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TO: Randy Moore
FROM: Nick Barr
DATE: March 8, 1993
SUBJECT: Monthly Report - February, 1993

SUMMARY

SW Copper: Evaluation of submittals in Arizona included Copper Springs Canyon, Gila County; Buckeye vein system, Globe District; and Derrio Canyon, Pinal County. Additional field work is anticipated in only the Derrio Canyon area.

Reconnaissance work was initiated in the Dripping Springs Mountains in Gila and Pinal counties.

304 - SOUTHWEST COPPER

Field efforts in February included photo documentation of the Suizo and Shakespeare projects, and evaluation of the leached capping over the Hanover Hill chalcocite deposit near Silver City, New Mexico. Drill core from the Lone Mountain porphyry copper deposit, also located near Silver City, was inspected. Efforts are underway to build a photo library of oxide copper systems to act as an aid in property evaluations by defining color tones of leached outcrops overlying known deposits. In addition, the Carlota deposit was visited with emphasis on designing an orientation geochemical survey to test for any signature marking the Eder South deposit. It is anticipated that the Pinal Schist hosted, exotic copper mineralization marking this site will be tested by silting, roadcut sampling, and possibly vegetation and/or soils.

Evaluation of reconnaissance targets in the Dripping Springs Mountains in Gila and Pinal counties was initiated but limited by access problems. Future efforts in this area will focus on testing significant widths of mineralization reported in the Alice Mine area. Work in this district during February was limited to testing several prospects approximately one mile north of the Rattler Mine. Here, a 4 to 10 foot wide, quartz magnetite, carbonate replacement system marks the contact of diabase with quartzite and limestone and is exposed discontinuously along strike for 1000 feet. Copper sulfides and chrysocolla are exposed in several prospects. Due to limited mineralization, no further work is anticipated here.

Following is a summary of submittals evaluated during the month.

Copper Springs Canyon, Summit Mining District, Gila County: Previous drilling activity tested portions of an altered porphyry system covering approximately five square miles. This drilling

reported widespread, sub-economic primary copper mineralization and some chalcocite. The exploration target proposed by the property owner is a potential chalcocite and oxide copper concentration in the immediately adjacent Pinal Schist. A traverse of the proposed target area failed to locate any intense fracturing or evidence of significant surface oxides. Within the Pinal, high pyrite zones are restricted to several 50 to 200 foot wide breccia zones. No further work is anticipated.

Buckeye Vein System, Globe District, Gila County: Copper oxide mineralization, hosted by quartzite in a high-angle brecciated fault system was traced along strike for approximately 1000 feet. Widths of ore-grade mineralization typically range from 5 to 20 feet. Efforts were directed toward identifying any significant widening of mineralization at the junction of the Buckeye vein with cross structures. One such structural junction with significant widths of mineralization was reported exposed in a quarry, but was not visited due to ongoing quarry activity. Land work will be required prior to further work here.

Derrio Canyon, Pinal County: This area, located approximately eight miles southwest of the Suizo project and reported to host mineralization similar to that at Suizo was brought to Cambior by Glynn Burkhardt. Mr. Burkhardt has previously tested that area with numerous shallow airtrack holes which reportedly showed copper oxide mineralization. Surface exposures marked by elevated fracture hematite and iron oxides are said to mark copper oxide at shallow depth. No assays are available. Rocks exposed over an area roughly two miles square appear to represent a detachment structure with well-developed planer????? silicification and mylonitic textures. Oxide copper showings are widespread and will be investigated in detail next month.

Future Objectives:

- Systematically sample and map Derrio Canyon area.
- Further investigate the Alice Mine area.
- Initiate reconnaissance efforts surrounding the Suizo project.

Nicholas Barr
Geologist

NB:lat

SUMMARY

COPPER SPRINGS CANYON, SUMMIT MINING DISTRICT, GILA COUNTY, ARIZONA

General

The Copper Springs Canyon prospect has potential for a substantial tonnage of open-pit, readily-leachable, oxide copper and chalcocite mineralization in a self-leaching chalcocite blanket and adjacent down-slope zone of oxide copper mineralization. The prospect is part of a large porphyry copper alteration system located approximately five miles south of Inspiration that was not thoroughly evaluated by previous exploration efforts. The alteration-mineralization system consists of a concentrically zoned pattern of pyritic-phyllic and potassic alteration covering an area of approximately five square miles. The pattern has been disrupted by faulting with a large area of high-sulfide, pyritic-phyllic alteration juxtaposed against low-sulfide potassic alteration.

Location

Sections 13, 14, 15, 22, 23, 24, T1S, R14E, Sec 14, T1S, R14½E, Summit Mining District, Gila County, Arizona.

Land

There are three groups of unpatented claims covering most of the mineralized area.

1. Lonesome Pine & Ester group of 20 claims - Santa Anna Mining Co.
2. Turdy group of 46 claims - Ed Dannenhauer, A.B. Walker, Charlotte & Buster Sanders
3. Aqua Verde group of 30 claims - Richard Ahern & Russell M. Corn.

Previous Exploration

Previous exploration includes five churn drill holes, drilled in 1948, five or six widely-spaced holes drilled by Bear Creek in the late 1950's, seven shallow holes drilled by Kerr-McGee in 1964 and several holes drilled by Cities Service in the late 1960's. This drilling is concentrated on a limited part of the alteration system, and was carried out prior to the recent advances in heap leaching and SX-EW technology. Available data on this drilling includes N.P. Peterson's (USGS Bull. 1141-H) summary of the churn drilling, and composite assay logs for the Kerr-McGee drill holes. Although drill hole locations are not definitely known, this data indicates the presence of widespread sub-economic primary copper mineralization and a chalcocite blanket 40 to 50 feet thick averaging approximately .40% copper in the area of high-pyrite phyllic alteration.

Exploration Potential

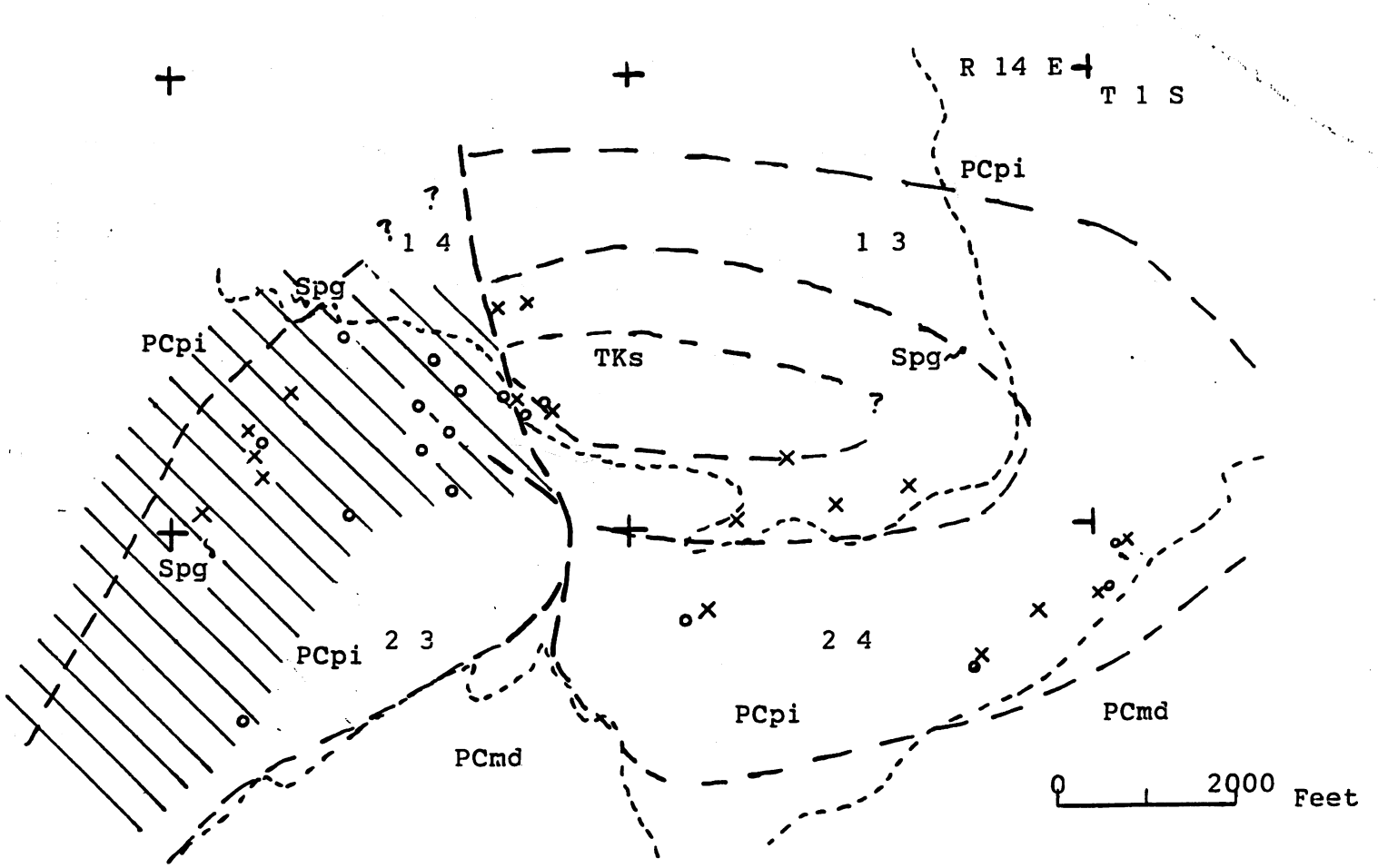
Copper mineralization of economic interest at Copper Springs Canyon occurs as a readily leachable chalcocite blanket and adjacent, downslope oxide copper mineralization that have not been evaluated by previous drilling. Limited data suggests a tonnage potential in excess of 20 million tons at .40% Cu for the chalcocite blanket. The blanket has migrated laterally and down-slope to be precipitated as both chalcocite and oxide copper minerals at lower elevations. The downslope movement of soluble copper should have resulted in a greater concentration of copper at lower elevations, with increased thickness and grade in the lower part of the chalcocite enriched zone and oxide copper minerals in the adjacent area of little or no pyrite. The potential of leachable chalcocite and oxide copper mineralization in this more favorable zone has not been tested by previous drilling.

Prepared by: Russell M. Corn

September 26, 1990

GENERALIZED ALTERATION PATTERN

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA

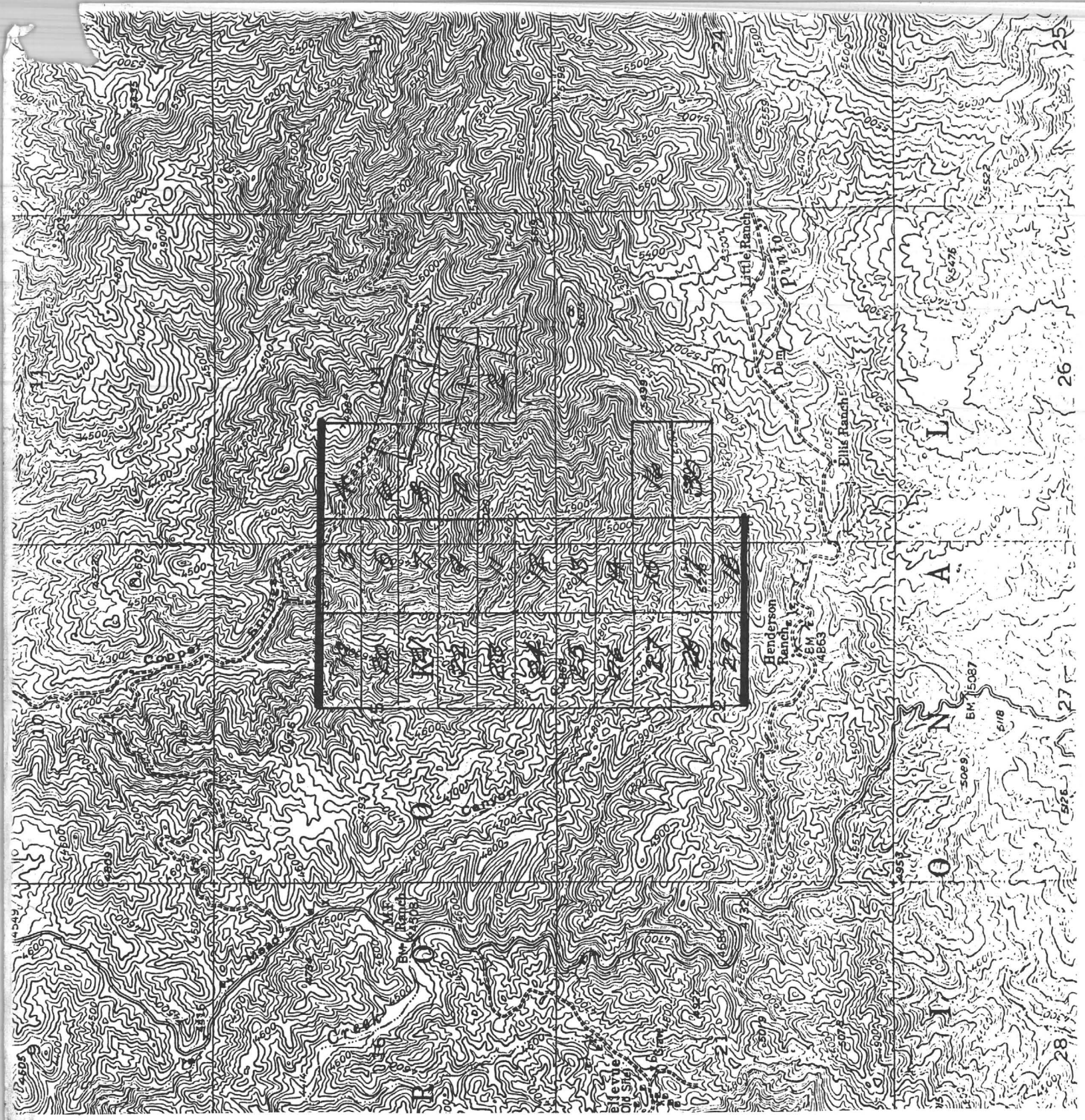


ALTERATION

- Low sulfide Potassic
- Potassic - Phyllic zone of numerous quartz-sericite-K feldspar veinlets
- High sulfide Phyllic-Pyritic
- Low sulfide Phyllic-pyritic
- General Area of Favorable Potential for Leachable Copper Mineralizaion

- ° Drill Hole
- X Oxide copper occurrence
- Spg Copper spring
- Tks Schultze granite
- PCpi Pinal Schist
- PCmd Madera diorite

