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James Doyle Sell Mining Collection

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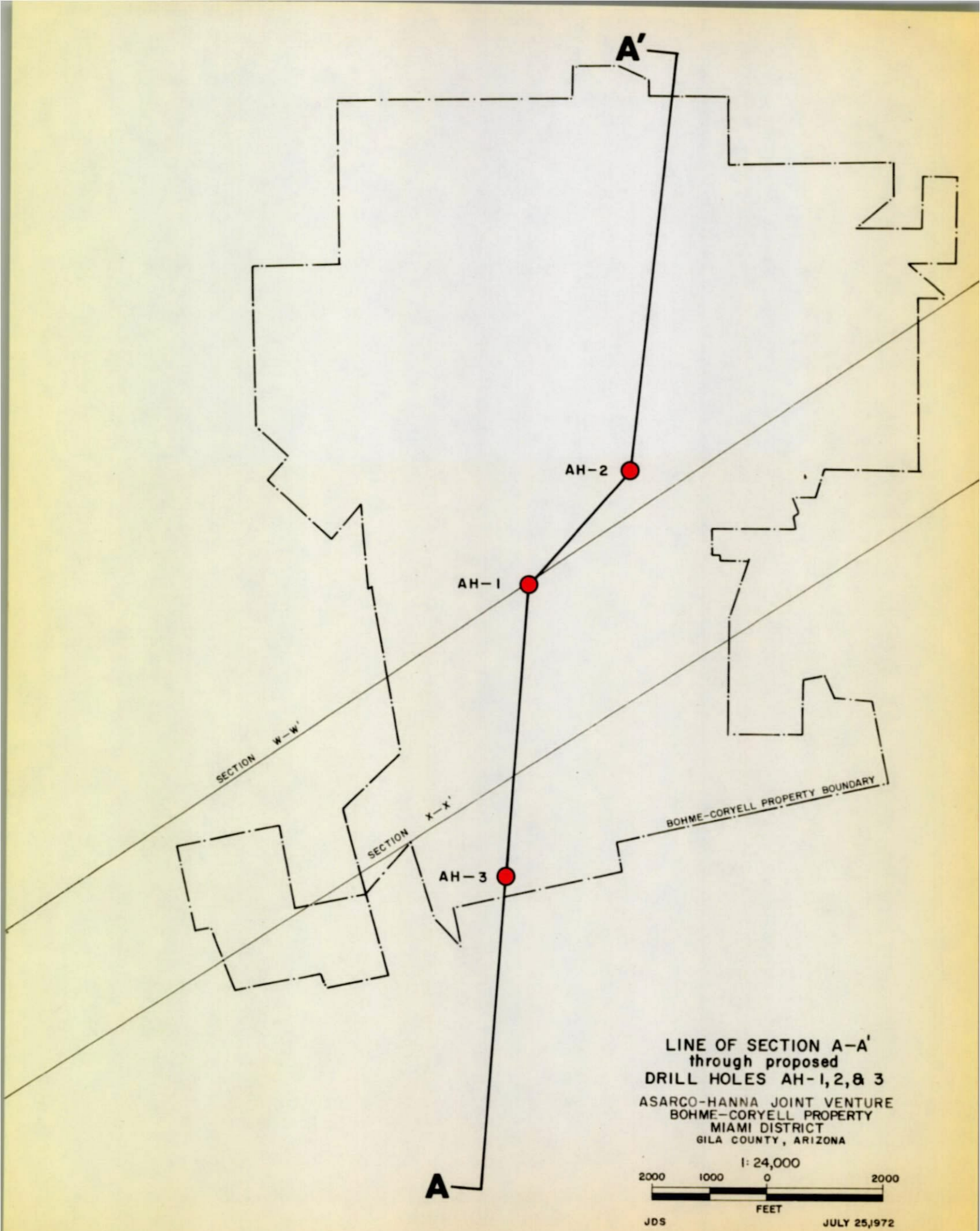
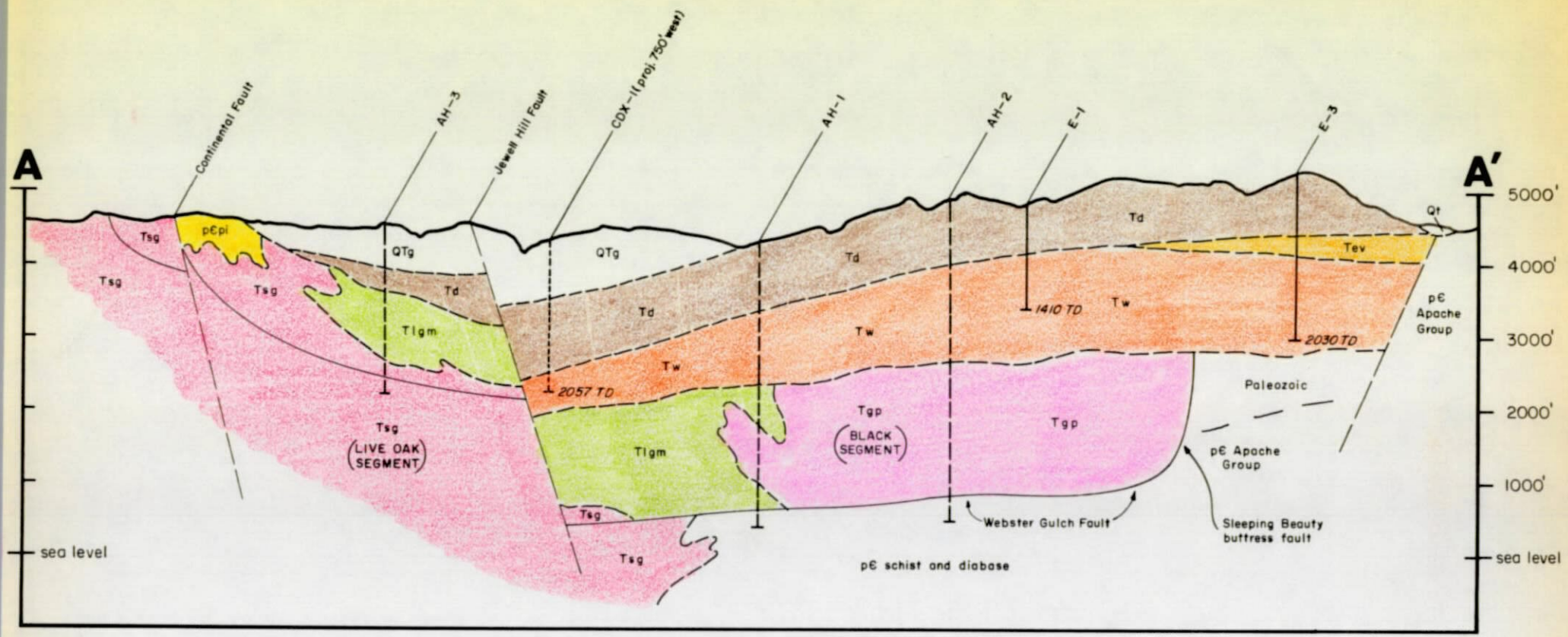

