
27	3.0-ft chip	Tr	.1	ND	ND	ND	Decomposed granite; immediately west of sample 26. Shaft wall.
28	Grab	Tr	-	ND	ND	ND	Altered coarse-grained granite; minor iron oxides. Shaft dump.
29	Specimen	Tr	.6	1.2	0.12	ND	Shear zone with malachite and chrysocolla in altered diabase. Shaft dump.
30	6.3-ft chip	Tr	.1	ND	ND	ND	Granite; shear zone with malachite and chrysocolla. Shaft wall.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Area Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
31	3.8-ft chip	Tr	Tr	ND	ND	ND	Granite with malachite, chrysocolla, and chalcopyrite. Trench.
32	Grab	-	-	ND	ND	ND	Quartz monzonite. Trench.
33	3.7-ft chip	-	-	ND	ND	ND	Do.
34	4.6-ft chip	-	-	ND	ND	ND	Chloritized granite. Trench.
35	Chip	-	-	0.22	0.70	0.44	Granite with hematite and chlorite. Prospect.
36	3.6-ft chip	Tr	-	ND	ND	ND	Decomposed granite; hematite stained. Trench.
37	1.9-ft chip	-	-	ND	ND	ND	Decomposed granite; chlorite alteration. Trench.
38	2.8-ft chip	Tr	-	ND	ND	ND	Altered granite with iron oxides. Trench.
39	Chip	-	-	ND	ND	ND	Decomposed granite; hematite stained. Trench.
40	12.0-ft chip	-	-	ND	ND	ND	Granite with hematite stain. Prospect.
41	Grab	0.03	Tr	.20	1.1	.28	Shear zone in diabase. Shaft dump.
42	Grab	-	-	ND	ND	ND	Diabase; minor pyrite on dump. Shaft dump.
43	Specimen	-	0.1	ND	ND	ND	Do.
44	Grab	Tr	-	ND	ND	ND	Diabase; no mineralization visible. Shaft dump.
45	2.5-ft chip	-	.1	ND	ND	ND	Siliceous material; no mineralization visible. Prospect wall.
46	Specimen	Tr	-	ND	ND	ND	Granodiorite/latite contact. Prospect dump.
47	2.5-ft chip	-	.5	.40	ND	ND	Vein. Adit rib.
48	4.0-ft chip	-	-	ND	ND	ND	Vein. Adit face.
49	7.0-ft chip	Tr	.9	.22	.52	ND	Quartz vein. Prospect wall.
50	Grab	Tr	6.5	.53	ND	ND	Altered granite with minor hematite and limonite. Adit stockpile.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Area, Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
51	1.3-ft chip	Tr	35.7	0.57	ND	ND	Monzonite with malachite and chrysocolla. Prospect wall.
52	2.5-ft chip	-	5.8	.27	0.34	ND	Shear zone in monzonite with malachite, azurite, and chrysocolla. Prospect wall.
53	Specimen	-	4.9	.82	ND	ND	Quartz from vein. Adit dump.
54	Grab	-	0.4	.02	ND	ND	Dripping springs quartzite with minor calcite and pyrite. Adit dump.
55	Grab	Tr	3.5	.31	.62	ND	Quartz. Shaft ore chute.
56	Chip	-	-	ND	ND	ND	Schist with malachite. Prospect wall.
57	Chip	-	-	ND	ND	ND	Do.
58	8.4-ft chip	Tr	Tr	ND	ND	ND	Schist with malachite, azurite, and chrysocolla. Prospect wall.
59	6.8-ft chip	-	.1	ND	ND	ND	Basalt(?); iron stained. Prospect wall.
60	6.0-ft chip	-	1.0	.14	.10	ND	Shear zone. Shaft collar.
61	7.3-ft chip	-	Tr	ND	ND	ND	Tuff breccia. Adit back.
62	2.9-ft chip	Tr	Tr	ND	ND	ND	Tuff; no mineralization visible. Adit face.
63	2.4-ft chip	Tr	.1	ND	ND	ND	Tuff; shear zone. Adit face.
64	4.0-ft chip	-	Tr	ND	ND	ND	Tuff; no mineralization visible. Adit face.
65	Grab	-	-	ND	ND	ND	Tuff. Caved adit dump.
66	Grab	Tr	-	ND	ND	ND	Do.
67	Grab	-	.1	ND	ND	ND	Welded tuff; no mineralization visible. Shaft dump.
68	1.8-ft chip	-	.1	ND	ND	ND	Silicified tuff. Prospect wall.
69	Grab	-	-	ND	ND	ND	Tuff; no mineralization visible. Prospect dump.
70	Chip	-	-	ND	ND	ND	Tuff. Outcrop.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
71	1.3-ft chip	-	0.1	ND	ND	ND	Ash flow tuff; no mineralization or alteration observed. Prospect wall.
72	Specimen	-	-	ND	ND	ND	Contact between dacite and tuff. Shaft dump.
73	1.8-ft chip	-	Tr	ND	ND	ND	Welded tuff. Adit back.
74	3.0-ft chip	-	.1	ND	ND	ND	Welded tuff. Adit right rib.
75	3.4-ft chip	-	-	ND	ND	ND	Welded tuff; no mineralization visible. Adit face.
76	1.6-ft chip	-	-	ND	ND	ND	Hematite stained fault gouge. Adit.
77	Specimen	-	-	ND	ND	ND	Quartz at granite/schist contact. Caved adit dump.
78	Grab	-	.1	0.66	ND	ND	Schist and quartz with minor malachite and chrysocolla. Caved adit dump.
79	Specimen	-	-	ND	ND	ND	Bull quartz. Prospect dump.
80	4.8-ft chip	-	.1	ND	ND	ND	Schist with sericite. Prospect wall.