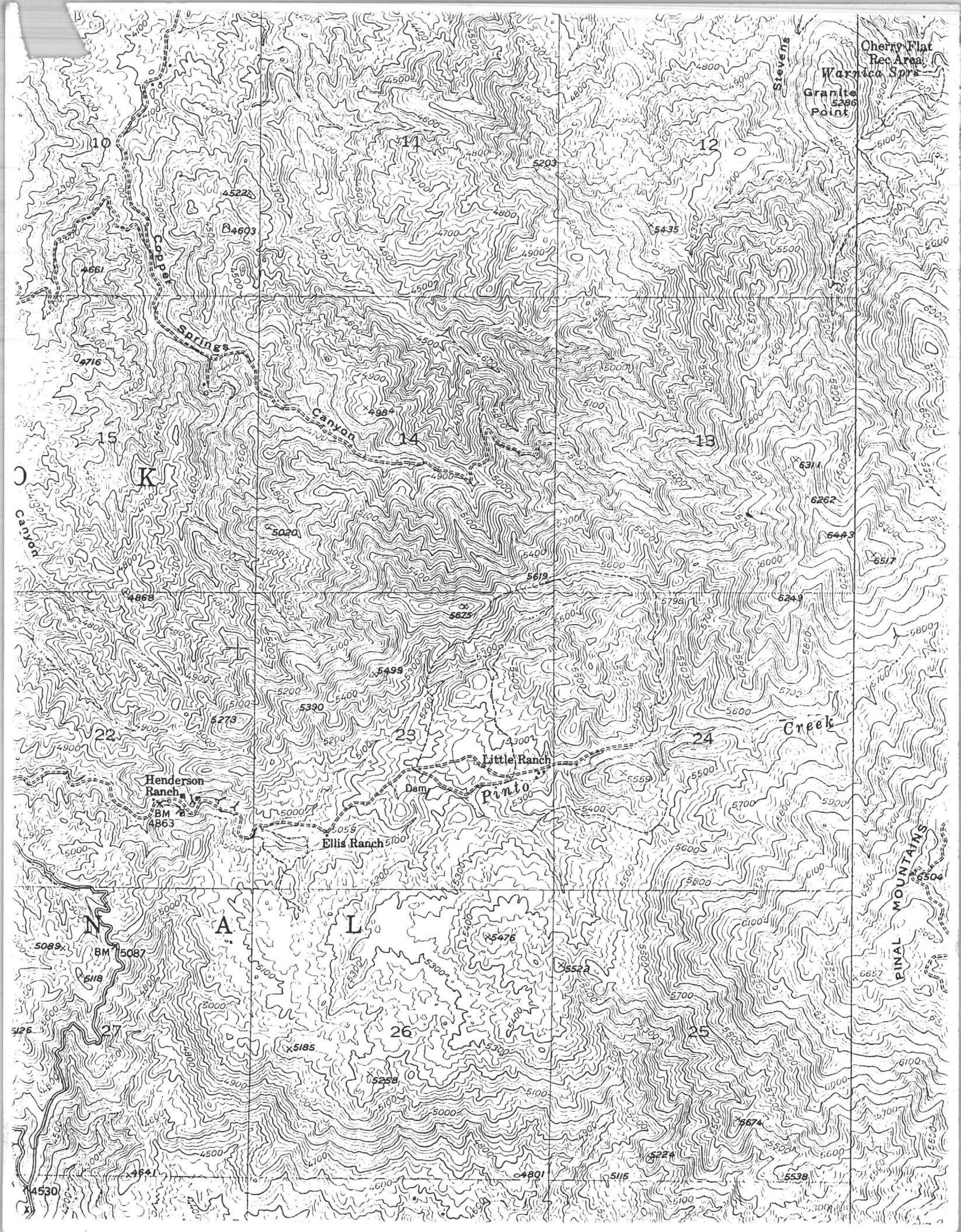
R.M. Corn
April, 1990



Map of Aqua Verde Claims

Copper Springs Canyon

Summit Mining District, Gila County, Arizona


Cherry Flat Rec Area
Warnica Spr
Granite Point 5286
Stevens
Copper Springs Canyon
Canyon
Creek
Little Ranch
Dam
Pinto
Henderson Ranch
BM 4863
Ellis Ranch
PINAL MOUNTAINS
10
11
12
13
14
15
22
23
24
25
26
27
K
N A L
4522
4603
4661
4716
4984
5020
5203
5435
6311
6262
6443
6517
5619
4868
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5798
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5499
5390
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5089
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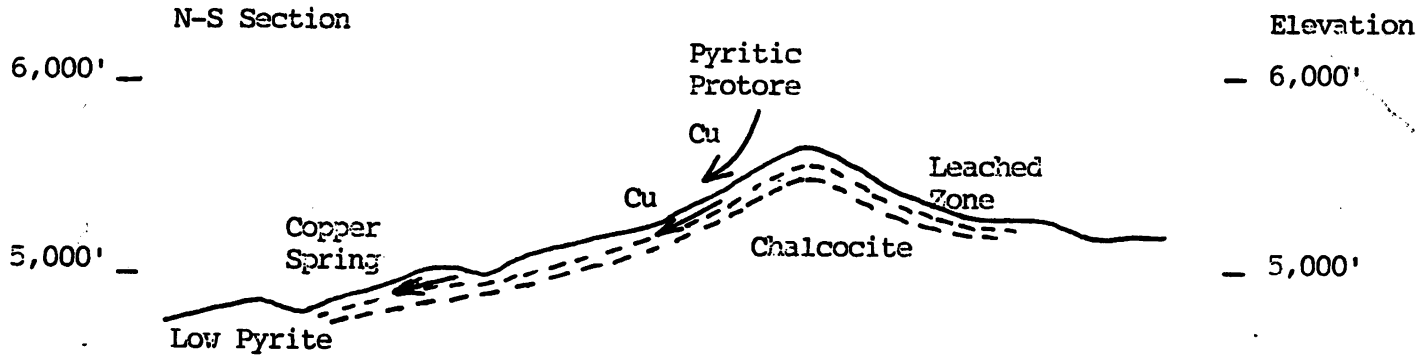
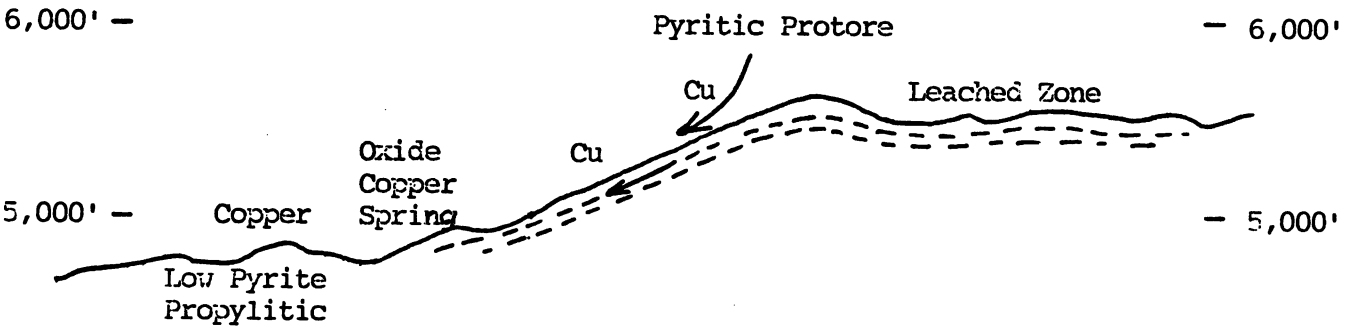
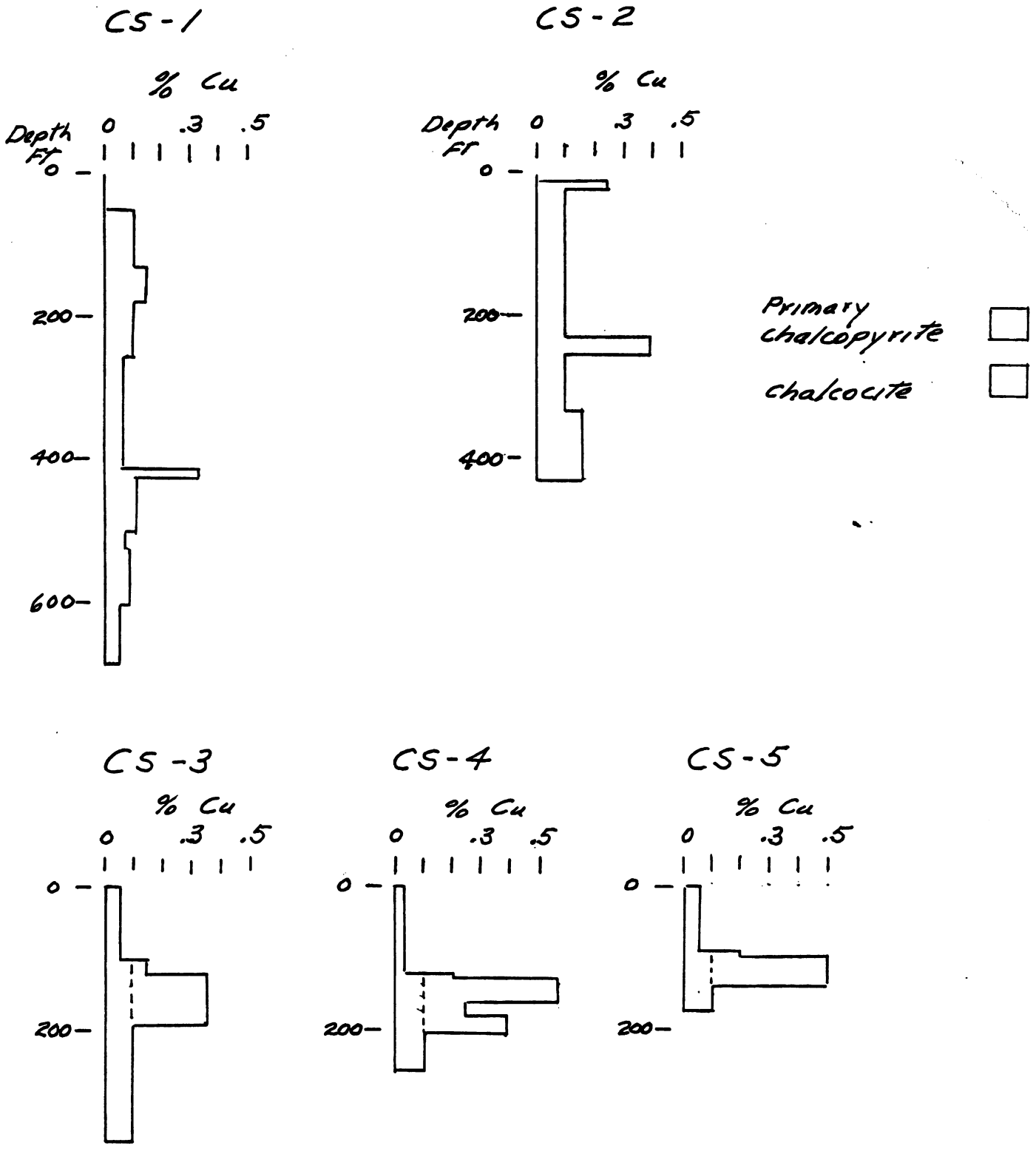




E-W Section

Scale
1 inch = 1,000'
H = V

Sections Through Pyritic Protore
At Copper Springs Canyon
Illustrating Copper Migration
Chalcocite Enrichment and Oxide Copper Mineralization

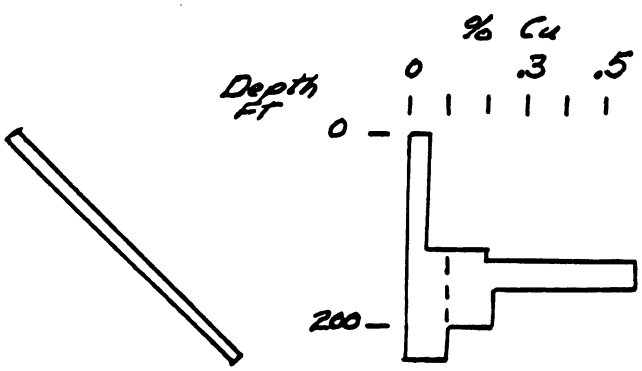


Chalcocite Mineralization and Copper Values

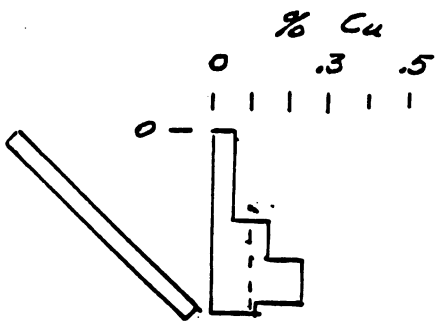
Kerr-McGee Drill Holes

Copper Springs Canyon, Gila County, Arizona

CS - A6



CS - A7



KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-1
Spudded 1-8-64
Completed 2-17-64
Total Depth 692 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
50	50								
125	75	.10	nil	.20	.0005	.36	trace	3.5	$1.49
173	48	.13	nil	.20	.0005	.36	trace	2.6	$1.67
253	80	.10	nil	none	.0005	.30	none	2.7	$0.99
412	159	.06	nil	none	.001	.20	none	2.5	$0.65
421	9	.33	nil	none	none	.30	.02	2.4	$3.07
501	80	.11		.	.003	.10	none	2.9	$0.87
526	25	.06			none	.25	trace	2.3	$0.69
605	79	.08			none	.20	none	2.5	$0.74
692	87	.05	.05	none	none	.25	none	2.4	$0.74
									692 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-2
Spudded 2-18-64
Completed 3-2-64
Total Depth 429.8 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
10	10								
20	10	.23				.20	trace		$1.64
30	10	.09				.20	trace		$0.80
40	10	.10				.10	trace		$0.73
232.4	192.4	.09	.05	.04	.002	.30	nil		$1.18
252	19.6	.34				.10	nil		$2.17
330	78	.09	.05	nil	.002	.24	trace	3.4	$1.02
429.7	99.7	.16			.001	.26	trace	2.3	$1.33
									429.7 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-3
Spudded 3-7-64
Completed 3-13-64
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1.3	1.3								
110	108.7	.05			.001	trace	trace	2.2	$0.33
130	20	.14				trace	trace	2.2	$0.84
195	65	.35	.05	nil	.001	trace	nil	4.6	$2.24
300	105	.08	trace	nil	.001	trace	nil	2.0	$0.51
359.5	59.5	.08			.004	trace	nil	2.4	$0.59
									359.5 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs
Hole Number CS-4
Spudded 3-17-64
Completed
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1									
130	129	.04			.01	trace	trace	3.2	$ .52
135	5	.20			.003	trace	trace		$1.28
165 (80'@ .40%)	30	.56	trace	nil	.01	trace	.01	3.2	$3.99
185	20	.24			.005	.02	.005	2.2	$1.78
210	25	.39			.0075	trace	trace	2.1	$2.55
260	50	.10			.001	trace	trace	2.3	$ .63
									260 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-5
Spudded 3-28-64
Completed 4-3-64
Total Depth 175.3 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2	2								
98	96	.05			.002	trace	trace	2.8	$ .36
105	7	.19			.005	trace	trace		$1.28
141	36	.49			.002	.02	trace	2.5	$3.03
175.3	34.3	.10			.001	trace	trace	2.2	$ .63
									175.3 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A6
Spudded 4-6-64
Completed 4-20-64
Total Depth 325.2 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2.7									
170	167.3	.05			.011	tr	tr	3.1	$ .61
185	15	.19			.014	.02	tr	3.1	1.56
230	45	.57	110' @ 0.35%		.004	tr	tr		3.53
280	50	.21			.009	tr	tr	3.2	1.51
325.2	45.2	.10			.004	tr	tr	2.6	.71
									325.2 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A7
Spudded 4-20-64
Completed 4-30-64
Total Depth 263.9'
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