A'
AH-2
AH-1
AH-3
A
SECTION W-W'
SECTION X-X'
BOHME-CORYELL PROPERTY BOUNDARY
LINE OF SECTION A-A'
through proposed
DRILL HOLES AH-1, 2, & 3
ASARCO-HANNA JOINT VENTURE
BOHME-CORYELL PROPERTY
MIAMI DISTRICT
GILA COUNTY, ARIZONA
1: 24,000
2000 1000 0 2000
FEET
JDS
JULY 25,1972

mn. 2552c dam



LOOKING WEST

NORTH-SOUTH SECTION A-A'
through proposed
AH series DRILL HOLES

ASARCO-HANNA JOINT VENTURE
BOHME-CORYELL PROPERTY
MIAMI DISTRICT
GILA COUNTY, ARIZONA

1:24,000

2000 1000 0 2000
FEET

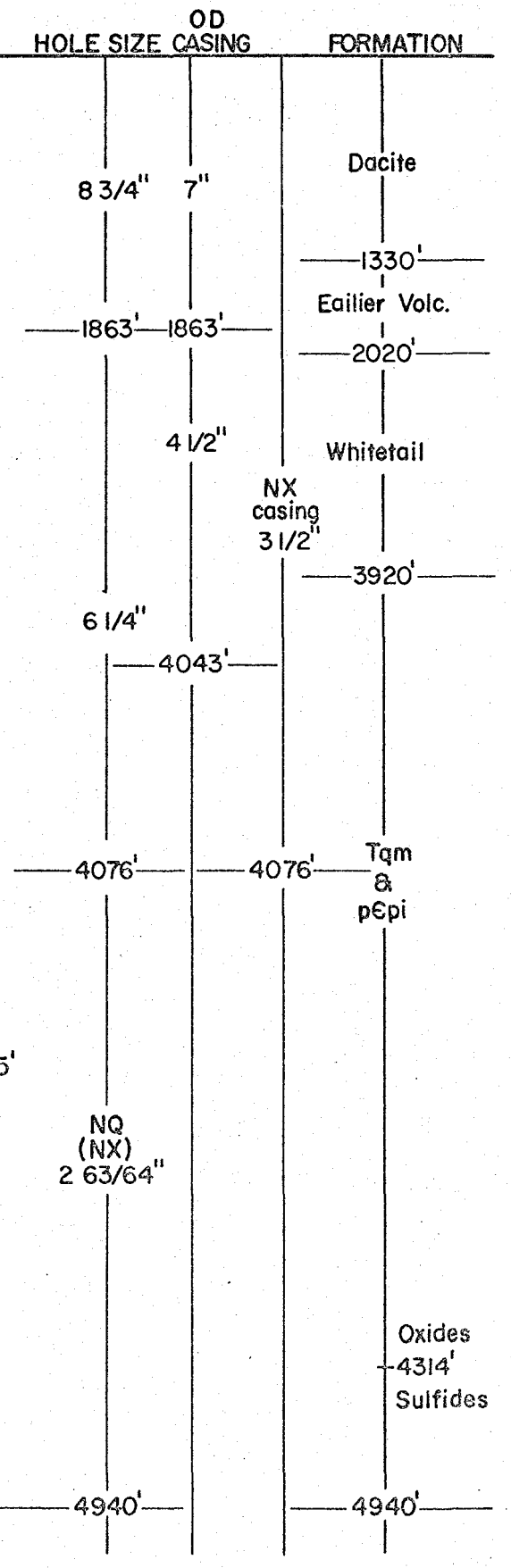
JDS JULY 25,1972

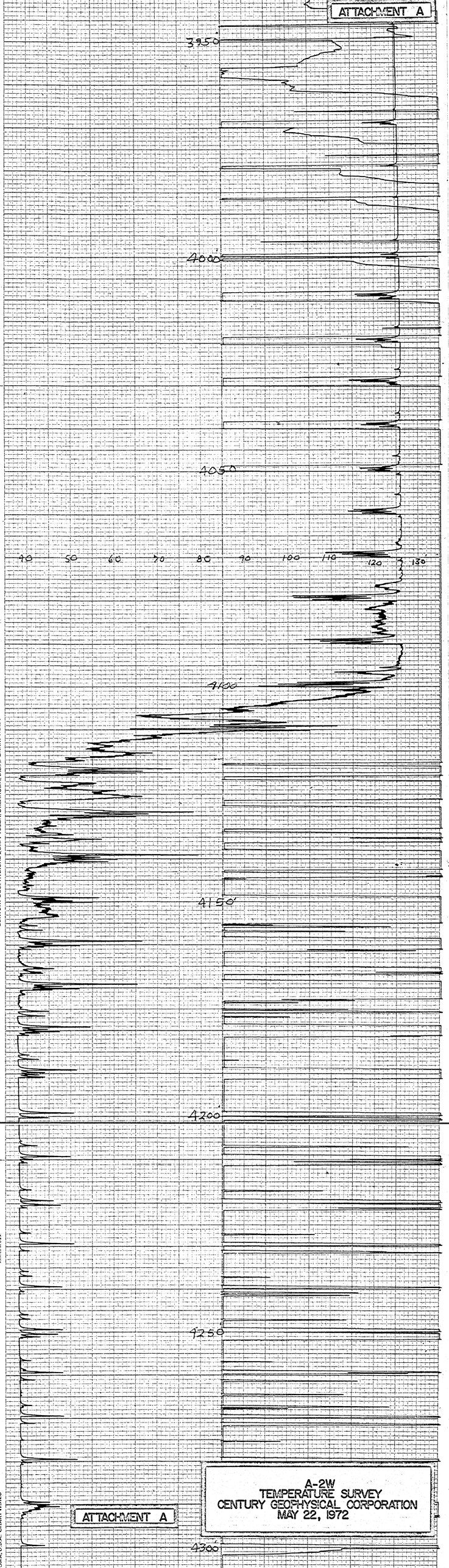
mn 2552d dgm

A-2W TEMPERATURE SURVEY

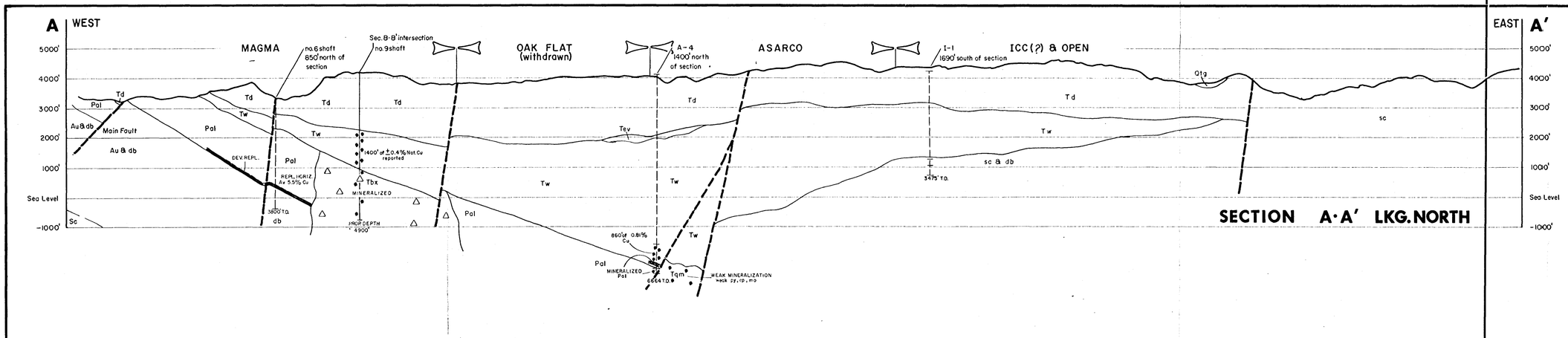
May 22, 1972

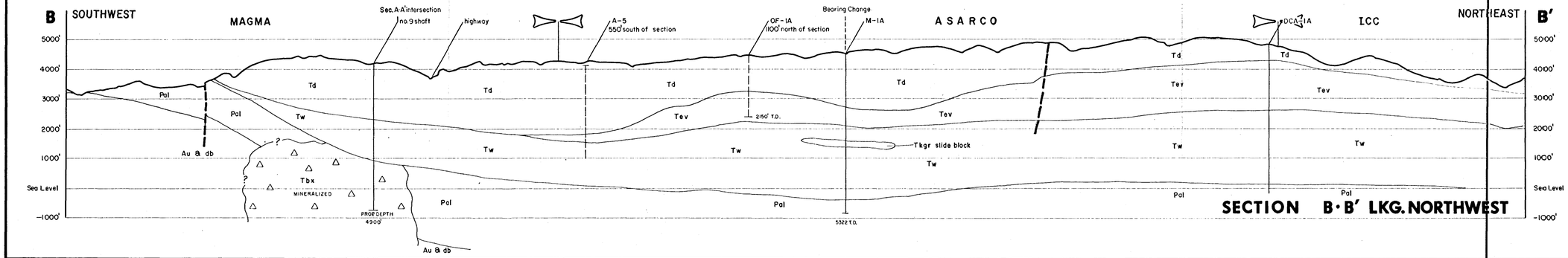
DEPTH	°F	DIFFERENCE
Surface	63°	+5°
500'	68°	+7°