81	3.3-ft chip	Tr	-	ND	ND	ND	Granite; feldspars altered to clay and sericite; no mineralization visible. Adit face.
82	3.2-ft chip	Tr	.1	ND	ND	ND	Granite; shear zone with copper oxide. Adit.
83	3.4-ft chip	Tr	.2	ND	ND	ND	Altered granite with hematite stain. Prospect wall.
84	5.0-ft chip	-	Tr	ND	ND	ND	Granite. Prospect wall.
85	3.3-ft chip	-	-	ND	ND	ND	Andesite altered to clay. Adit face.
86	3.0-ft chip	Tr	.1	ND	ND	ND	Andesite altered to clay; minor malachite. Caved shaft.
87	2.3-ft chip	-	.1	ND	ND	ND	Altered dike in rhyolite (?). Prospect wall.
88	8.9-ft chip	Tr	.1	ND	ND	ND	Altered andesite with malachite and chrysocolla. Prospect wall.
89	1.6-ft chip	-	Tr	ND	ND	ND	Rhyolite; intrusive contact zone with minor malachite. Prospect wall.
90	4.3-ft chip	-	.1	ND	ND	ND	Rhyolite. Prospect wall.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
91	4.0-ft chip	-	Tr	ND	ND	ND	Rhyolite. Prospect wall.
92	3.0-ft chip	Tr	Tr	ND	ND	ND	Altered volcanic breccia; no mineralization visible. Adit face.
93	Grab	Tr	0.1	ND	ND	ND	Muck pile at adit drift face.
94	4.3-ft chip	-	Tr	ND	ND	ND	Rhyolite. Adit back.
95	1.0-ft chip	-	-	ND	ND	ND	Siliceous fault zone; malachite stain. Prospect wall.
96	1.2-ft chip	Tr	.3	0.31	0.53	ND	Rhyolite; minor malachite and chrysocolla in vicinity. Prospect wall.
97	0.7-ft chip	0.02	.6	1.6	ND	ND	Rhyolite; fault gouge with malachite and azurite. Prospect wall.
98	4.5-ft chip	Tr	.2	ND	ND	ND	Rhyolite; hematite stained, minor malachite and chrysocolla in random 1/4-in seams. Shaft wall.
99	3.5-ft chip	Tr	.1	ND	ND	ND	Silicified fault breccia, volcanic; hematite stained. Adit face.
100	1.0-ft chip	Tr	.1	.34	ND	ND	Weathered granite; moderate malachite and chrysocolla. Prospect wall.
101	1.2-ft chip	Tr	Tr	1.8	ND	0.82	Argillic dike with malachite, azurite, and chrysocolla. Prospect wall.
102	0.7-ft chip	Tr	.1	.59	ND	ND	Schist with malachite and chrysocolla, some hematite. Prospect wall.
103	2.5-ft chip	.01	.9	1.3	1.5	ND	Dacite with malachite and chrysocolla in stringered veinlets. Adit rib.
104	0.3-ft chip	.01	.2	6.5	13.1	.60	Dacite agglomerate; malachite, azurite, and chrysocolla in vein. Discovery prospect wall.
105	2.8-ft chip	.02	Tr	ND	ND	ND	Rhyolite; hematite stained and altered vein; no mineralization visible. Prospect wall.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona--Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions
106	0.5-ft chip	0.01	0.1	ND	ND	ND	Dacite agglomerate; vein. Adit raise.
107	4.5-ft chip	Tr	.1	ND	ND	ND	Dacite agglomerate. Adit crosscut face.
108	0.5-ft chip	Tr	.1	ND	ND	ND	Altered rhyolite; sample from faulted (?) location. Prospect wall.
109	4.0-ft chip	Tr	.3	ND	ND	ND	Dacite (?) breccia; shear zone. Shaft.
110	Specimen	.80	.1	4.6	0.12	ND	Dacite; minor blebs of turquoise (?) and chrysocolla; .10 pct WO <sub>3</sub> . Shaft dump.
111	Chip	Tr	1.6	2.1	.35	ND	Quartzose shear zone; some turquoise (?); .03 pct WO <sub>3</sub> . Shaft collar.
112	Chip	.11	.1	1.0	10	ND	Quartzose, oxidized material; .05 pct WO <sub>3</sub> . Prospect wall.
113	3.2-ft chip	Tr	.1	ND	ND	ND	Dacite (?) breccia; shear zone, no mineralization visible. Adit rib.
114	0.5-ft chip	Tr	-	ND	ND	ND	Dacite tuff; siliceous fault zone. Prospect wall.
115	Chip	-	-	ND	ND	ND	Welded dacite tuff; siliceous fault zone. Prospect wall.
116	Grab	-	-	ND	ND	ND	Tuff. Adit dump.
117	Grab	Tr	-	ND	ND	ND	Ash-flow rhyodacite tuff. Prospect.
118	Chip	-	-	ND	ND	ND	Welded tuff; siliceous fault zone. Prospect wall.
119	5.0-ft chip	-	Tr	ND	ND	ND	Caliche-cemented surface detritus. Adit face.
120	Grab	-	Tr	ND	ND	ND	Red dirt; natural pothole in volcanic rock-- "Indian paint"--near "Indian Paint Mine."
121	4.6-ft chip	-	-	ND	ND	ND	Dacite (?); bright red color. Adit rib.
122	2.7-ft chip	-	.1	ND	ND	ND	Brecciated dacite; no mineralization visible. Adit face.
123	2.6-ft chip	-	-	ND	ND	ND	Brecciated dacite; fault gouge, no mineralization visible. Adit portal.
124	2.6-ft chip	-	.1	ND	ND	ND	Rhyolitic ash flow. Prospect wall.
125	Grab	Tr	Tr	ND	ND	ND	Altered rhyolite; no mineralization visible. Shaft dump.