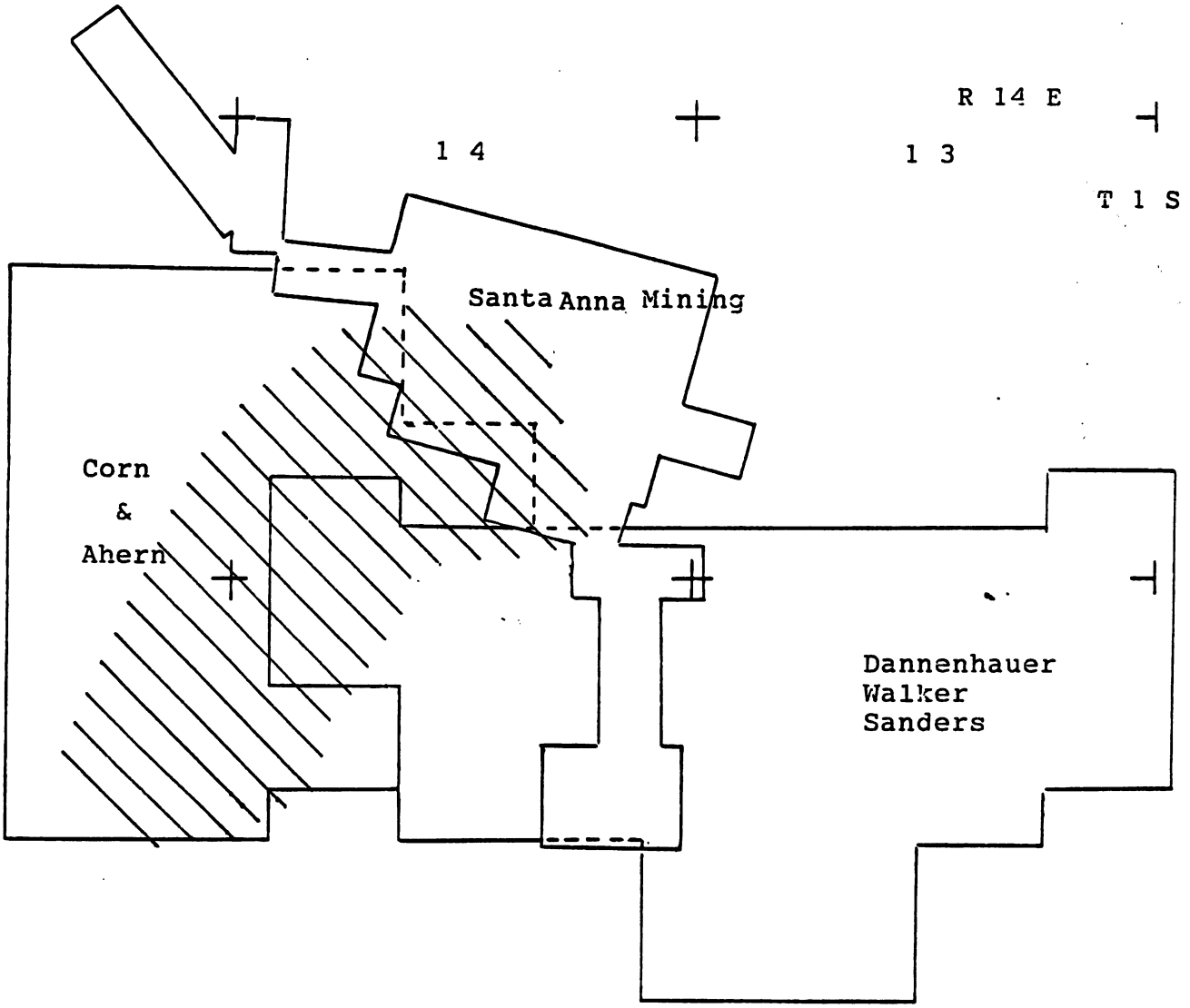
Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
21									
135	114	.06			.003	trace	.055	3.0	$2.37
190	55	.15			.005	trace	.006	4.1	$1.25
255	65	.23			.005	trace	.003	3.8	$1.63
263.9	8.9	.11							$ .66
									263.9' is
									end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

LAND MAP

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



General Area of Favorable Potential
for Leachable Copper Mineralization

CORN & AHERN

CONSULTING GEOLOGISTS
8425 Desert Steppes Dr.
Tucson, Arizona 85710
(602) 298-1770

October 29, 1991

Gary Parkinson
Cambior, Inc.
4949 South Syracuse St.
Suite 4200
Denver, Colorado 80237

NOV - 4 1991

Dear Gary:

Attached is a brief summary and some data on the Copper Springs Canyon prospect near Pinto Valley. The chalcocite and oxide copper mineralization at Copper Springs Canyon could provide an additional source of leachable copper in the vicinity of the Cactus-Carlotta deposit.

The chalcocite blanket on the west side of the alteration system is characterized by sooty chalcocite coating pyrite and is self-leaching. The copper in the chalcocite blanket has migrated downslope and has been precipitated as oxide copper minerals at lower elevations at the outer edge of the pyritic alteration. Kerr-McGee drilled seven holes on the prospect in 1964, but unfortunately I don't know the exact location of the old Kerr-McGee drill holes. Hole CS-1 is probably in low-sulfide pyritic alteration in the NW¼ of Sec. 24 , and Hole CS-2 reflects primary chalcopyrite in potassic alteration in the SE¼ of Sec. 14. The five holes drilled in the chalcocite blanket are on the north slope of the mountain in the south ½ of Sec. 14 with CS-4 at lower elevations and CS-A-7 toward the top of the slope.

The oxide copper mineralization at lower elevations at the outer edge of the chalcocite blanket could have substantial potential and has never been evaluated by previous drilling.

Sincerely,

Russell M. Corn

SUMMARY

COPPER SPRINGS CANYON, SUMMIT MINING DISTRICT, GILA COUNTY, ARIZONA

General

The Copper Springs Canyon prospect has potential for a substantial tonnage of open-pit, readily-leachable, oxide copper and chalcocite mineralization in a self-leaching chalcocite blanket and adjacent down-slope zone of oxide copper mineralization. The prospect is part of a large porphyry copper alteration system located approximately five miles south of Inspiration that was not thoroughly evaluated by previous exploration efforts. The alteration-mineralization system consists of a concentrically zoned pattern of pyritic-phyllic and potassic alteration covering an area of approximately five square miles. The pattern has been disrupted by faulting with a large area of high-sulfide, pyritic-phyllic alteration juxtaposed against low-sulfide potassic alteration.

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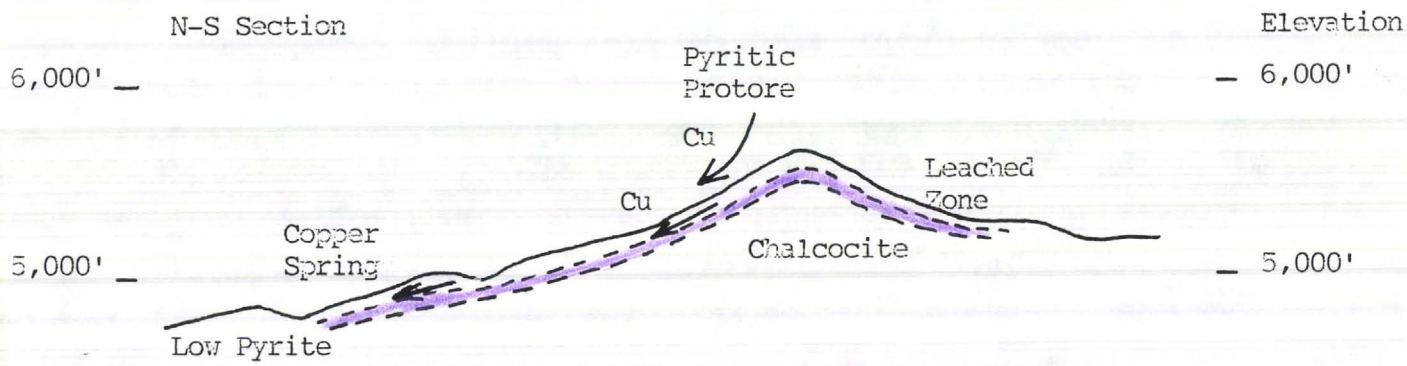
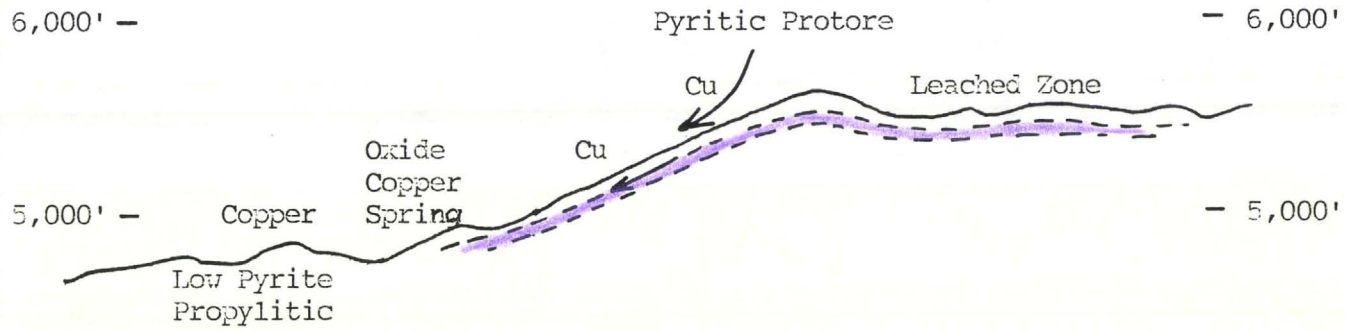
Prepared by: Russell M. Corn

September 26, 1990





E-W Section

Scale
1 inch = 1,000'
H = V

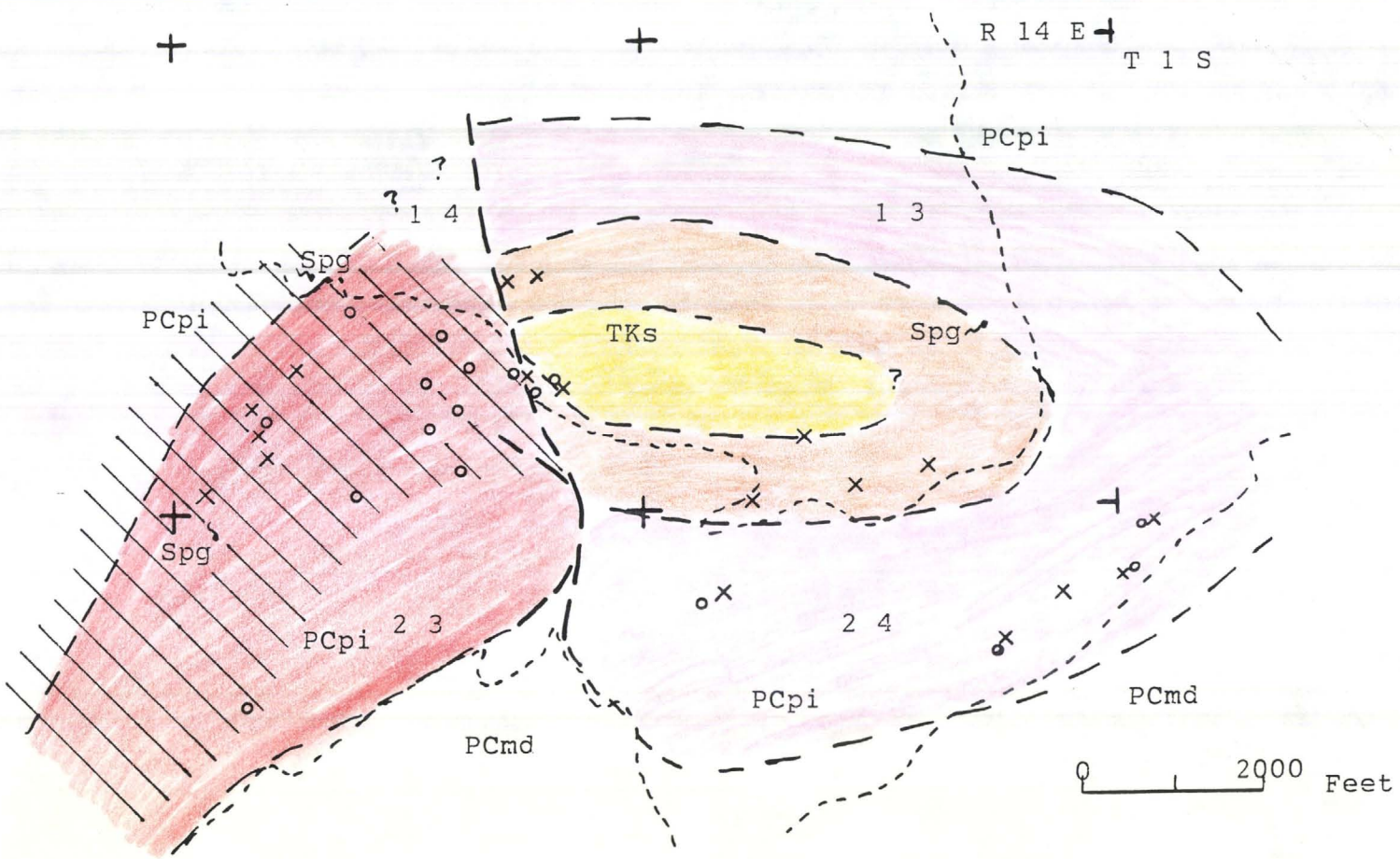
Sections Through Pyritic Protore

At Copper Springs Canyon

Illustrating Copper Migration

Chalcocite Enrichment and Oxide Copper Mineralization

GENERALIZED ALTERATION PATTERN
COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



ALTERATION

- Low sulfide Potassic
- Potassic - Phyllic zone of numerous quartz-sericite-K feldspar veinlets
- High sulfide Phyllic-Pyritic
- Low sulfide Phyllic-pyritic

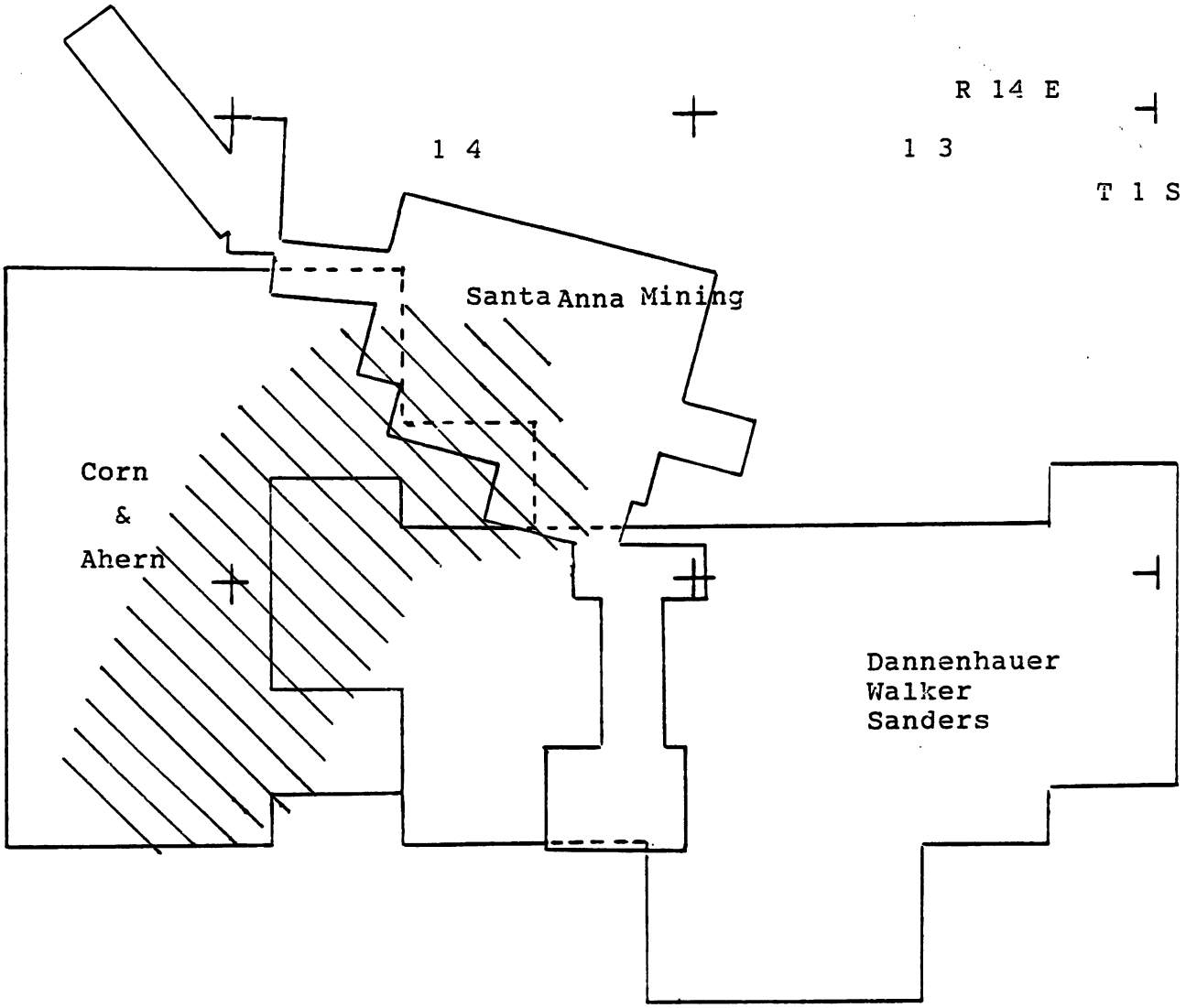
General Area of Favorable Potential for Leachable Copper Mineralizaion