1000'	75°	+11°
1500'	86°	+12°
2000'	98°	+10°
2500'	108°	+7°
3000'	115°	+6°
3500'	121°	+5°
4000'	126°	
~	average	~
4050'	126°	
4060'	126°	
4070'	124°	
4080'	100°	
4090'	55°	
4100'	44°	
4110'	45°	Drill pipe free point at 4115' (McCullough)
4120'	52°	
4130'	61°	
4140'	52°	
4150'	40°	
~	~	~
4500'	40°	+2°
4900'	42°	Bottom of stuck drill pipe at 4934'





A-2W
TEMPERATURE SURVEY
CENTURY GEOPHYSICAL CORPORATION
MAY 22, 1972





EXPLANATION

Qtg	Quaternary Cover	POST-MINERAL
Td	Tertiary Dacite	POST-MINERAL
Tev	Early Volcanics	POST-MINERAL
Tw	Whitetail Conglomerate	POST-MINERAL
TKgr Tqm	Laramide Intrusive	PRE-MINERAL
Tbx	Mineralized Breccia	PRE-MINERAL
Pal	Paleozoic Sediments	PRE-MINERAL
Au & db	Precambrian Sediments and Diabase	PRE-MINERAL
sc	Precambrian Pinal Schist	PRE-MINERAL