Table 1. -- Results of analyses of samples from the Superstition Wilderness Area and contiguous RARE II Further Planning Areas, Gila, Maricopa, and Pinal Counties, Arizona-Continued

No.	Sample Type	Gold	Silver	Copper	Lead	Zinc	Descriptions	
126	Specimen	-	-	ND	ND	ND	Dacite tuff. Prospect dump.	
127	Chip	No analysis						Serpentinized limestone with asbestos--1/2 in harsh fiber--. Outcrop.
128	Specimen	Tr	Tr	ND	ND	ND	Volcanic rock; highly mineralized and iron rich. Hillside float.	
129	1.4 ft chip	Tr	Tr	ND	ND	ND	Diabase; highly altered. Prospect wall.	

part of a pocket of land excluded from the Superstition Wilderness along the southeast boundary.

The JF area is accessible from U.S. Highway 60 and 70 via the Queen Creek Road 3.5 mi west of Superior or 2 mi east of Florence Junction and the Hewitt Canyon Road which runs 8.7 mi north into the area. The Queen Creek Road is regularly maintained, but the Hewitt Canyon Road is not. Jeep trails facilitate access to many of the workings outside the Wilderness.

Mining claims have, at one time or another, covered all the workings in the JF area. The largest current group of mining claims in the area is the Lazy Mule Group, held by Carl Smith of Mesa, Arizona. It includes the Lazy Mule, Golden Rule, and Sky Blue mining claims. In late 1976 and early 1977, the Lazy Mule Group was under option to Dual Resources, Incorporated, of Arizona and Canada. In January 1977, Dual had a diamond-drill rig working within the study area in Hewitt Canyon. A smaller group of claims, the Enterprise Group, is held by George W. Gerhart of Mesa. Other mining claims have been staked in the area, but as of January 1977, current affidavits of labor had not been filed in the Pinal County Courthouse in Florence.

Sample assays indicate that the mineralization in this area lies both inside and outside the Wilderness and extends at least from prospects 1.5 mi south of the JF Ranch to adits and prospects in Rogers Canyon 2.7 mi northeast of the JF Ranch. The mineralization also extends from the JF Ranch 4.3 mi east to a caved adit on the northeast side of Montana Mountain. Evidence of mineralization was not found northwest of the JF Ranch.

The JF area has three apparent zones of mineralization; one of silver-lead-copper, one of silver-copper, and one of lead-zinc-copper (pl. 1).