- ∘ Drill Hole
- X Oxide copper occurrence
- Spg Copper spring
- Tks Schultze granite
- PCpi Pinal Schist
- PCmd Madera diorite

R.M. Corn
April, 1990

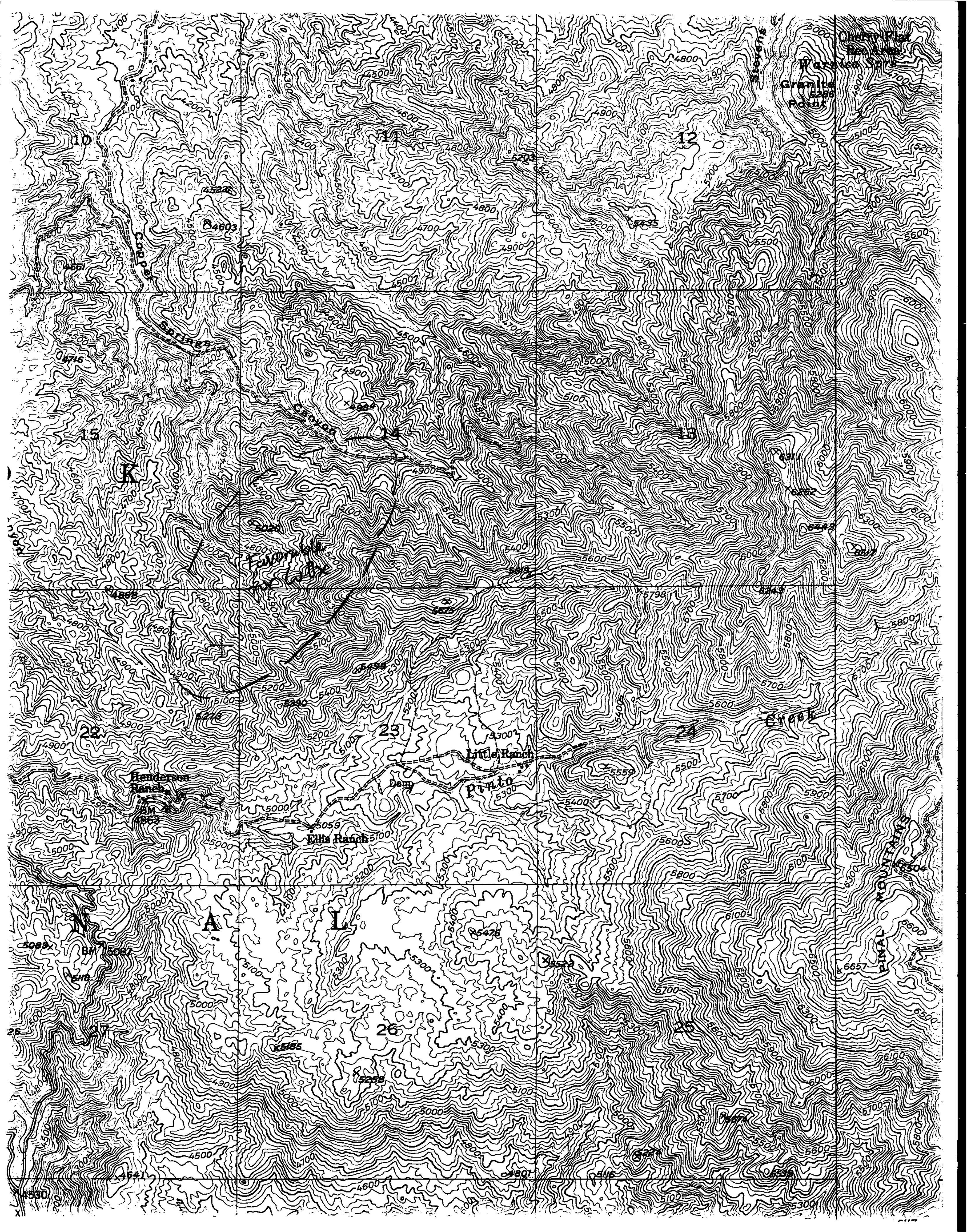
LAND MAP

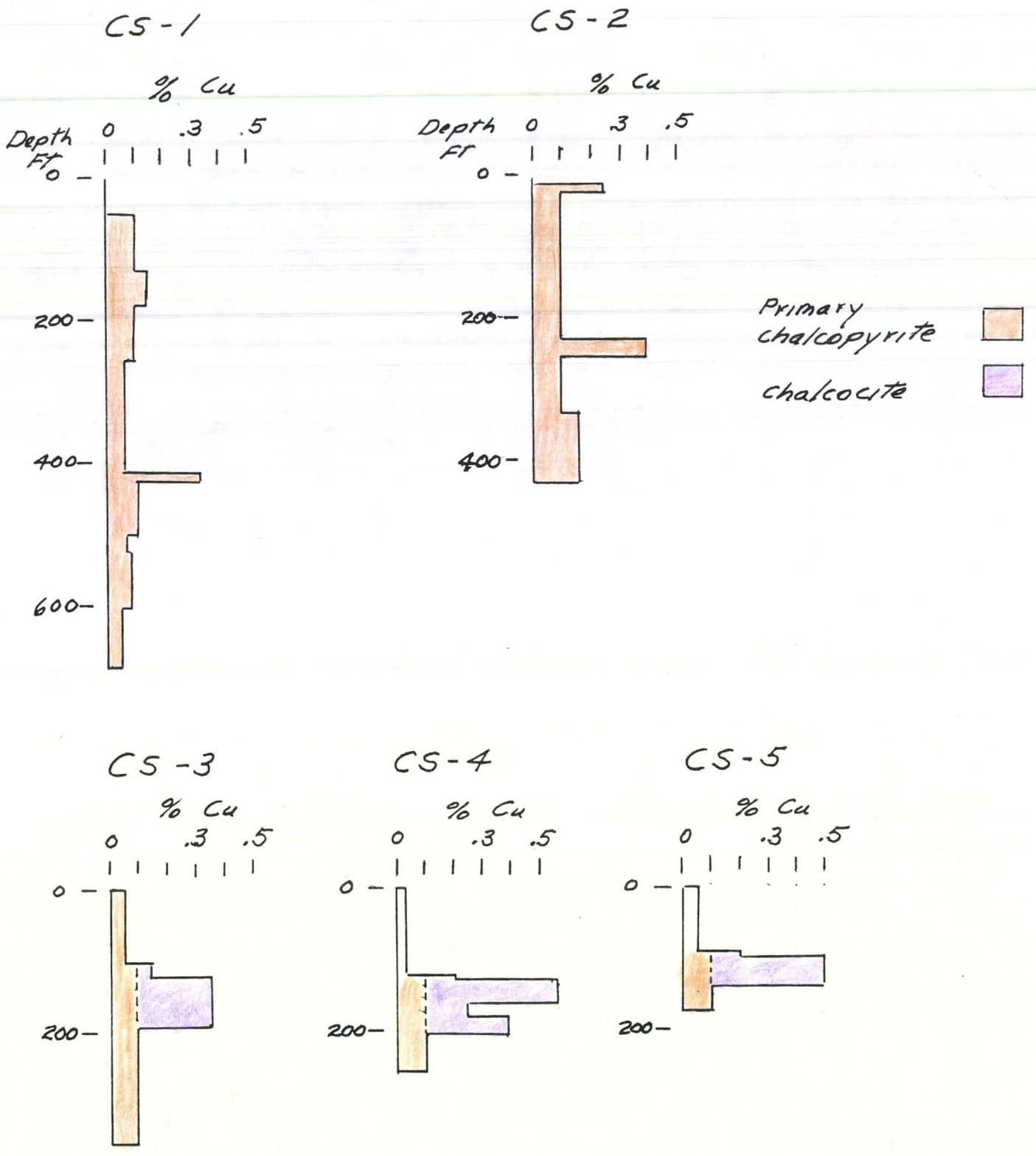
COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



General Area of Favorable Potential
for Leachable Copper Mineralization

CuOx at lower edge of chalcocite blanket
Primary mineralization is pretty low grade, ie ~.15%


Copper
Springs
Canyon
Pinto
Creek
Little Ranch
Henderson Ranch
Ellis Ranch
Dam
Granite Point
Stevens
PINAL MOUNTAINS
K
N
A
L
10
11
12
15
14
13
22
23
24
27
26
25

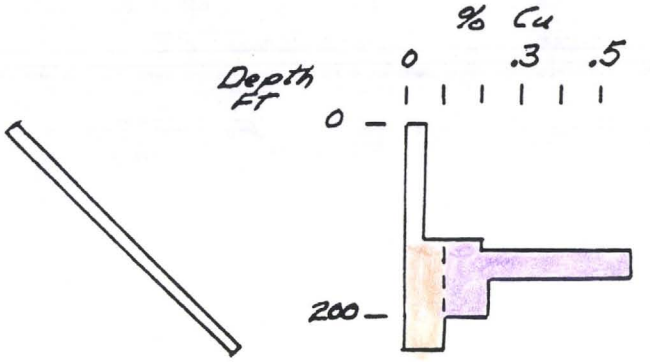


Chalcocite Mineralization and Copper Values

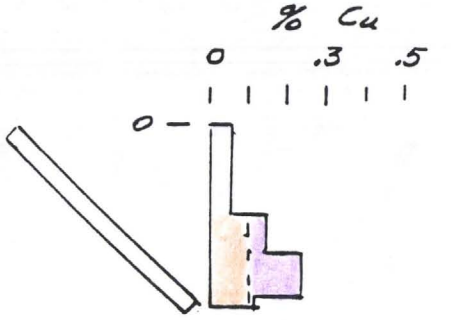
Kerr-McGee Drill Holes

Copper Springs Canyon, Gila County, Arizona

CS - A6



CS - A7



KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-1
Spudded 1-8-64
Completed 2-17-64
Total Depth 692 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
50	50								
125	75	.10	nil	.20	.0005	.36	trace	3.5	$1.49
173	48	.13	nil	.20	.0005	.36	trace	2.6	$1.67
253	80	.10	nil	none	.0005	.30	none	2.7	$0.99
412	159	.06	nil	none	.001	.20	none	2.5	$0.65
421	9	.33	nil	none	none	.30	.02	2.4	$3.07
501	80	.11		.	.003	.10	none	2.9	$0.87
526	25	.06			none	.25	trace	2.3	$0.69
605	79	.08			none	.20	none	2.5	$0.74
692	87	.05	.05	none	none	.25	none	2.4	$0.74
									692 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-2
Spudded 2-18-64
Completed 3-2-64
Total Depth 429.8 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
10	10								
20	10	.23				.20	trace		$1.64
30	10	.09				.20	trace		$0.80
40	10	.10				.10	trace		$0.73
232.4	192.4	.09	.05	.04	.002	.30	nil		$1.18
252	19.6	.34				.10	nil		$2.17
330	78	.09	.05	nil	.002	.24	trace	3.4	$1.02
429.7	99.7	.16			.001	.26	trace	2.3	$1.33
									429.7 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-3
Spudded 3-7-64
Completed 3-13-64
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1.3	1.3								
110	108.7	.05			.001	trace	trace	2.2	$0.33
130	20	.14				trace	trace	2.2	$0.84
195	65	.35	.05	nil	.001	trace	nil	4.6	$2.24
300	105	.08	trace	nil	.001	trace	nil	2.0	$0.51
359.5	59.5	.08			.004	trace	nil	2.4	$0.59
									359.5 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs
Hole Number CS-4
Spudded 3-17-64
Completed
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
1									
130	129	.04			.01	trace	trace	3.2	$ .52
135	5	.20			.003	trace	trace		$1.28
165	30	.56	trace	nil	.01	trace	.01	3.2	$3.99
185	20	.24			.005	.02	.005	2.2	$1.78
210	25	.39			.0075	trace	trace	2.1	$2.55
260	50	.10			.001	trace	trace	2.3	$ .63
									260 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-5
Spudded 3-28-64
Completed 4-3-64
Total Depth 175.3 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2	2								
98	96	.05			.002	trace	trace	2.8	$ .36
105	7	.19			.005	trace	trace		$1.28
141	36	.49			.002	.02	trace	2.5	$3.03
175.3	34.3	.10			.001	trace	trace	2.2	$ .63
									175.3 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A6
Spudded 4-6-64
Completed 4-20-64
Total Depth 325.2 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2.7									
170	167.3	.05			.011	tr	tr	3.1	$ .61
185	15	.19			.014	.02	tr	3.1	1.56
230	45	.57			.004	tr	tr		3.53
280	50	.21			.009	tr	tr	3.2	1.51
325.2	45.2	.10			.004	tr	tr	2.6	.71
									325.2 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A7
Spudded 4-20-64
Completed 4-30-64
Total Depth 263.9'
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
21									
135	114	.06			.003	trace	.055	3.0	$2.37
190	55	.15			.005	trace	.006	4.1	$1.25
255	65	.23			.005	trace	.003	3.8	$1.63
263.9	8.9	.11							$ .66
									263.9' is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

31, 21 4

(602) 340-9579

11/27 Talk w/ Amron Hallom - Gila River Indian - said he has received letter, but needs to talk w/ some else at tribe to see if would consider mining - he will call me next week to see - will call him.

11/27 Fred Borco, Borco ~~Inc~~ Inc., Globe

building offices at Rinto Valley
does lots of concrete work.
sounds like a good guy, will be sending
my info on his business
- has building just refurbished in Miami by
Hidings.

11/27 Talk w/ Ross Corn re Copper Spring property -
he says that road to property is now
fixed up, can drive all the way in.

11/27 Talk w/ Martin McKenna Will meet @
Simply reflecting prop 8:30 Thursday
12th of December
in Apache Jct.

4 S., 11 E.,

Talked vaguely about confidentiality
agreement - ventured that had potential problem
w/ us possibly making deals on other properties in
the area - did not want to place us in a
bad situation - left this up in the air

6/91 Copper Spring Cu Prospect

for Ross Corn – Dick Dhein

visit new area in 6/19/91 – road washed out ~ 1 mi from area

– Problems – drilled by several companies, apparently with little success, apparently other records not available

– current access problems, roads washed out, difficult terrain for mining

– lack of flat ~~spots~~ areas for leveling in the area

– ~~town~~ Kerr-McGee drilling indicates that blanket is quite thin and low grade, ave 45' thick where present, ~.30-.35% grade

Conclusion – Turn down for now, keep file info and re-visit as Carlota develops

Recent

Gravel, sand, and

Coarse residual det

Pliocene and Pleistocene

QTg, *loose to firmly fill deposits, older*

QTgt, *interbedded tu*

Brownish-gray

Massive sheet of pi of dacitic compos thickness

Local accumulation

Tsg, *stock of porp into granite porp*

Tgp, *granite porph the main stock*

May include some quadrangle

Tertiary

20'

the Lorraine (6) and Crenshaw (7), both of which have yielded some shipping ore; the Red Rock (13); Catclaw (12); and Doak (15). The Doak and some of the Catclaw veins contain a little galena and sphalerite.