ASARCO

SECTIONS THROUGH DRILL HOLES

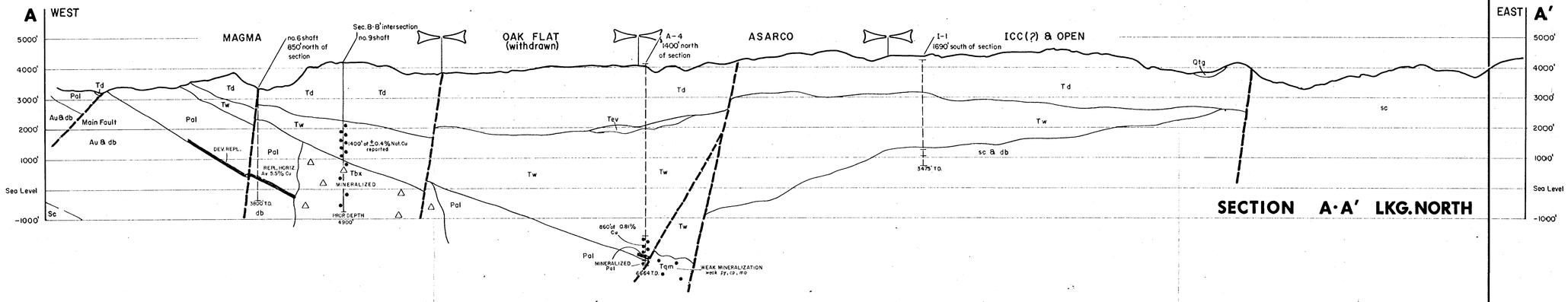
SUPERIOR EAST
PINAL COUNTY, ARIZONA

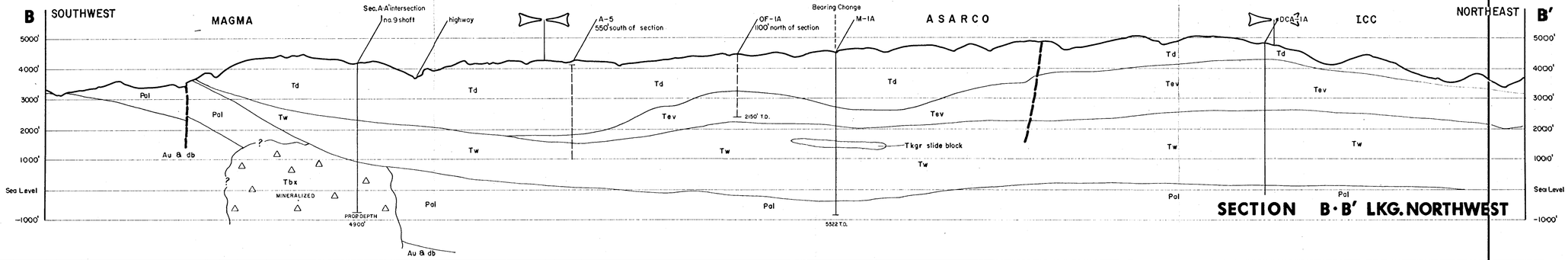
SCALE 1" = 2000'

DECEMBER, 1971

J. D. SELL

mn 2336a DAM





EXPLANATION

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ASARCO

SECTIONS THROUGH DRILL HOLES

SUPERIOR EAST
PINAL COUNTY, ARIZONA

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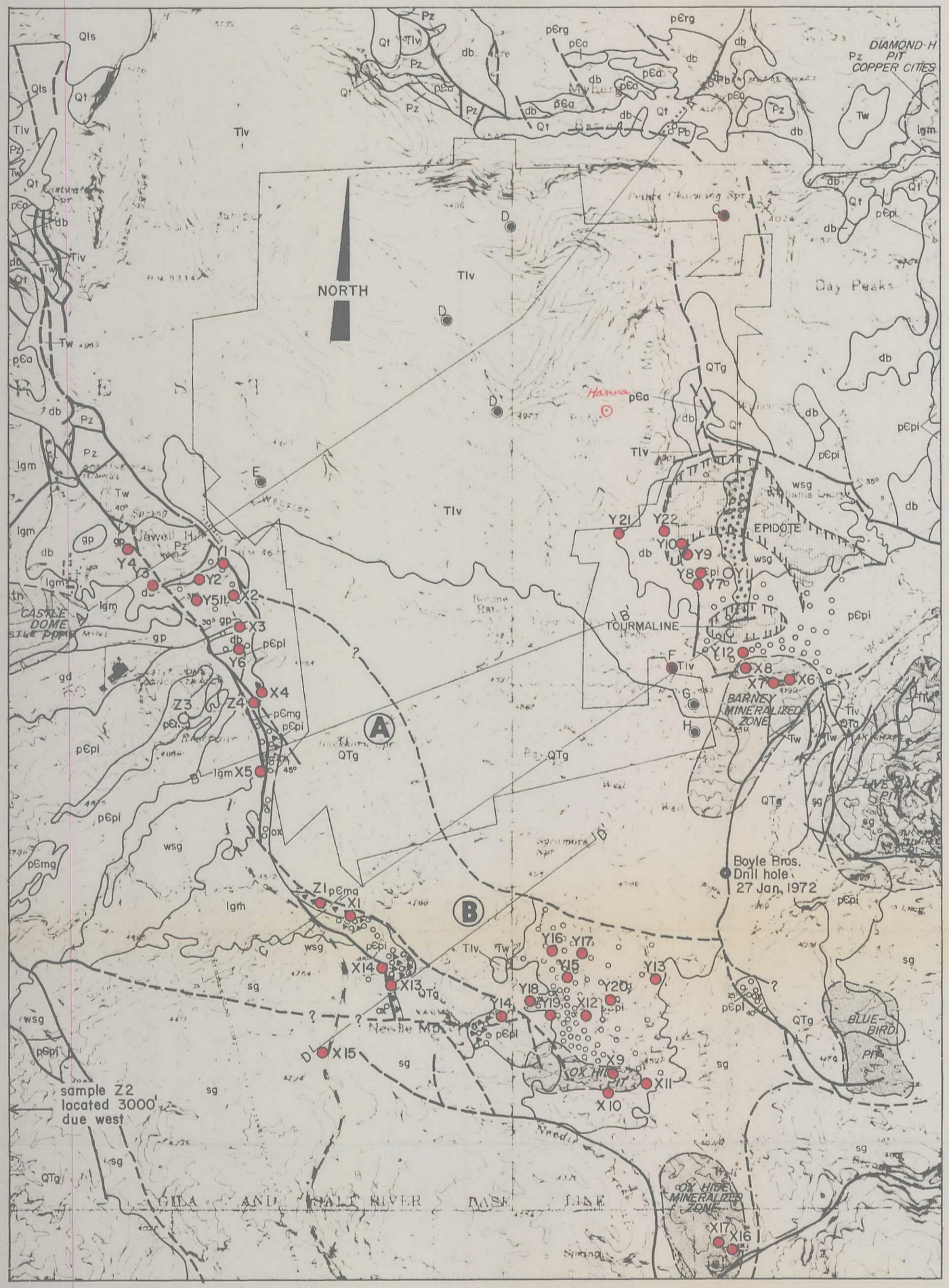