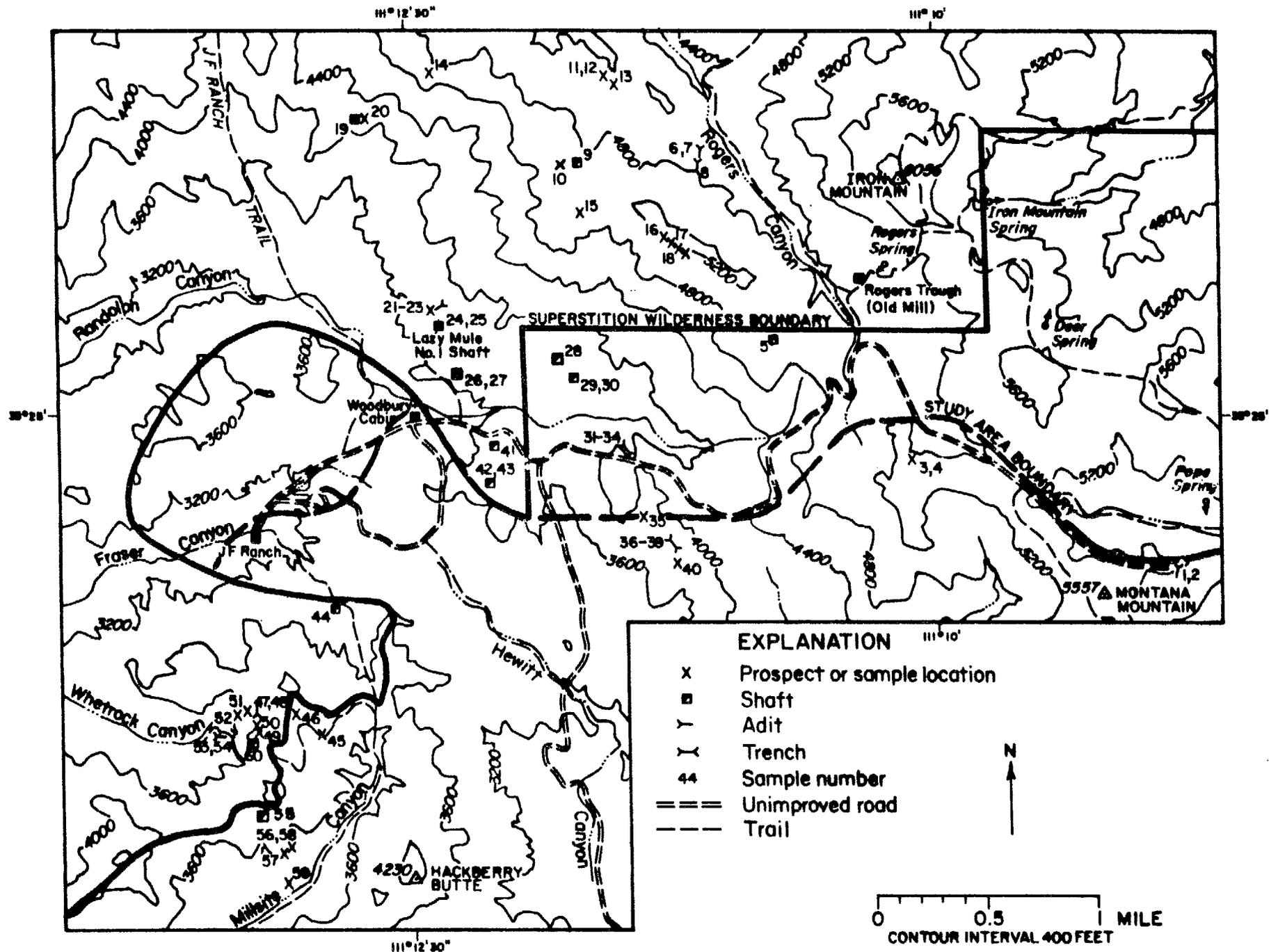


Figure 1.--JF Area

The lead-zinc-copper zone lies between two silver-lead-copper zones. The three zones are postulated on the basis of old prospects and mine workings, chip samples from accessible workings, and grab samples of selected material believed to have come from the inaccessible workings. Because many of the workings are not accessible, however, the inference of mineralized zones is uncertain.

The lead-zinc-copper zone centers around the Lazy Mule No. 1 inclined shaft which lies 1.3 mi N. 42° E. from the JF Ranch (fig. 1). The timbered shaft was filled with water to within 30 ft of the collar, and the shaft ladder above the water level was in disrepair at the time of this field examination. Samples 24 and 25 (table 1) were taken from selected mineralized material lying near the collar. The dump lies along a wash, and most of it has been eroded.

The northeast silver-copper zone extends along a ridge top and eastward into Rogers Canyon. The zone is inferred from dump samples and samples of quartz veins up to 3 in. wide and stained with malachite.

The southwest silver-lead-copper zone lies near the head of Whetrock Canyon, 0.9 mi south of the JF Ranch headquarters. Most of the workings are within the Wilderness boundary which follows the ridge line. The workings are old and, where accessible, expose malachite and chrysocolla along shear planes in Precambrian rocks. The dominant mineralized shear attitude is N. 3° W., dipping 73° W.

#### Peralta area

The Peralta area (fig. 2) lies along the southwestern border of the Superstition Wilderness in secs. 27, 28, 29, and 30, T. 1 N., R. 10 E. Secs. 27, 28, and 30 are a part of the Wilderness, and sec. 29, part of the



proposed additions. Access from Apache Junction is southeast via U.S. Highway 60-70-80-89. At 8.5 mi the Peralta Road, a maintained gravel road, leads 7 mi northeast to the Peralta Canyon Campground in sec. 29.