MADERA PROSPECT

The Madera prospect (9) lies between the southeast extremity of the Schultze granite outcrop and the mass of Madera diorite to the south; it is an isthmuslike outcrop of Pinal schist which in much of the area extending from the Ellis vein at the east to the west boundary of secs. 14 and 23, T. 1 S., R. 14 E. has the characteristics of "capping" formed by oxidation and leaching of included grains and veinlets of metallic sulfides. The boxwork and residual limonite indicate a great preponderance of pyrite, but the former presence of some copper sulfides is proved by copper stains in a few places where veinlets are especially large or abundant.

In 1948, five churn-drill holes were sunk to explore beneath the outcrops that appeared most promising. Three of the holes passed through the usual zones typical of disseminated-sulfide deposits that have undergone near-surface alteration by weathering: an oxidized and partly leached zone overlying a zone of chalcocite enrichment that grades downward into rock containing only primary sulfides. The intersections of the enriched zone, totaling 125 feet in length, averaged about 0.42 percent copper; whereas the protore, represented by intersections totaling about 1,000 feet in length, averaged about 0.14 percent copper.

The other two holes showed disseminated sulfides of fairly uniform copper content and slight replacement by chalcocite throughout their length.

Although no part of the deposit can be regarded as ore, the total volume of mineralized rock nevertheless contains a large amount of copper.

The Ellis vein (10) at the east end of the mineralized area contains quartz, pyrite, chalcopyrite, and also a relatively large proportion of both fine- and coarse-grained molybdenite. It is one of the very rare examples in this region of a hypogene vein deposited in a northwest-trending facture.

POWERS GULCH DEPOSIT

In a strip extending for a distance of about 1 mile along the edge of the dacite west of Powers Gulch (1), the schist is lightly stained by copper silicates and carbonates. These copper minerals occur as impregnations and discontinuous veinlets ranging from paper thin to nearly an inch in width. The schist host rock shows no evidence of hydrothermal alteration or of the former presence of sulfide minerals except in two small, widely separated areas, one of which is just north of the northwest corner of the quadrangle and the other is near the granite that crops out at the edge of the dacite about 4,500 feet to the south.

Although the copper content of the schist is too low to be of economic importance, this widespread occurrence of exotic copper minerals has attracted considerable attention as a possible indication of a hypogene copper deposit nearby. In 1930–31, diamond-drill holes were sunk through the adjacent dacite, two in the Haunted Canyon quadrangle near the common corner of the quadrangles and three opposite the granite outcrops at the south end of the mineralized area. The holes passed through 488 to 1,235 feet of dacite and through 70 to 410 feet of the underlying schist and granite.

Most of the samples recovered from the schist and granite were described in the driller's logs as "capping" and contained less than 0.3 percent copper. In one intersection 156 feet long, the samples averaged 0.54 percent copper, with assays ranging from 0.3 to 1.2 percent. No sulfides were found in any of the samples.

In 1956, the copper-bearing schist was sampled by 10 short drill holes distributed in an interval of about 4,500 feet near the edge of the dacite. The 10 drill holes totaled about 2,060 feet in length and averaged about 0.15 percent copper. In general, the copper content of the rock decreased with depth, and most of the holes bottomed in practically barren rock.

The absence of Whitetail conglomerate between the schist and the dacite indicates that this area stood relatively high during the period of erosion that preceded the dacite eruption; therefore, a hypogene copper deposit would have been exposed to weathering during this time and could have been enriched.

TUNGSTEN AND MOLYBDENUM DEPOSITS

SWEDE MINE

The Swede vein (2) traverses an irregular tongue of schist that probably is a pendant projecting into the granite at the western edge of the stock. The vein was deposited along a shear zone which, at least in some segments, is slightly discordant with the bedding of the schist. Along most of its extent the zone is a poorly defined stockwork of thin, discontinuous quartz-pyrite veinlets. Replacement by vein matter is most complete along a segment in which the shear zone is intersected by two narrow dikes that are offshoots of the main granite mass. This segment contains a small ore shoot which has been developed by an adit crosscut and drifts. A few tons of tungsten con-

GAP

SUMMARY

COPPER SPRINGS CANYON, SUMMIT MINING DISTRICT, GILA COUNTY, ARIZONA

General

The Copper Springs Canyon prospect has potential for a substantial tonnage of open-pit, readily-leachable, oxide copper and chalcocite mineralization in a self-leaching chalcocite blanket and adjacent down-slope zone of oxide copper mineralization. The prospect is part of a large porphyry copper alteration system located approximately five miles south of Inspiration that was not thoroughly evaluated by previous exploration efforts. The alteration-mineralization system consists of a concentrically zoned pattern of pyritic-phyllic and potassic alteration covering an area of approximately five square miles. The pattern has been disrupted by faulting with a large area of high-sulfide, pyritic-phyllic alteration juxtaposed against low-sulfide potassic alteration.

Location

Sections 13, 14, 15, 22, 23, 24, T1S, R14E, Sec 14, T1S, R14½E, Summit Mining District, Gila County, Arizona.

Land

There are three groups of unpatented claims covering most of the mineralized area.

1. Lonesome Pine & Ester group of 20 claims - Santa Anna Mining Co.
2. Turdy group of 46 claims - Ed Dannenhauer, A.B. Walker, Charlotte & Buster Sanders
3. Aqua Verde group of 30 claims - Richard Ahern & Russell M. Corn.

Previous Exploration

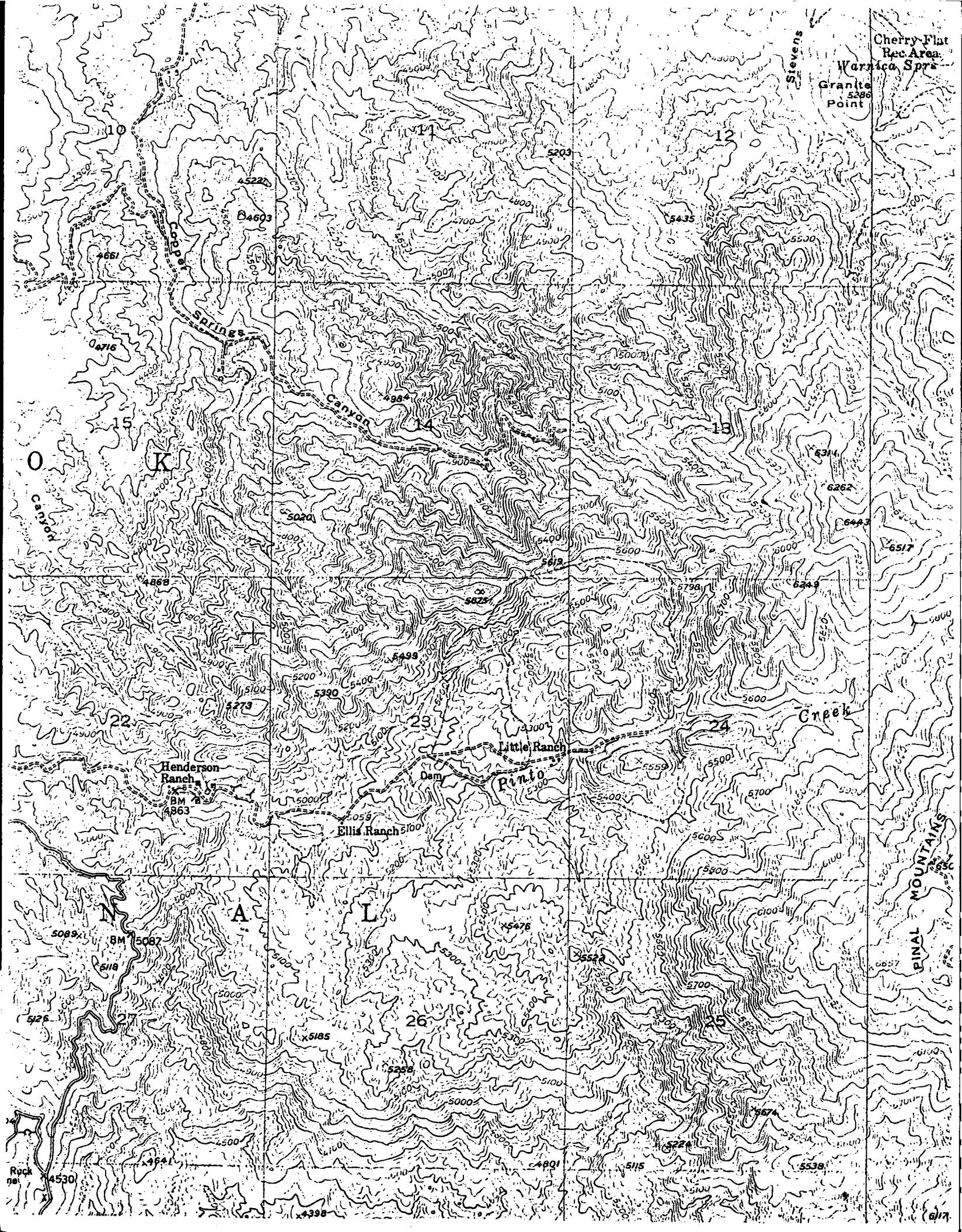
Previous exploration includes five churn drill holes, drilled in 1948, five or six widely-spaced holes drilled by Bear Creek in the late 1950's, seven shallow holes drilled by Kerr-McGee in 1964 and several holes drilled by Cities Service in the late 1960's. This drilling is concentrated on a limited part of the alteration system, and was carried out prior to the recent advances in heap leaching and SX-EW technology. Available data on this drilling includes N.P. Peterson's (USGS Bull. 1141-H) summary of the churn drilling, and composite assay logs for the Kerr-McGee drill holes. Although drill hole locations are not definitely known, this data indicates the presence of widespread sub-economic primary copper mineralization and a chalcocite blanket 40 to 50 feet thick averaging approximately .40% copper in the area of high-pyrite phyllic alteration.

Exploration Potential

Copper mineralization of economic interest at Copper Springs Canyon occurs as a readily leachable chalcocite blanket and adjacent, downslope oxide copper mineralization that have not been evaluated by previous drilling. Limited data suggests a tonnage potential in excess of 20 million tons at .40% Cu for the chalcocite blanket. The blanket has migrated laterally and down-slope to be precipitated as both chalcocite and oxide copper minerals at lower elevations. The downslope movement of soluble copper should have resulted in a greater concentration of copper at lower elevations, with increased thickness and grade in the lower part of the chalcocite enriched zone and oxide copper minerals in the adjacent area of little or no pyrite. The potential of leachable chalcocite and oxide copper mineralization in this more favorable zone has not been tested by previous drilling.

Prepared by: Russell M. Corn

September 26, 1990


Cherry Flat
Rec Area
Warnica Spr
Granite
5286
Point
Stevens
Copper
Springs
Canyon
Canyon
Creek
Little Ranch
Dam
Pinto
Henderson
Ranch
BM
4863
Ellis Ranch
FINAL MOUNTAINS
BM
5087
Rock
10
11
12
13
14
15
22
23
24
25
26
27
O
K
N
A
L
4522
4603
4661
4716
5203
5435
4984
5020
5619
4868
5625
5798
6314
6262
6443
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6249
5499
5390
5273
5559
5476
5522
5089
5118
5126
5185
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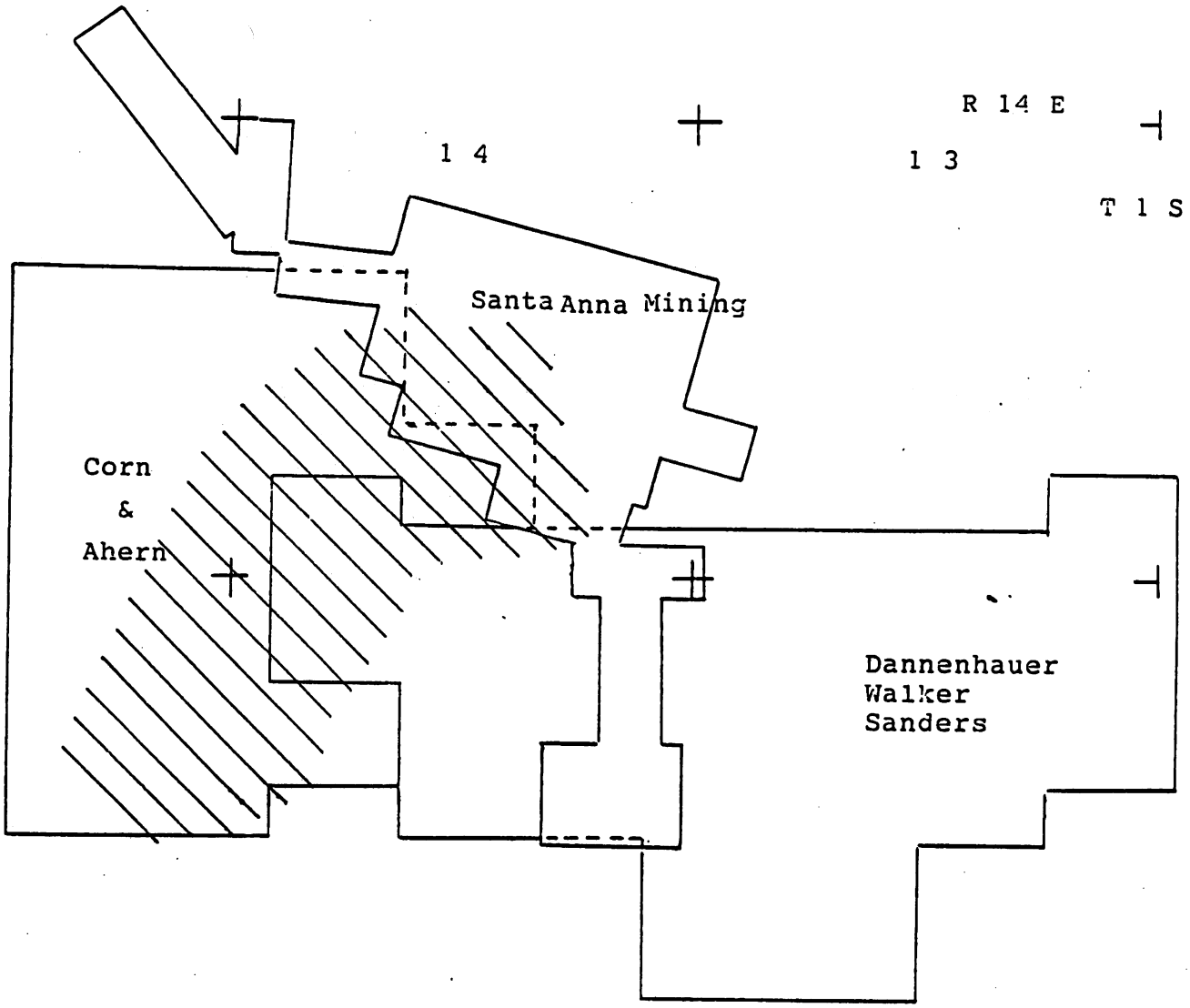
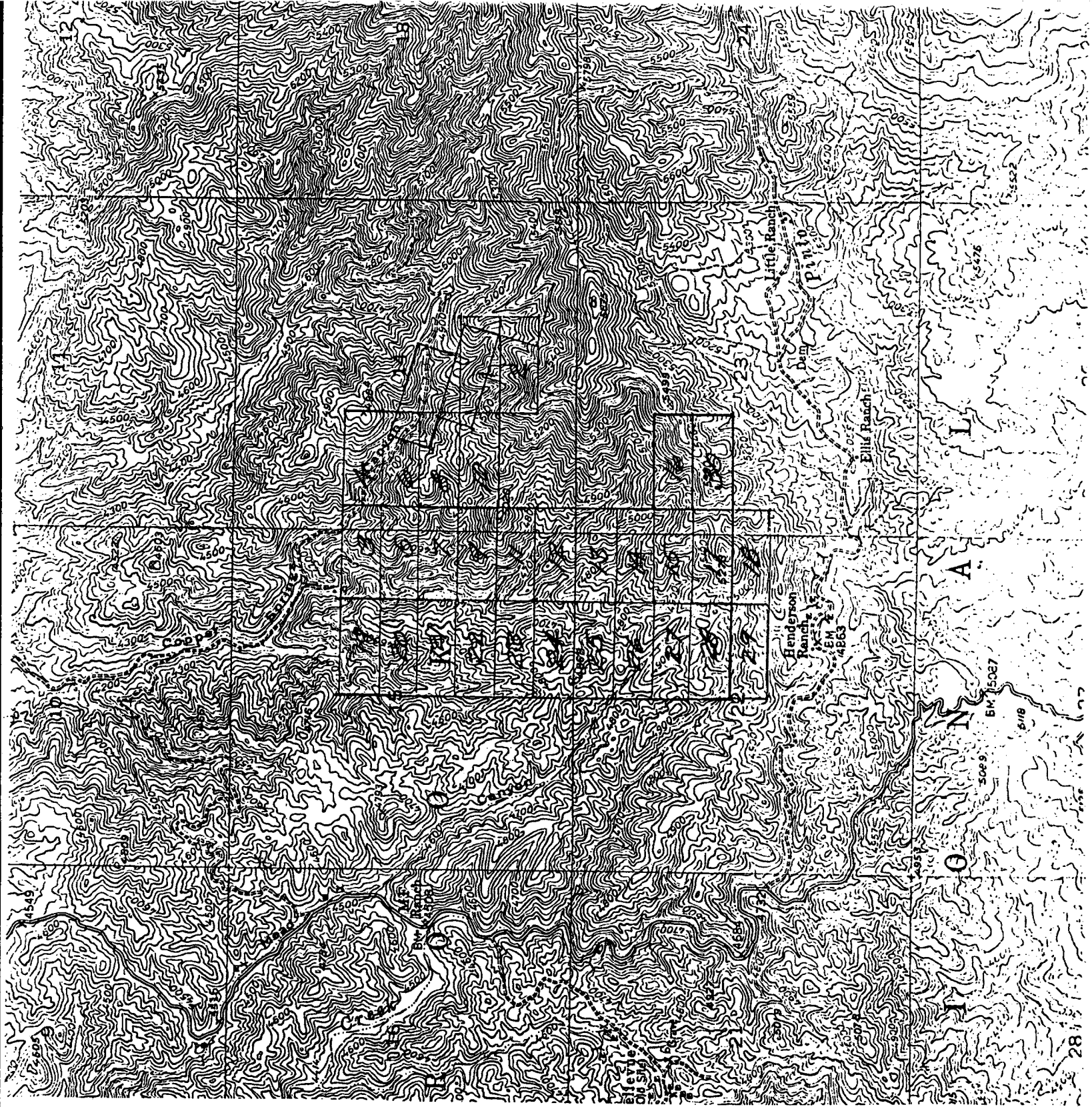
5115
5538
5224
5674