E X P L A N A T I O N

Qt	Talus	db	Diabase
Qls	Landslide	pЄmg	Manitou Hill granite
QTg	Gila conglomerate	pЄrg	Ruin granite
Tlv	Dacite (20 my)	pЄpi	Pinal schist
Tw	Whitetail conglomerate		faults and infered faults
gp	Granite porphyry phase of the Schultze Granite (58my)		contacts and infered contacts
sg	Schultze granite (62my)		"Ore" bodies
lgm	Lost Gulch quartz monzonite (64my)		mineralized area - "ox" oxide Cu
gd	Granodiorite in Gold Gulch		breccia
wsg	Willow Springs granodiorite		Bohme-Coryell property line
	Younger border intrusion (117my)		mineral distribution (name)
Pz	Paleozoic sediments	B	drill hole
pЄa	Apache group sediments	A	area of interest
X5	Sample site & number		

ASARCO

PRELIMINARY GEOLOGY MAP OF THE BOHME-CORYELL PROPERTY AREA MIAMI DISTRICT (SAMPLE SITE COVERAGE) GILA COUNTY, ARIZONA

Scale 1:24,000

2000 0 2000 4000 6000

feet

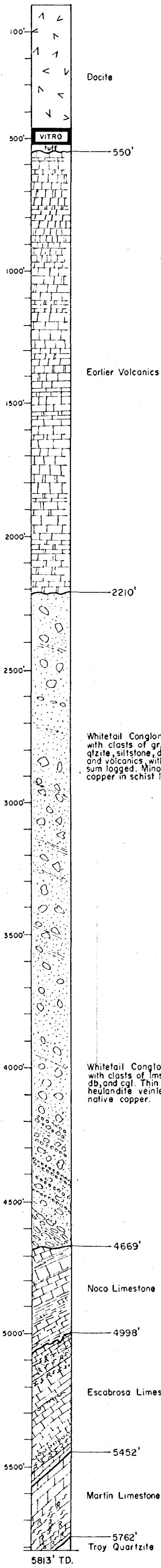
(Modifided after N.P. Peterson, U.S.G.S. P.P. 342)

D.C.R.-J.R.K. Nov. 1971

mn 2516a DAM

DCA – 1A

Collar Elev. 4760'



MIAMI COPPER – Superior Oil Rotary Hole DCA-1
Surface – 4002' with spot cores
at 1668' - 1675'
2959' - 2971'
3514' - 3525'
3525' - 3542'
3542' - 3552'
3552' - 3568'
4000' - 4011.5'
May 18 - June 26 1964
9" Hole

ASARCO Core Hole DCA-1A
4002' - 5813'
Nov. 17, 1971 - Feb. 9, 1972
NX Hole

ASARCO SAMPLES*

Footage	ppm Cu	ppm Zn
18'	44	245
20'	53	285
20'	55	263
20'	77	441
20'	84	640
20'	49	609
20'	24	174
20'	6	92
20'	7	156
20'	5	123
8'	31	74
8'	19	56
8'	11	37
9'	18	68
9'	33	93
9'	21	47
20'	42	48
10'	39	46
10'	20'	53
10'	37	30

* Sample list and values for Cu, Zn, Mo, in ppm, and SiO_2, CaO, MgO, and total Fe in %, submitted by seporate memo.

* – R – Replacement textured zone

T 1 S, R 13 E.
NW 1/4 NE 1/4 of Sec. 3

GRAPHIC LOG & ASSAY RESULTS
of
DRILL HOLE DCA-1A
SUPERIOR EAST PROJECT

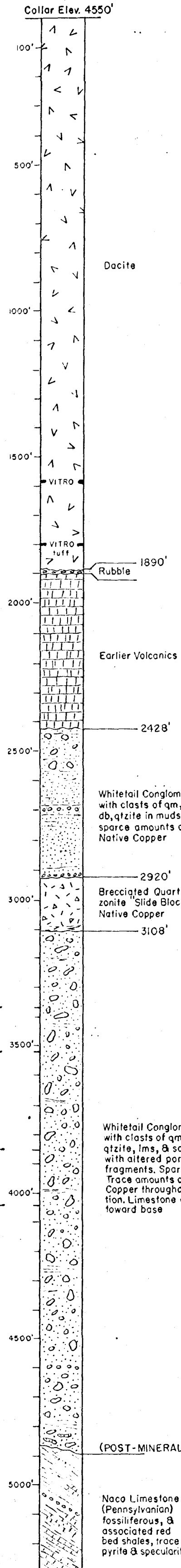
GILA & PINAL COUNTIES, ARIZONA
SCALE 1" = 300'

J.D.S. July 8, 1971

2486-C

M-1A

Collar Elev. 4550'



Continental Rotary Hole M-1
Surface -2402' with core from 2252'-2261 (Sept.-Oct. 1970)

ASARCO Core Hole M-1A
2402'-5322' (April 11 - July 3, 1971)

NOTE: Assays recorded are Copper Values sampled on 10' intervals.