The Peralta area contains three groups of current mining claims: the Dacite Cliff claims, recorded by Andy Synbad; the Casi claims in the N1/2 sec. 28, recorded by Charles M. Crawford; and the Silver Eagle claims, also in the N1/2 sec. 28, recorded by Carl H. Clay.

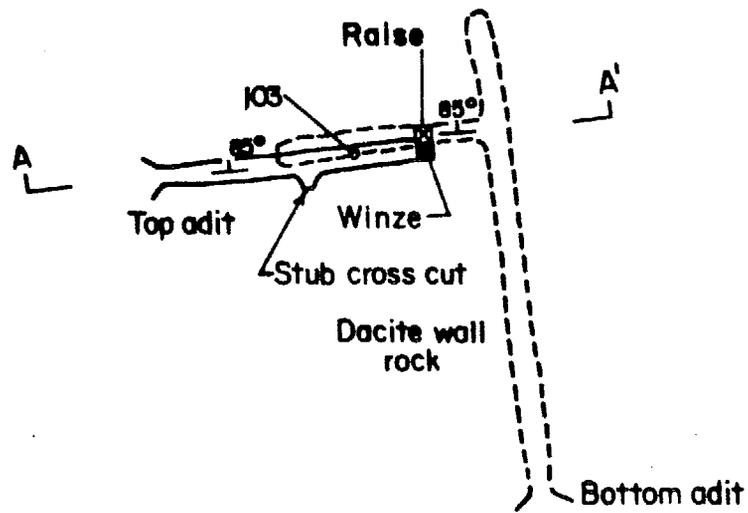
Mineralization in the Peralta area appears to be associated with a frontal fault zone that strikes N. 75-80° E. and dips 65-85° N. The zone contains lead, copper, and minor zinc, silver, and gold values. Chromium is present in trace amounts (up to 0.01 percent by spectrographic analysis) in many of the samples. The fault zone separates cliff-forming Tertiary dacite and other volcanics on the north from valley-forming Precambrian schist and granite on the south.

Pits, trenches, open cuts, shafts, and adits occur along the fault zone from the Dacite Cliffs Mine northeast 2.4 mi to prospects just south of Miners Needle. The Dacite Cliffs Mine is the largest group of workings in the area, and the upper working is the most heavily mineralized.

#### Dacite Cliffs Mine

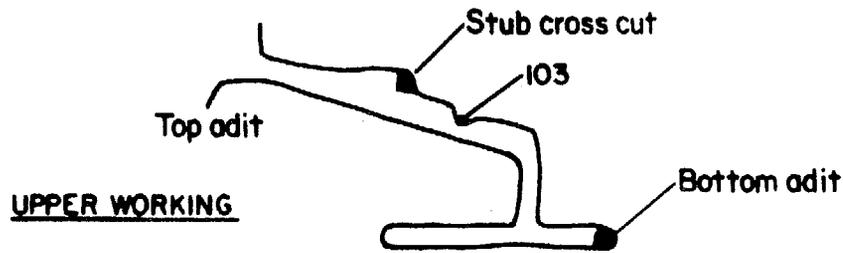
The Dacite Cliffs Mine consists of two workings, in the SE1/4 sec. 30, T. 1 N., R. 10 E., one at the base of the cliffs at about 2,460 ft elevation, and the second in the cliffs at about 2,985 ft elevation (fig. 3).

The upper working explores a vein of quartz, calcite, barite, chryso-colla, and malachite which strikes N. 85° E. and dips 85° N., ranges from 4 to 36 inches wide, and occupies a fracture zone. The dacite agglomerate wall-rock in the vicinity of the working contains sparse to locally abundant