LAND MAP

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



General Area of Favorable Potential
for Leachable Copper Mineralization



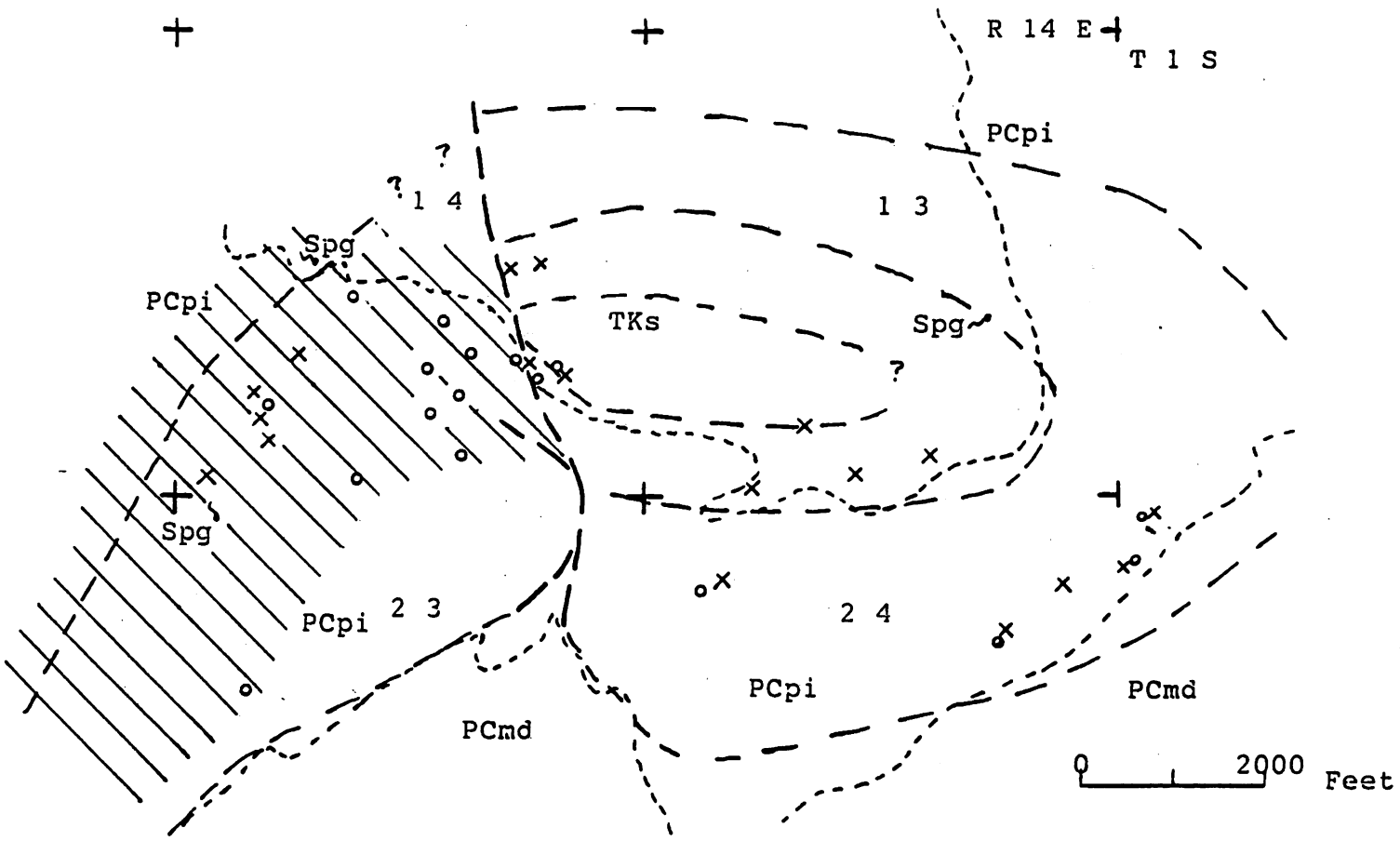
Map of Aqua Verde Claims

Copper Springs Canyon

Summit Mining District, Gila County, Arizona

GENERALIZED ALTERATION PATTERN

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



ALTERATION

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- Potassic - Phyllic zone of numerous quartz-sericite-K feldspar veinlets
- High sulfide Phyllic-Pyritic
- Low sulfide Phyllic-pyritic
- General Area of Favorable Potential for Leachable Copper Mineralizaion

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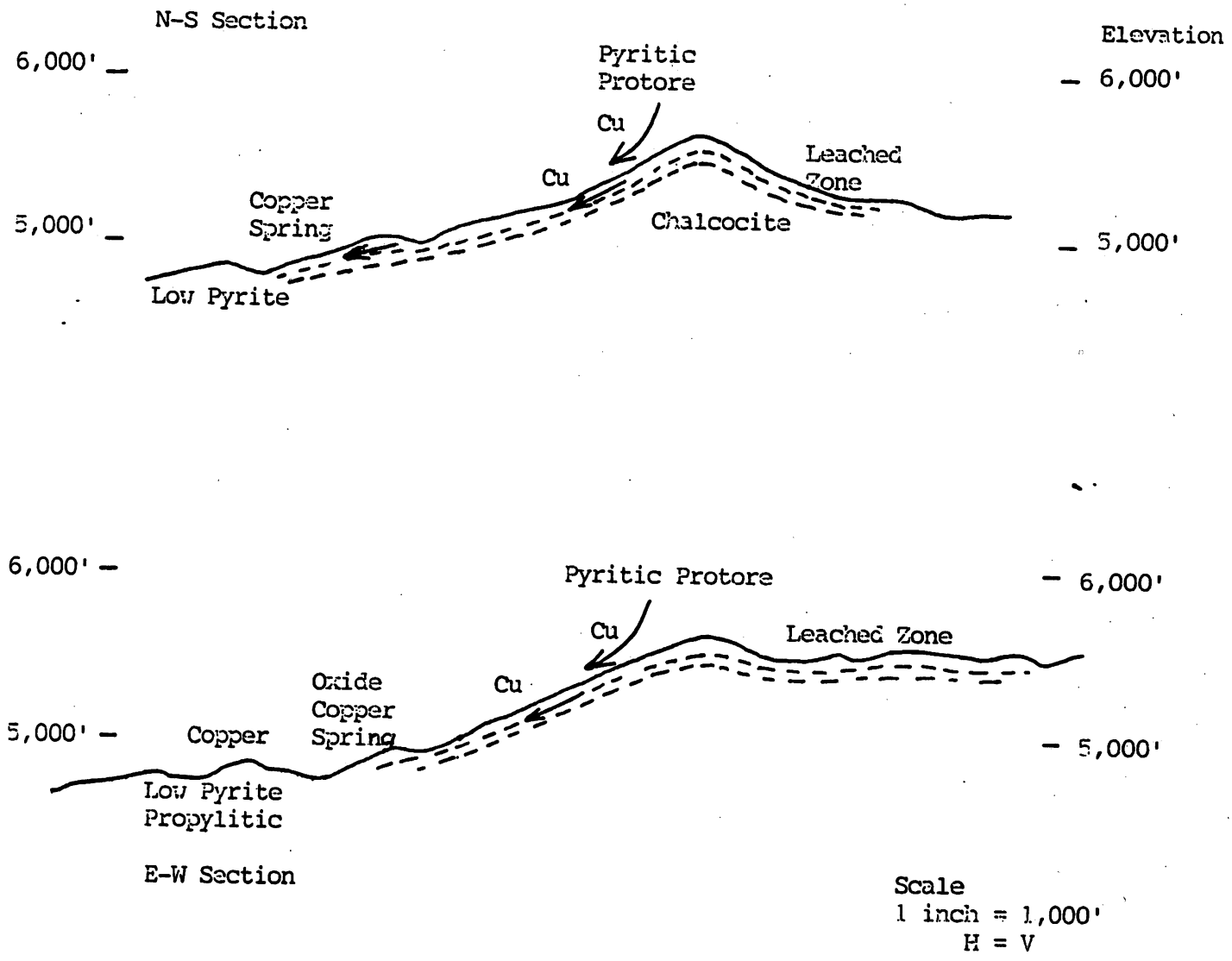
R.M. Corn
April, 1990

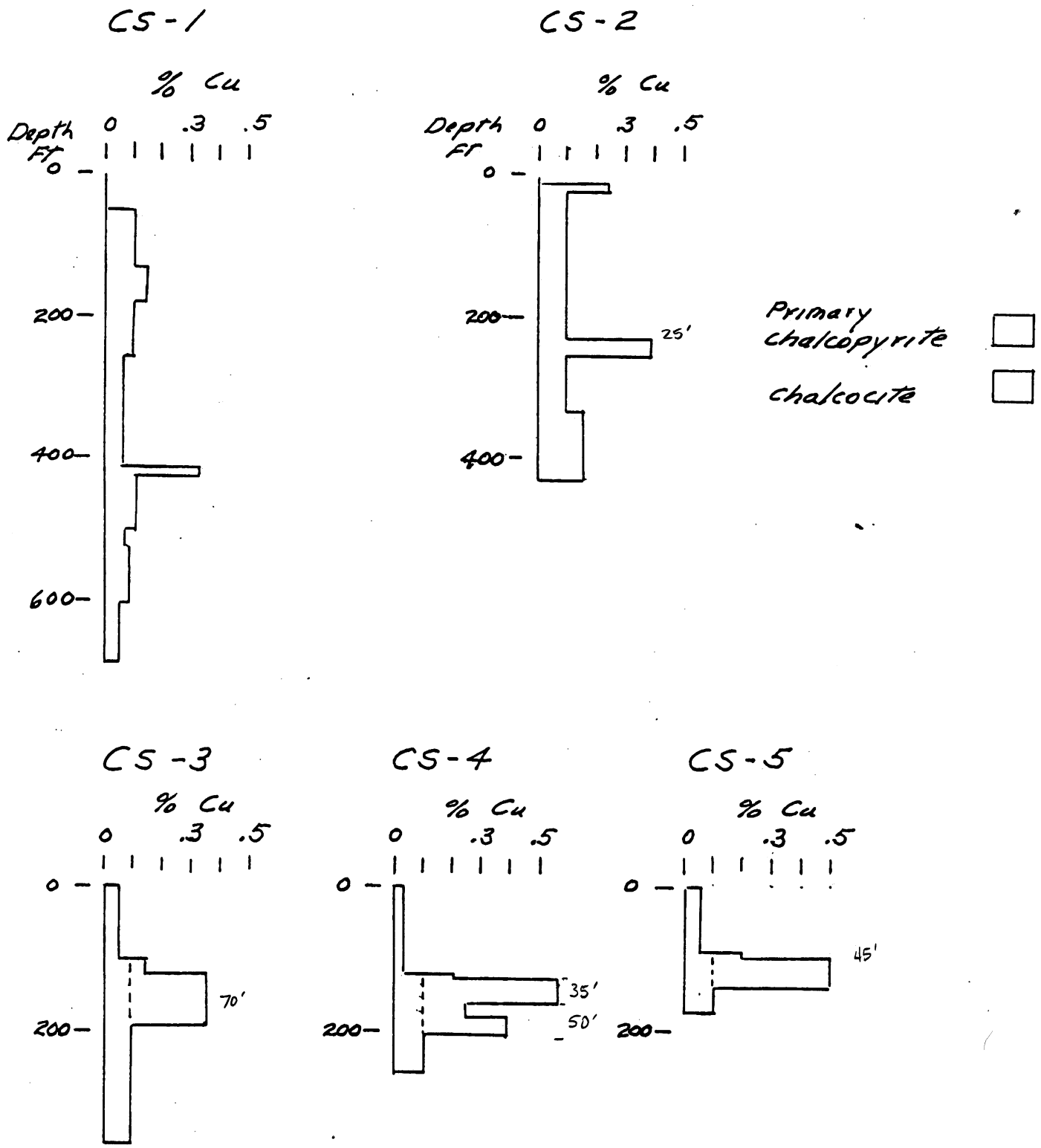


Sections Through Pyritic Protore

At Copper Springs Canyon

Illustrating Copper Migration

Chalcocite Enrichment and Oxide Copper Mineralization

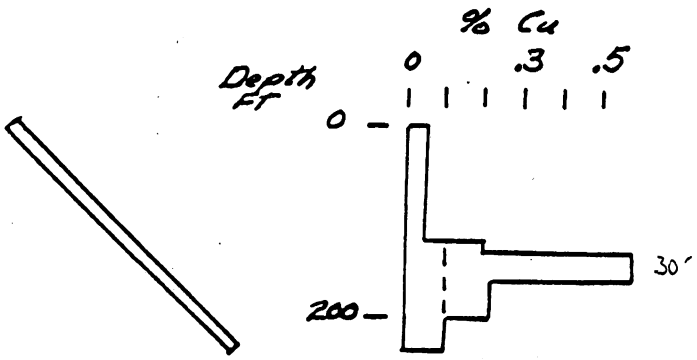


Chalcocite Mineralization and Copper Values

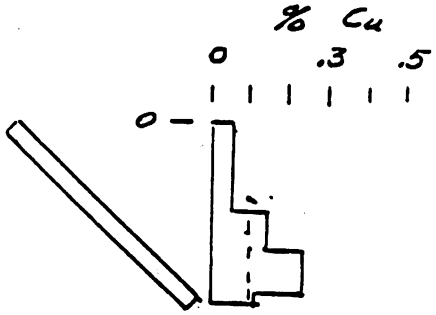
Kerr-McGee Drill Holes

Copper Springs Canyon, Gila County, Arizona

CS - A6



CS - A7



KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-1
Spudded 1-8-64
Completed 2-17-64
Total Depth 692 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals* -