% Cu

from 3370' to 3520': 0.305, 0.348, 0.152, 0.130, 0.100, 0.082, 0.092, 0.110, 0.090, 0.075, 0.130, 0.222, 0.220, 0.140, 0.122

from 3850' to 4040': 0.16, 0.14, 0.09, 0.08, 0.13, 0.11, 0.13, 0.10, 0.07, 0.09, 0.09, 0.10, 0.08, 0.08, 0.11, 0.09, 0.08, 0.06, 0.06

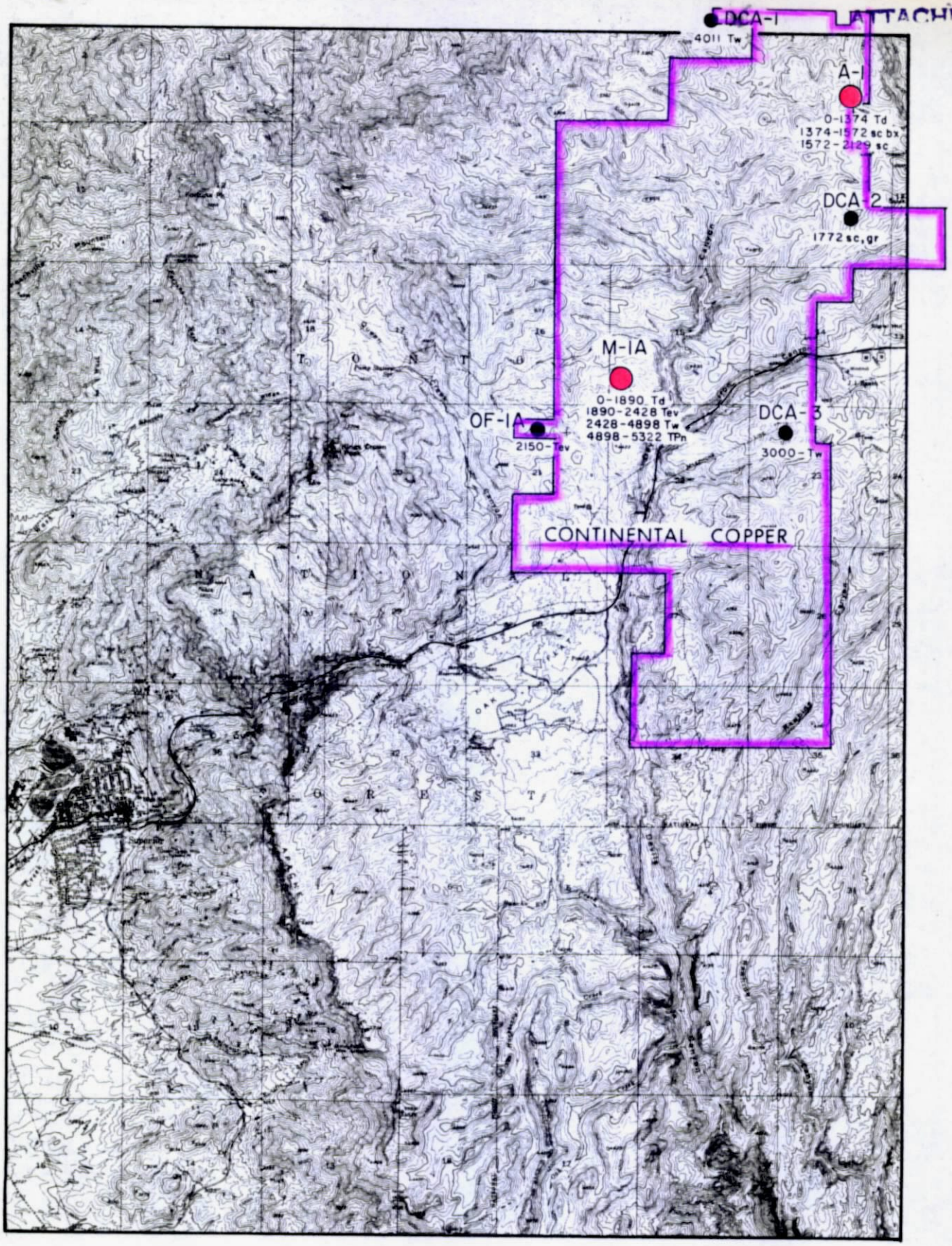
Available assays in this 492 foot section of Whitetail suggest the section will average 0.05 % copper.

Available assays in this 188 foot section of Quartz Monzonite "slide block" will average 0.02 % copper.

Native copper in this 1790 foot section of Whitetail, from 3108 to 4898 feet, based on available assays, suggest the entire section will average 0.09 % copper.