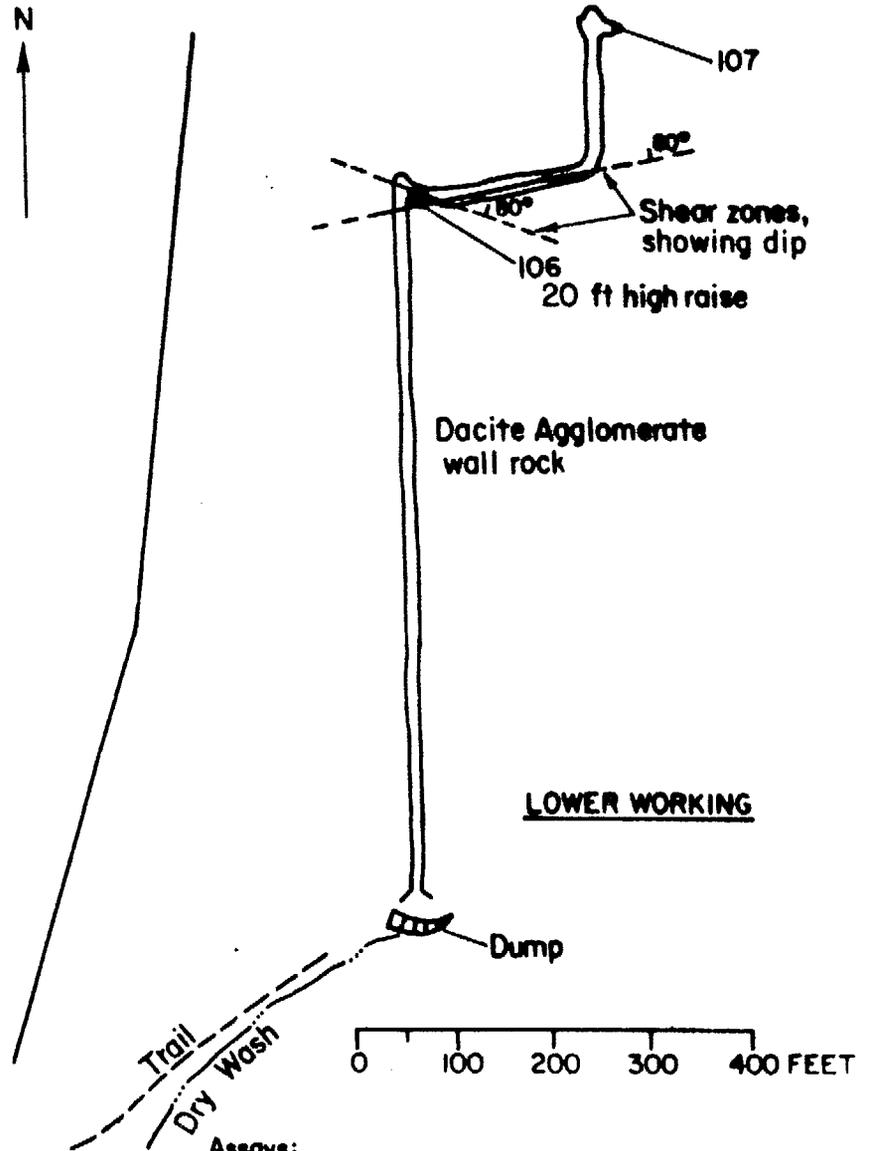
PLAN VIEW

0 10 20 30 40 50 100 FEET



UPPER WORKING

A-A' SECTION VIEW  
LOOKING N85°W



LOWER WORKING

0 100 200 300 400 FEET

Assays:

Sample No.	Ounces/ton		Percent		Width
	Gold	Silver	Copper	Lead	
103	0.01	0.9	1.3	1.5	2.5 ft chip

Assays:

Sample No.	Ounces/ton		Width
	Gold	Silver	
106	0.01	0.1	0.5 ft chip
107	Trace	0.1	4.5 ft chip

Figure 3.-Dacite Cliffs Mine.

fragments of fresh granitic rock. Two adits in the upper working are connected by a drift and a raise. The top was driven easterly on the vein, the bottom northerly, intersecting the vein. A 30 in wide chip sample (103) was cut across the vein in the back of the top adit 82 ft from the portal. It assayed 0.01 oz gold per ton, 0.9-oz silver per ton, 1.3 percent copper, and 1.5 percent lead.

The top adit contains a stoped area of about 200 cu yd, indicating that as much as 400-440 tons of material may have been shipped from it.

Where the bottom adit intersected the vein, a drift was driven westerly along the vein. A raise driven on the vein from the drift to the top adit was not accessible. In the drift, the vein has pinched to a 4-in fracture zone with no copper staining.

The lower working at the base of the Dacite Cliffs consists of an adit, a drift, a raise, and several crosscuts. The adit intersects a fracture zone 689 ft from the portal. The strikes of the fractures vary from S. 80° E. to N. 80° E. and the dips vary from 75° N. to vertical, with the dominant strike being N. 85° E. and the dip 80° N.

The drift trends easterly along the fracture zone. A stringer vein in this zone is generally 1 in or less wide, except in a 20-ft raise near the western end of the drift where it widens to 6 in. The vein is composed of quartz, barite, and calcite. The entire working is in dacite agglomerate with no metallization observed. Essentially, no dump remains, and little material in the wash can be identified as coming from the working.

The attitude of the fracture zones in both workings, their relative positions, and the barium content of the samples indicate that the vein followed by the drift in the lower working of the Dacite Cliffs may be the same as the one explored by the upper working.

### Other Peralta area prospects

Malachite, chrysocolla, and copper oxides occur in pits in Precambrian granite south and east of the Peralta Campground. North of the campground and northeastward into the NW1/4 sec. 28, copper oxides are exposed in shafts, cuts, and pits in Tertiary volcanics. Prospects south of Miners Needle are in Precambrian rocks and also show copper mineralization.