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
50	50								
125	75	.10	nil	.20	.0005	.36	trace	3.5	$1.49
173	48	.13	nil	.20	.0005	.36	trace	2.6	$1.67
253	80	.10	nil	none	.0005	.30	none	2.7	$0.99
412	159	.06	nil	none	.001	.20	none	2.5	$0.65
421	9	.33	nil	none	none	.30	.02	2.4	$3.07
501	80	.11		.	.003	.10	none	2.9	$0.87
526	25	.06			none	.25	trace	2.3	$0.69
605	79	.08			none	.20	none	2.5	$0.74
692	87	.05	.05	none	none	.25	none	2.4	$0.74
									692 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-2
Spudded 2-18-64
Completed 3-2-64
Total Depth 429.8 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
10	10								
20	10	.23				.20	trace		$1.64
30	10	.09				.20	trace		$0.80
40	10	.10				.10	trace		$0.73
232.4	192.4	.09	.05	.04	.002	.30	nil		$1.18
252	19.6	.34				.10	nil		$2.17
330	78	.09	.05	nil	.002	.24	trace	3.4	$1.02
429.7	99.7	.16			.001	.26	trace	2.3	$1.33
									429.7 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-3
Spudded 3-7-64
Completed 3-13-64
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1.3	1.3								
110	108.7	.05			.001	trace	trace	2.2	$0.33
130	20	.14				trace	trace	2.2	$0.84
195	65	.35	.05	nil	.001	trace	nil	4.6	$2.24
300	105	.08	trace	nil	.001	trace	nil	2.0	$0.51
359.5	59.5	.08			.004	trace	nil	2.4	$0.59
									359.5 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs
Hole Number CS-4
Spudded 3-17-64
Completed
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1									
130	129	.04			.01	trace	trace	3.2	$ .52
135	5	.20			.003	trace	trace		$1.28
165	30	.56	trace	nil	.01	trace	.01	3.2	$3.99
185	20	.24			.005	.02	.005	2.2	$1.78
210	25	.39			.0075	trace	trace	2.1	$2.55
260	50	.10			.001	trace	trace	2.3	$ .63
									260 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-5
Spudded 3-28-64
Completed 4-3-64
Total Depth 175.3 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2	2								
98	96	.05			.002	trace	trace	2.8	$ .36
105	7	.19			.005	trace	trace		$1.28
141	36	.49			.002	.02	trace	2.5	$3.03
175.3	34.3	.10			.001	trace	trace	2.2	$ .63
									175.3 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A6
Spudded 4-6-64
Completed 4-20-64
Total Depth 325.2 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
2.7									
170	167.3	.05			.011	tr	tr	3.1	$ .61
185	15	.19			.014	.02	tr	3.1	1.56
230	45	.57			.004	tr	tr		3.53
280	50	.21			.009	tr	tr	3.2	1.51
325.2	45.2	.10			.004	tr	tr	2.6	.71
									325.2 is
									end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A7
Spudded 4-20-64
Completed 4-30-64
Total Depth 263.9'
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
21									
135	114	.06			.003	trace	.055	3.0	$2.37
190	55	.15			.005	trace	.006	4.1	$1.25
255	65	.23			.005	trace	.003	3.8	$1.63
263.9	8.9	.11							$ .66
									263.9' is
									end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

gical Survey

SCALE 1:24000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 25 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1982 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

GN MN 0°02′ 1 MIL 14° 249 MILS

ARIZONA

QUADRANGLE LOCATION

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route U. S. Route State Route

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1982

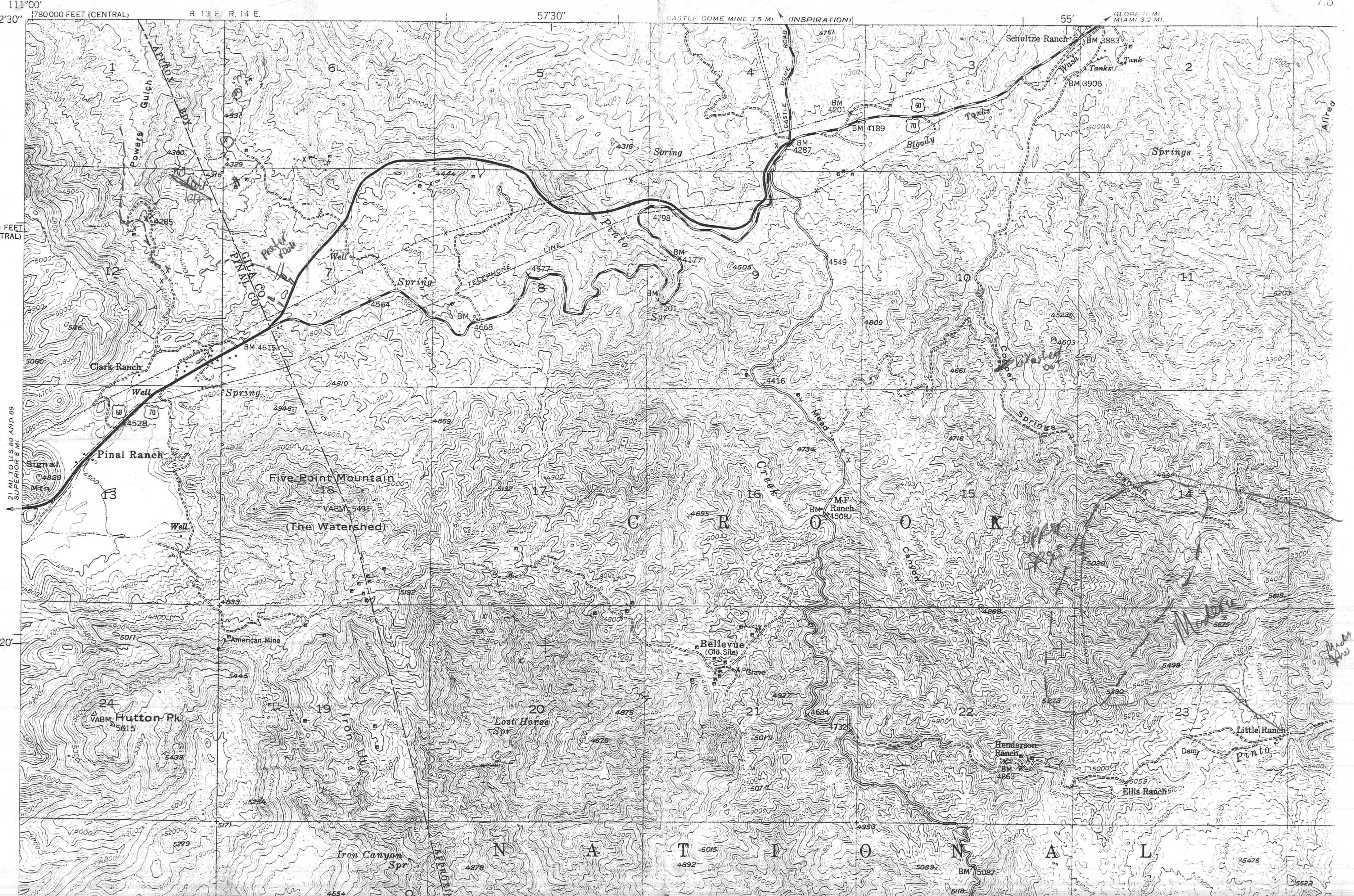
INSPIRATION, ARIZ.

N3322.5—W11052.5/7.5

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

of

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092

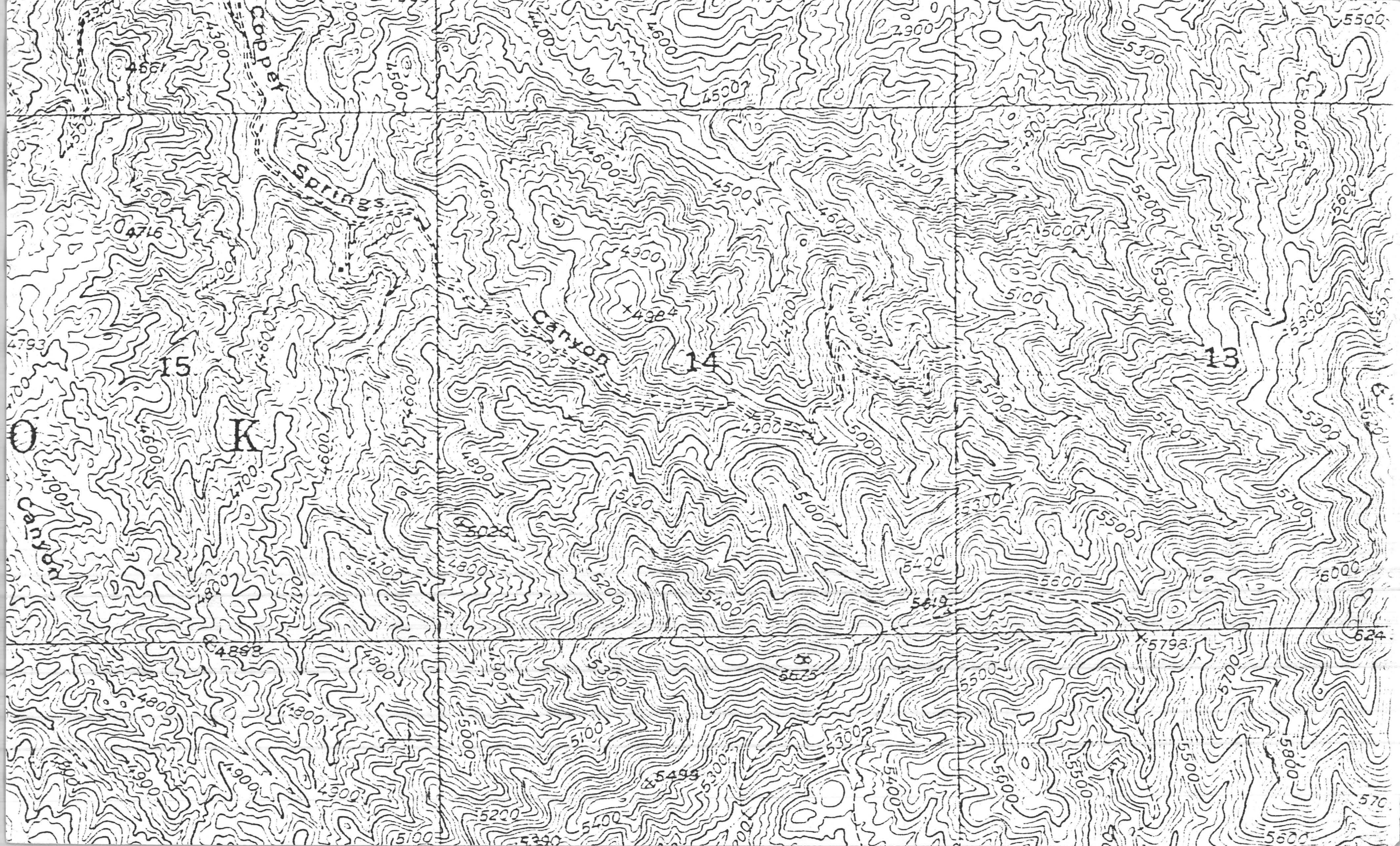

111°00'
33°22'30"
780 000 FEET (CENTRAL)
R. 13 E. R. 14 E.
57'30"
CASTLE DOME MINE 3.5 MI. (INSPIRATION)
55'
GLOBE 11 MI.
MIAMI 3.2 MI.
860 000 FEET (CENTRAL)
20'
21 MI. TO U.S. 80 AND 89
SUPERIOR 8 MI.
Schultze Ranch
BM 3883
BM 3906
Powers Gulch
APPROX. BDY.
GILA CO.
PINAL CO.
Pinto
TELEPHONE LINE
Spring
Springs
Well
Bloody Tanks
Wash
CASTLE DOME ROAD
Clark Ranch
Pinal Ranch
Signal Mtn
Five Point Mountain
VABM 5491
(The Watershed)
Hutton Pk
VABM 5615
American Mine
Iron Mt.
Lost Horse Spr
Bellevue
(Old Site)
Grave
Creek
Mead
MF Ranch
BM 4508
Copper
Canyon
Henderson Ranch
BM 4863
Ellis Ranch
Little Ranch
Dam
Iron Canyon Spr
Allred
C R O O K
N A T I O N A L

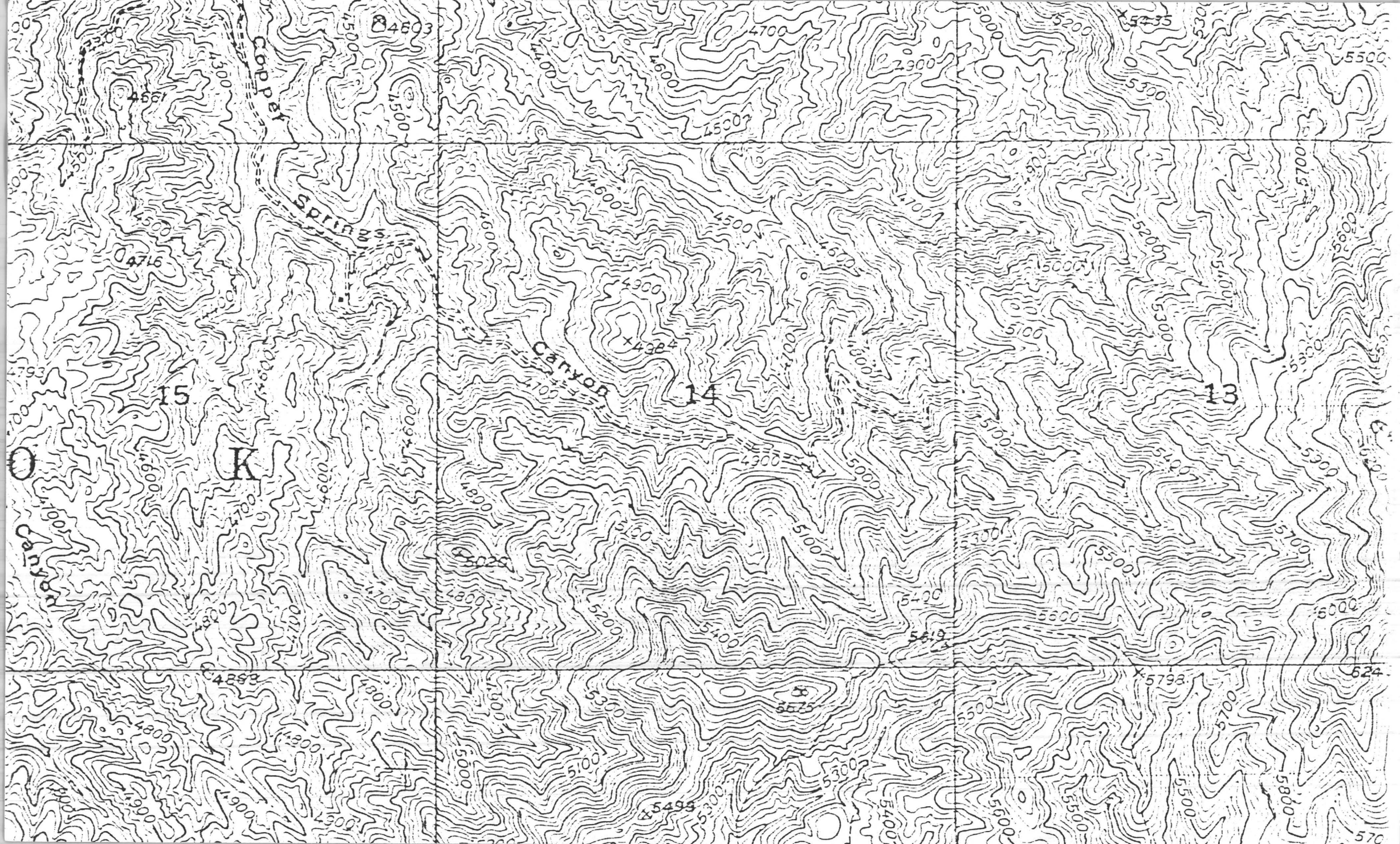

Bellevue
(Old Site)
Grave
Lost Horse
Spr
20
21
4875
4676
4927
4684
4732
5019
5078
4957
4953
5015
4892
5089
4278
N
A
T
I
O
N
Canyon