T 1 S, R 13 E.
NW ¼ SW ¼ SW ¼ of Sec. 15

ATTACHMENT A



EXPLANATION

- Previous drill hole
- ASARCO drill hole

DCA-1 (hole designation)
4011 Tw
→ Rock type
→ Bottom hole depth

POST-MINERAL ROCK UNIT

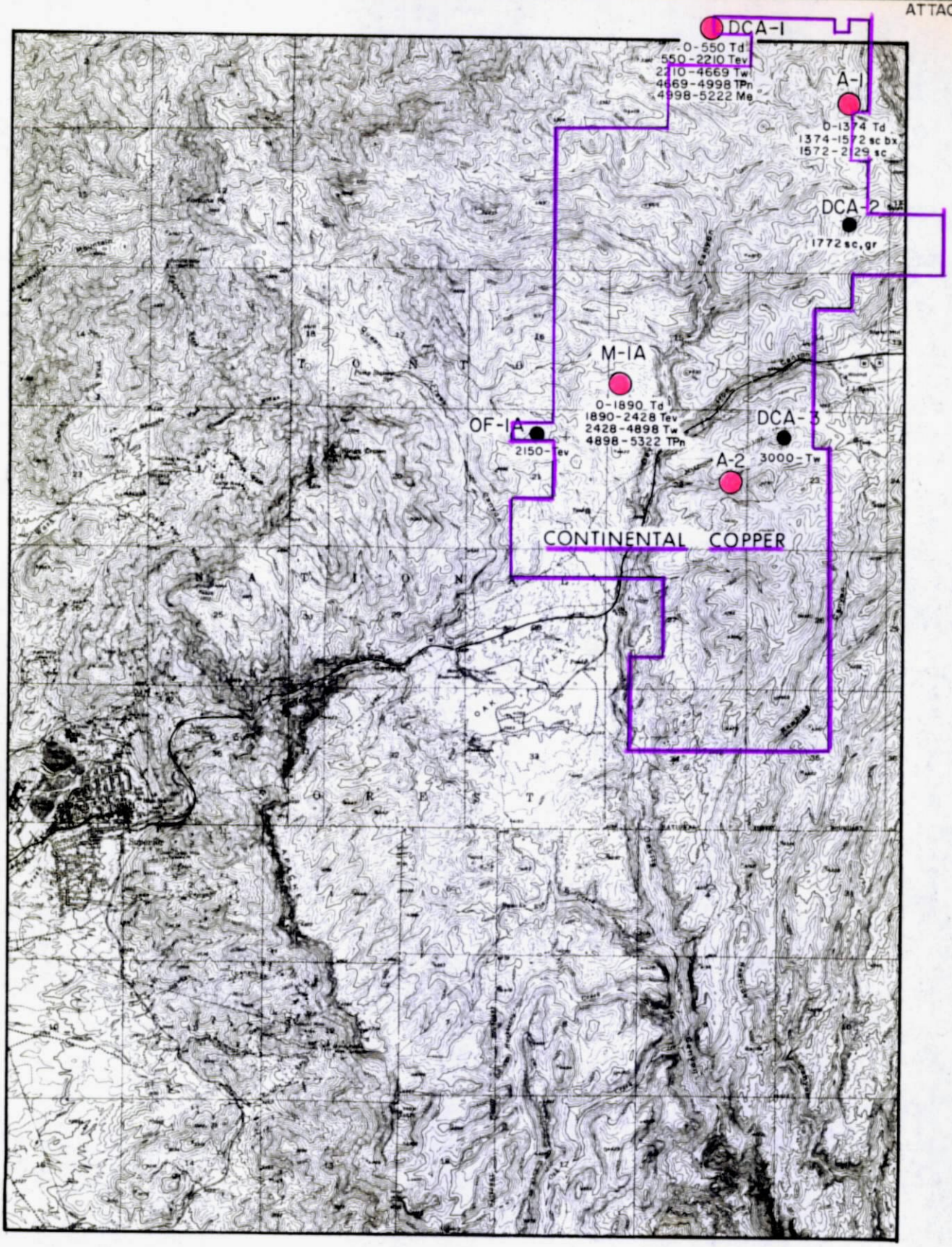
Td-Dacite
Tev-Earl volcanics
Tw-Whitetail

PRE-MINERAL ROCK UNIT

gr-Granite
db-Diabase
sc-Schist
TPn-Naco limestone

DRILLING PROGRESS MAP
for the quarter of July-Sept. 1971
SUPERIOR EAST
GILA & PINAL COUNTYS, ARIZ.
SCALE 1" = 1 mile J.D.S.