### Palmer Mine

The Palmer Mine area (pl. 1) is outside the western boundary of the Superstition Wilderness, but inside the proposed additions, in N1/2 sec. 7, T. 1 N., R. 9 E. It can be reached via Arizona State Highway 88. In the vicinity of Goldfield, 5 mi north of Apache Junction, several maintained and unmaintained roads lead eastward to the National Forest boundary. At one time, a road led to the Palmer Mine. The mine dump beneath the high cliffs of Superstition Mountain can be seen from Highway 88.

The Palmer Mine was developed on a 2-to 14-in. siliceous vein within a breccia zone in dacite. The breccia zone, trending generally north-south and dipping vertically, is at least 50 ft wide. North-northwest trending shears within the breccia are mineralized with limonite and malachite. The main vein and other quartz stringers in the breccia zone carry gold values. Though the mines at Goldfield are in Precambrian granite, the Palmer Mine may be located on the outer fringe of the Goldfield gold-mineralized zone.

Goldfield was already a booming mining camp when mineralization at the Palmer Mine was located and worked during the 1890's. Several times over the years, the shaft was rehabilitated and deepened and drifts driven, but it appears that production was limited to a few tons. The shaft is now caved and filled with debris to within about 30 ft of the surface.

Two samples were taken at the Palmer Mine. Sample 110, from the dump, was composed of selected pieces of quartz float with copper oxide staining and assayed 0.8 oz gold per ton, 0.1 oz silver per ton, 4.6 percent copper, and 0.08 percent tungsten. A chip sample (111) was taken at the north edge of the caved shaft across a 4.5-ft shear zone which has been altered to sericite and clay with limonite and malachite staining. It assayed a trace of gold, 1.6 oz silver per ton, 2.1 percent copper, 0.35 percent lead, and 0.025 percent tungsten.

A trench approximately 330 ft north of the Palmer mine exposes a 2 ft quartz vein striking N. 10° W. and dipping 81° W. A chip sample across the vein (112), assayed 0.11 oz gold per ton, 0.1 oz silver per ton, 1 percent copper and 0.04 percent tungsten. No other indication of metallization was found in the area.

#### Kennedy area

The Kennedy area lies southeast of the old Kennedy Ranch at the southeast corner of the Superstition Wilderness (pl. 1). Access from U.S. Highway 60 and 70 is by the Pinto Valley road to Pinto Creek, then west on a maintained ranch road 5 mi to the ranch headquarters. Chrysotile asbestos and magnetite-hematite iron deposits in the Kennedy area are briefly described by Peterson (1960). The asbestos deposits are discussed more fully by Stewart (1955), and the iron deposits by Harrer (1964). All of the reported asbestos and magnetite occurrences are outside the Superstition Wilderness.

Asbestos occurs in veinlets that pinch, swell, coalesce, and split within 2 in. The veinlets are generally 0.4 in or less wide rarely swelling to 3.2 in. Although some unweathered fibers are semisoft with fair tensile strength, most are harsh with little tensile strength.

Magnetite occurs in small irregular contact metamorphic and metasomatic replacement deposits. Harrer (1964) suggests that an aggregate of these small deposits represents a small source of iron.

Both asbestos and magnetite are associated with diabase sills and dikes in the Precambrian Mescal Limestone. The known deposits total only a few tons, and the limited extent of limestone outcrops suggests that there is little potential for larger deposits. No production of asbestos or iron from the prospects in the Kennedy area has been reported.

William E. Bohm of Miami, Ariz., owner of the old Kennedy Ranch, maintains a few isolated mining claims in the vicinity of the ranch. Mining claims and millsites held by Cities Service Company and used in connection with the Pinto Valley copper mine to the east, reach across Pinto Creek. Mining claims located along the copper mineralized trend between Miami and Superior extend northwestward to Haunted Canyon. Both of these claim areas are at least 2.5 mi outside the Wilderness.

#### Other prospect workings

Numerous other prospect workings were examined and sampled, including Miller Mines, Reed Camp area at Coffee Flat Mountain, Williams Camp area at Bluff Springs Mountain, and Indian Paint Mine area near Battleship Mountains. No evidence from these workings suggests the presence of mineral resources at these sites or elsewhere in the study area.

#### Miscellaneous minerals

The geology and geologic history of the Superstition Wilderness are not conducive to the presence of oil, gas, or coal, and no indication of such deposits was found.

No evidence of the existence of a geothermal resource has been found in the Superstition Wilderness.

Minable uranium deposits occur within several miles of the Superstition Wilderness in Dripping Spring Quartzite, but none have been reported within the Wilderness. During the course of this study, the U.S. Geological Survey outlined a uranium anomaly in the northeastern part of the study area. However, the Bureau found no mining claims, prospect pits, or evidence of drilling in the vicinity of the anomaly.

Abundant granitic sand and gravel, both weathered granite and wash material, are present in and near outcrops of Ruin Granite. Limited amounts of impure marble and bedded quartzites are in the Apache Group outcrops and in the Paleozoic undivided outcrops. Some rock suitable for building stone is present in areas of volcanic rock outcrops.