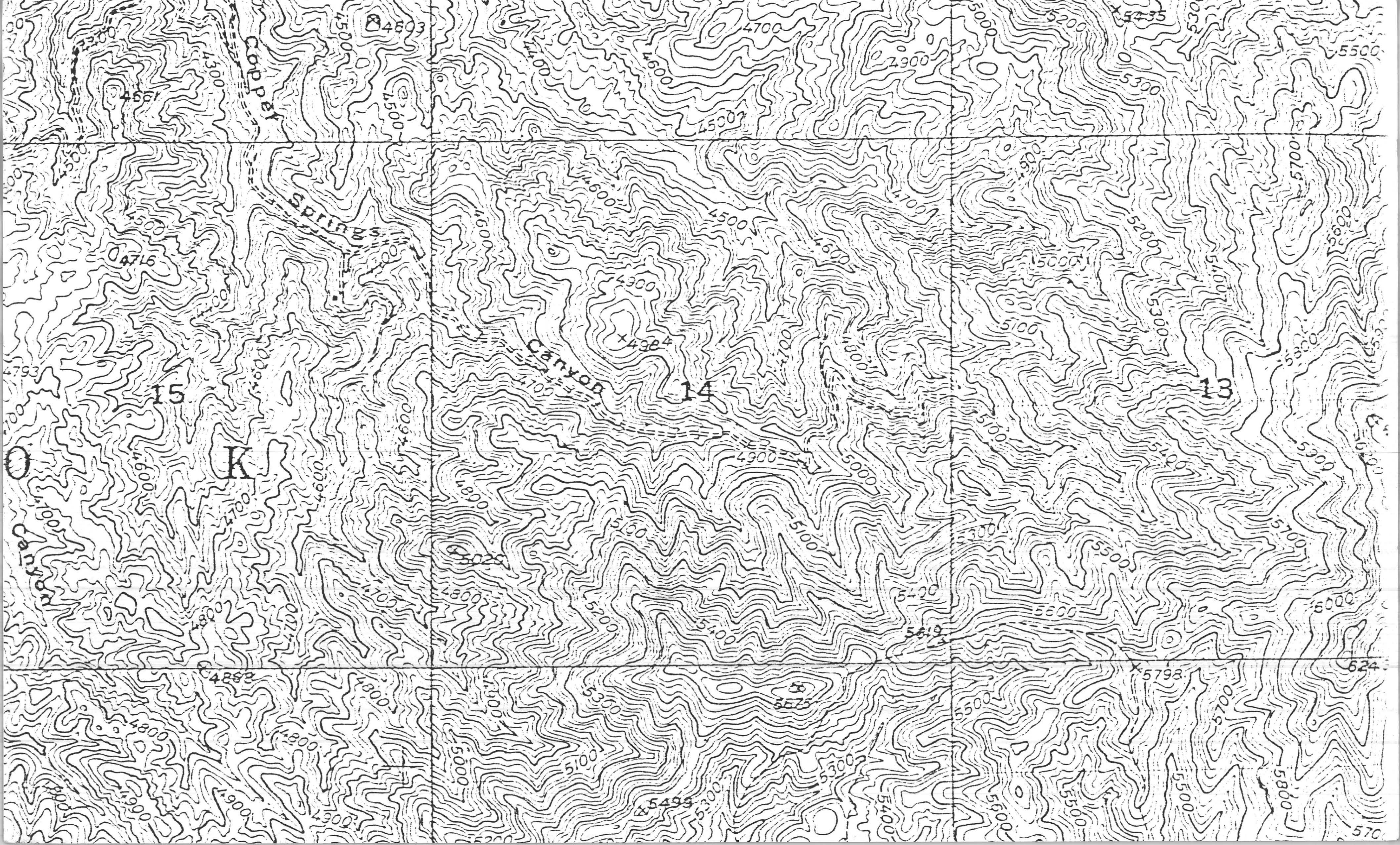
Talk w/
Russ Corn,

11/27/91

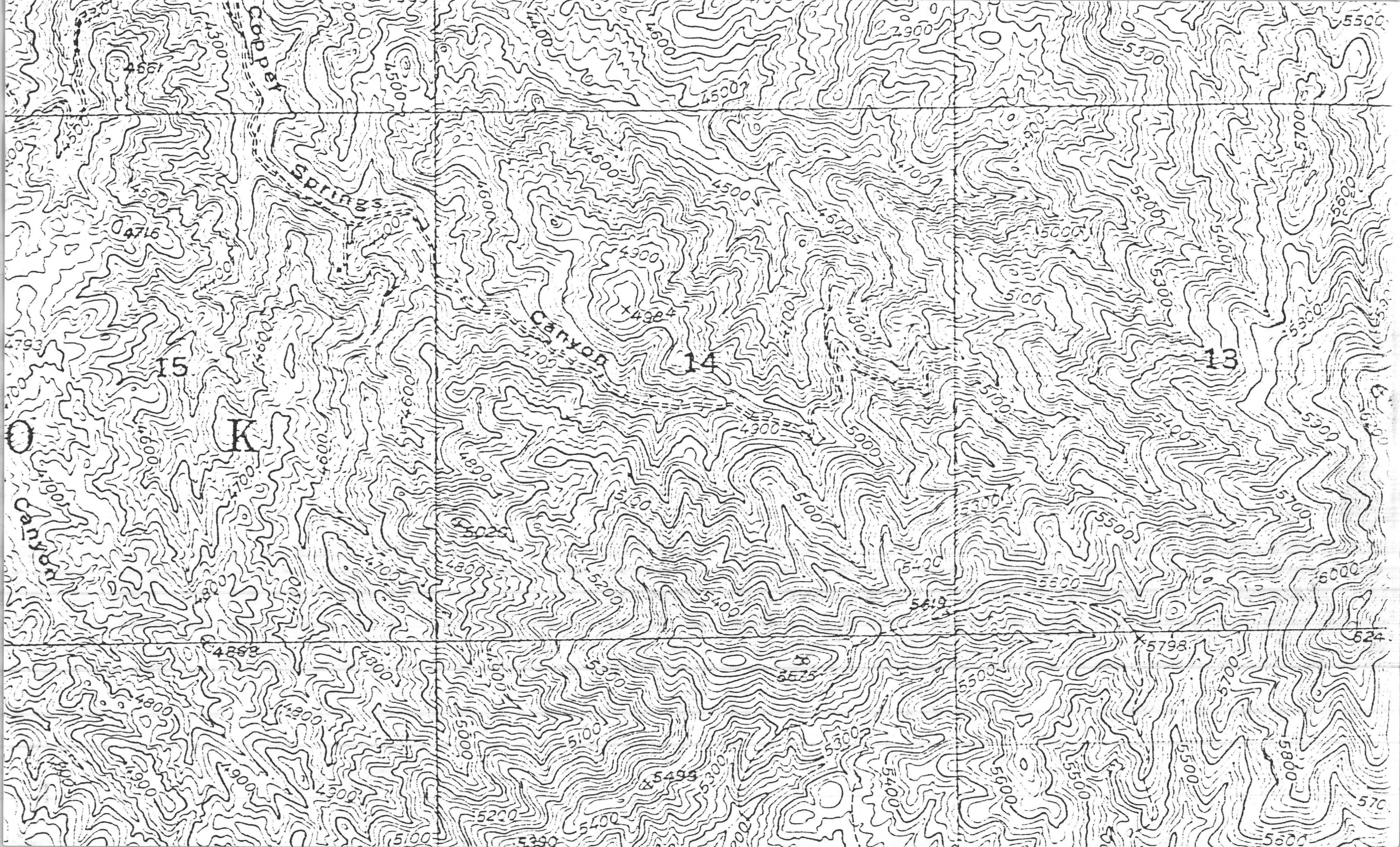
- told him that will follow up soon - says that road is now passable to property


Copper
Springs
Canyon
Canyon
15
14
13
O
K

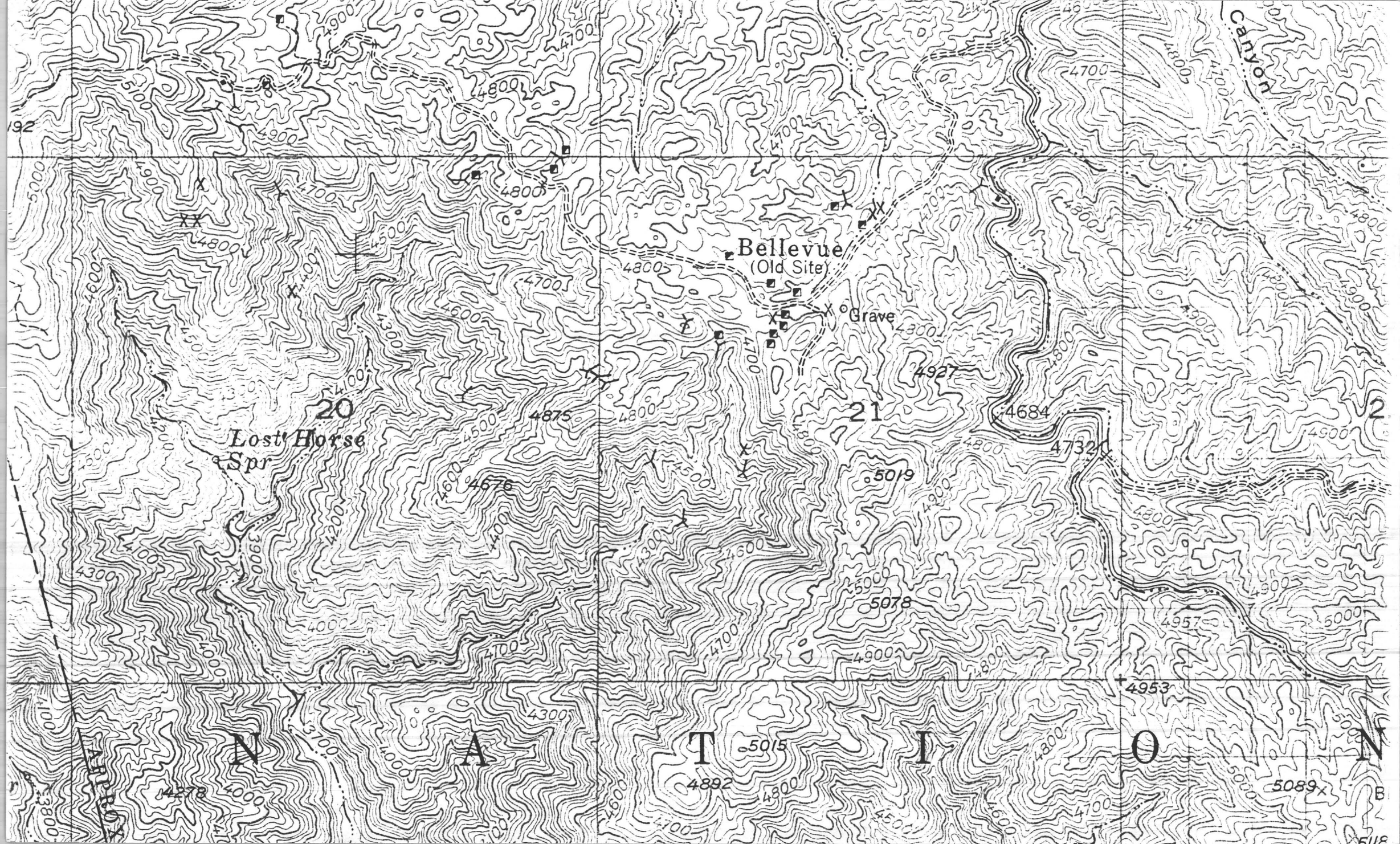

Copper
Springs
Canyon
Canyon
15
14
13
O
K
4603
4561
4716
4793
4858
4884
5028
5419
5495
5625
5798
624



Copper
Springs
Canyon
Canyon
15
14
13
O
K


Copper
Springs
Canyon
Canyon
15
14
13
K
O


17
16
20
21
C
R
O
O
Creek
Canyon
M-F
Ranch
4508
BM
Bellevue
(Old Site)
Grave
Lost Horse
Spr
5132
5207
5192
4695
4875
4676
4927
4684
4732
5019
5078
4957


Bellevue
(Old Site)
Grave
Lost Horse
Spr
20
21
4927
4684
4732
5019
4875
4676
5078
5015
4892
4957
4953
5089
4278
N
A
T
I
O
N
Canyon


R
O
O
K
Canyon
MERCER ADIT
Post Office
PASQUALE VEIN
SUMMIT VEIN
Grave
20
21
22
T
I
N

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PINAL RANCH QUADRANGLE
ARIZONA
7.5 MINUTE SERIES (TOPOGRAPHIC)

111°00′ | 33°22′30″ | 780000 FEET (CENTRAL) | R. 13 E. | R. 14 E. | 57′30″ | CASTLE DOME MINE 3.5 MI. (INSPIRATION) | 55′ | GLOBE 11 MI. MIAMI 3.2 MI. | 280000 FEET (EAST) | R. 14 E. | R. 14½ E. | 110°52′30″ | 33°22′30″

860000 FEET (CENTRAL) — 860000 FEET (EAST)

20′ — 20′

T. 1 S. — T. 1 S.

17′30″ T. 2 S. — 17′30″ T. 2 S.

830000 FEET (CENTRAL)

820000 FEET (EAST) | 33°15′ | 111°00′ | 250000 FEET (EAST) | R. 13 E. | R. 14 E. | 57′30″ | WINKLEMAN 33 MI. (RAY 1:62500) | 55′ | 810000 FEET (CENTRAL) | 33°15′ | 110°52′30″

(UNTED CANYON) (GLOBE) (SUPERIOR) (GLOBE 1:62500) (FLORENCE 1:250000) (RAY 1:62500)

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography from aerial photographs by multiplex methods
Aerial photographs taken 1943. Field check 1948

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, east and central zones

Unchecked elevations are shown in brown

Map photoinspected 1979
No major culture or drainage changes observed

APPROXIMATE MEAN DECLINATION, 1948

SCALE 1:24000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 25 FEET
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS		DRY WEATHER ROADS
Heavy-duty	4 LANE 16 LANE	Improved dirt
Medium-duty	4 LANE 16 LANE	Unimproved dirt
Loose-surface, graded, or narrow hard-surface		

U. S. Route — State Route

PINAL RANCH, ARIZ.
N3315—W11052.5/7.5

1948

PHOTOINSPECTED 1979

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-1992