#### CONCLUSIONS

The occurrences of base and precious metals in prospect workings along the southern border of the Superstition Wilderness in the Peralta and JF areas could be related to deep-seated metal deposits. Only a thorough core drilling program would determine whether such deposits occur.

Other prospect workings within the Wilderness; Reeds Camp, Williams Camp, others that are unnamed, the more extensive Indian Paint claims, and Miller Mine, are barren.

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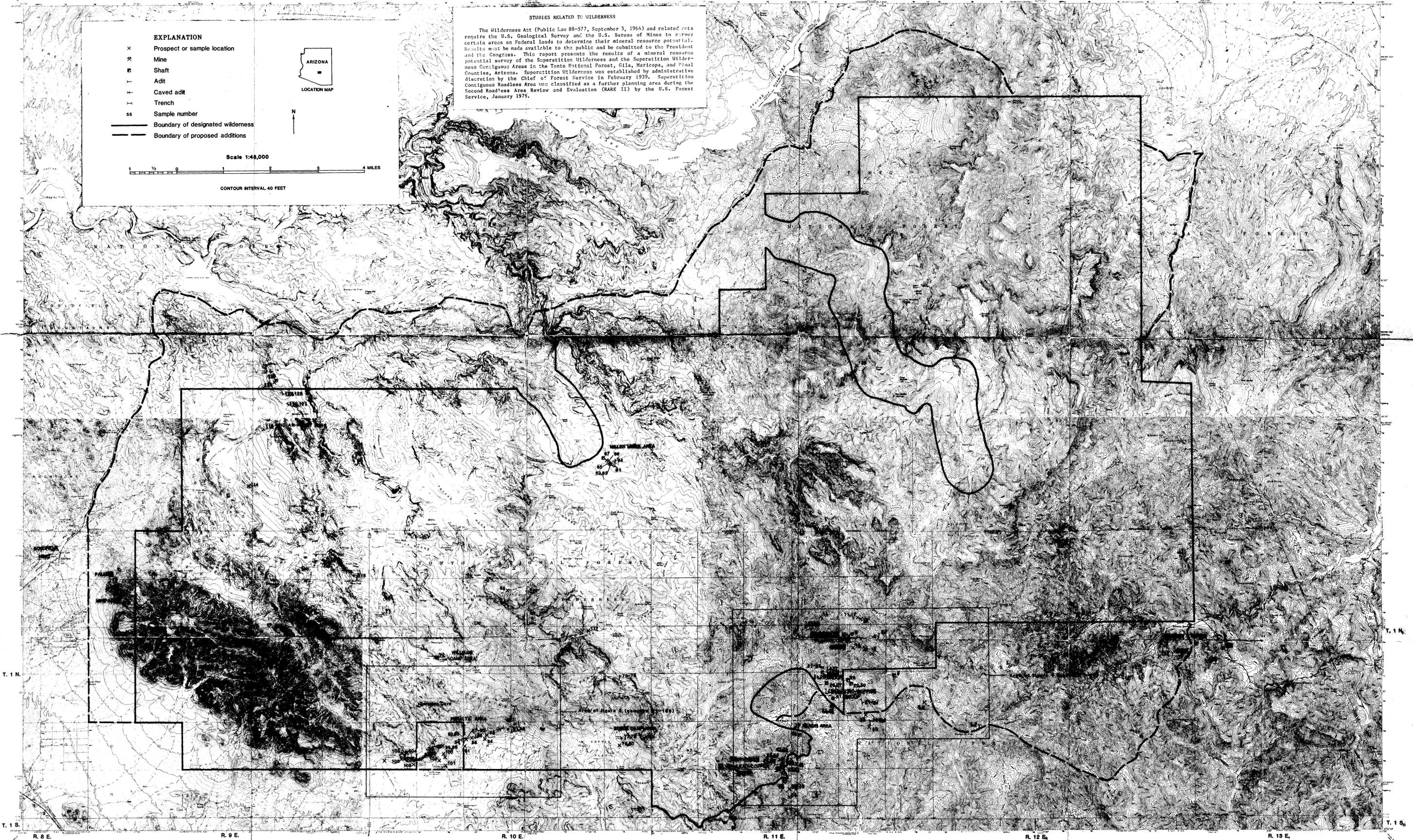


PLATE 1.- MINES AND PROSPECTS MAP OF THE SUPERSTITION WILDERNESS AND CONTIGUOUS RARE II FURTHER PLANNING AREA, GILA, MARICOPA, AND PINAL COUNTIES, ARIZONA.

Base from U.S. Geological Survey Goldfield, 1956; Haunted Canyon, 1948; Horse Mesa Dam, 1964; Iron Mountain, 1948; Norman Flat Dam, 1964; Pinyon Mountain, 1964; Two Bar Mountain, 1964; Weavers Needle, 1966.

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