2463-A



EXPLANATION

- ● Previous drill hole
- ● ASARCO drill hole

DCA-1 (hole designation)
4011 Tw
→ Rock type
→ Bottom hole depth

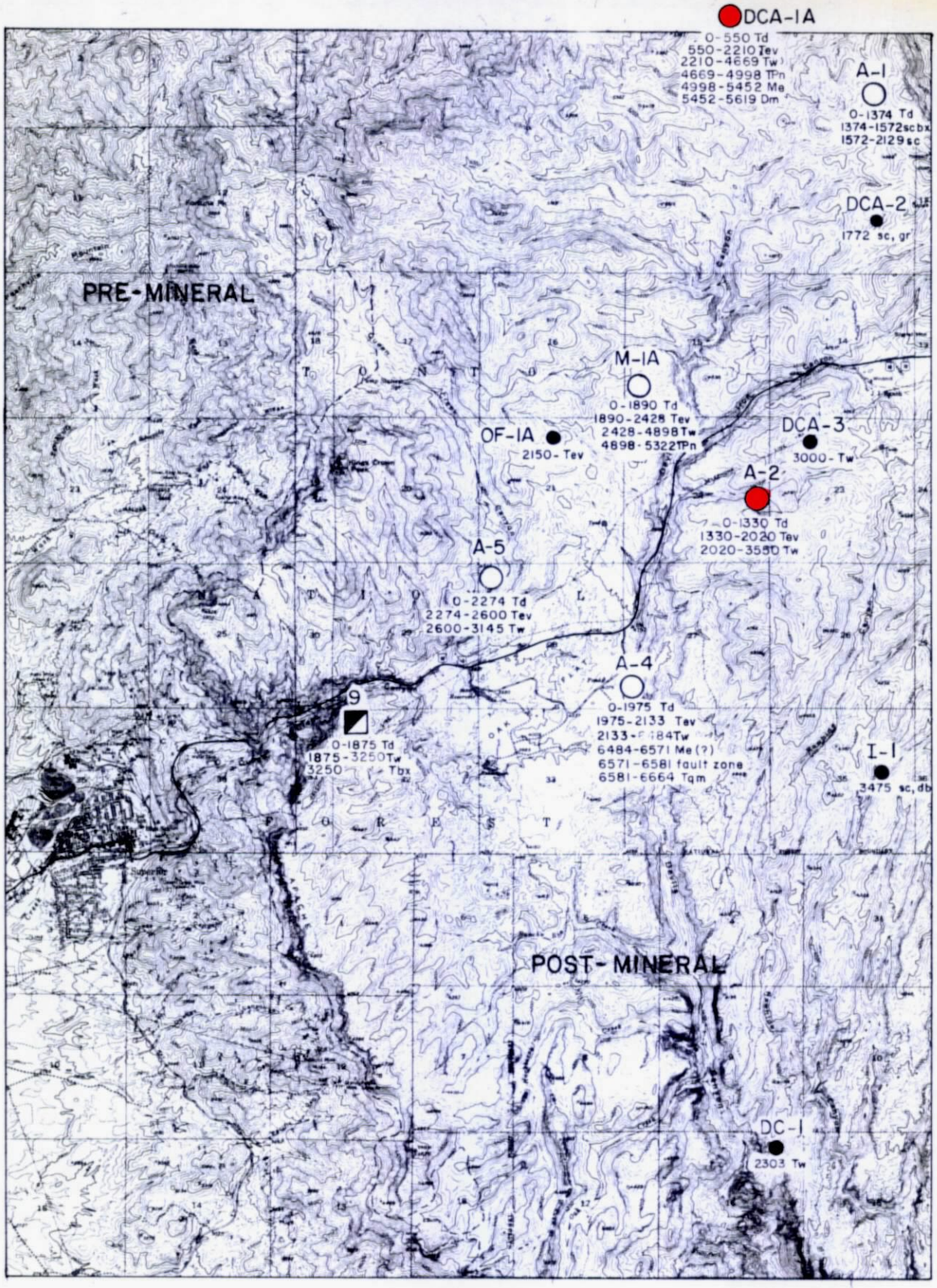
POST-MINERAL ROCK UNIT

- Td - Dacite
- Tev - Earl volcanics
- Tw - Whitetail

PRE-MINERAL ROCK UNIT

- gr - Granite
- db - Diabase
- sc - Schist
- TPn - Naco limestone

DRILLING PROGRESS MAP
for the quarter of Oct.-Dec. 1971
SUPERIOR EAST
GILA & PINAL COUNTYS, ARIZ.
SCALE 1" = 1 mile J.D.S.



EXPLANATION

- Previous drill hole
- ASARCO drill hole
- Magma's #9 shaft
- DCA-1 (hole designation)
- 4011 Tw — Rock type; Bottom hole depth
- P — Proposed drill site

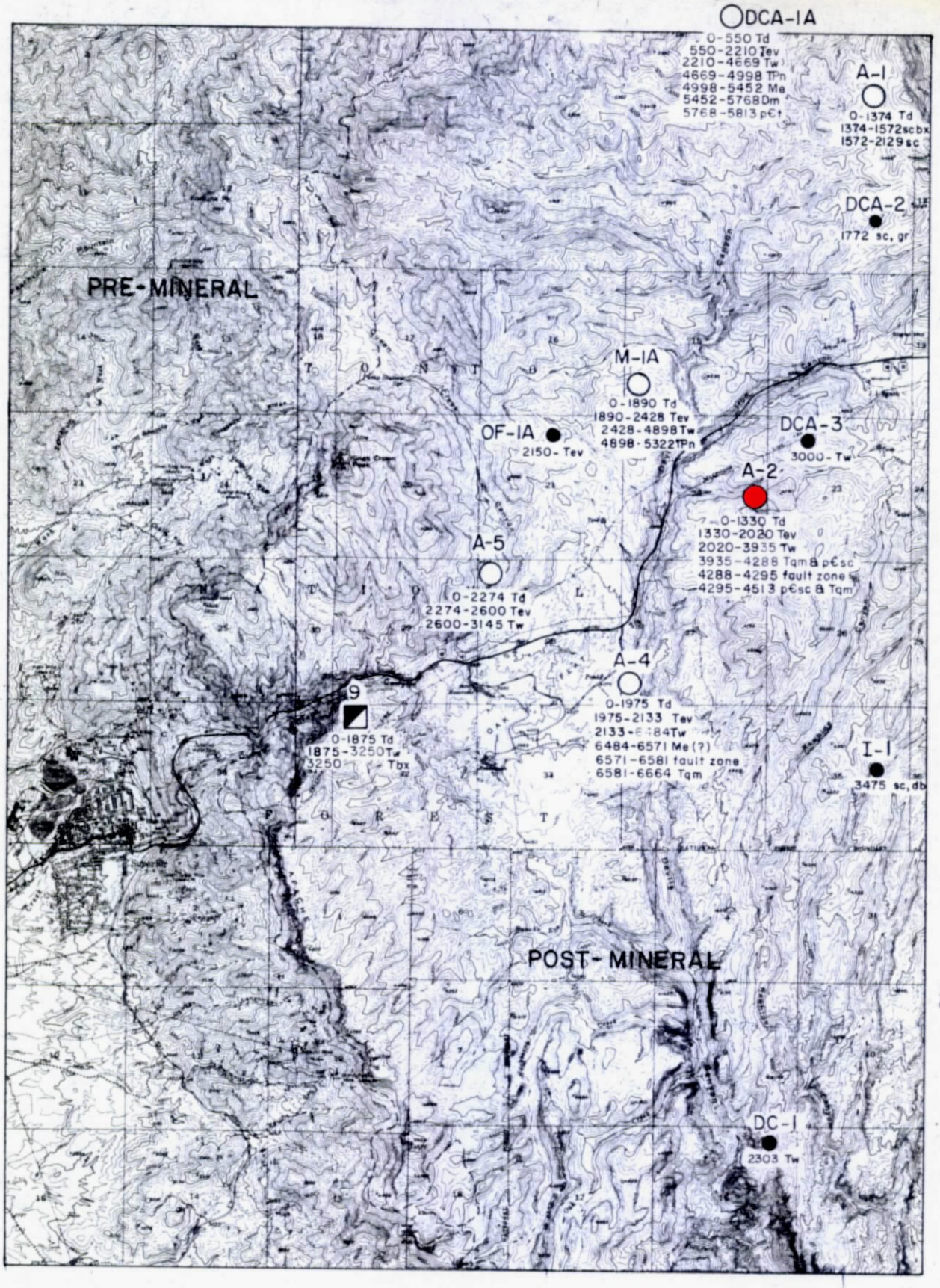
POST-MINERAL ROCK UNIT

Td - Dacite
Tev - Early volcanics
Tw - Whitetail

PRE-MINERAL ROCK UNIT

Tbx - Breccia
Tqm - Quartz Monzonite
Tgr - Granite
TPn - Naco limestone
Me - Escabrosa limestone
Dm - Martin lms
p€db Diabase
p€sc Schist

DRILLING PROGRESS MAP
for the month of January 1972
SUPERIOR EAST
GILA & PINAL COUNTY, ARIZONA
SCALE: 1" = 1 mile
J.D.S.
2463



EXPLANATION

- Previous drill hole
- ASARCO drill hole
- Magma's #9 shaft
- DCA-1 (hole designation)
- 4011 Tw — Rock type; Bottom hole depth
- P — Proposed drill site

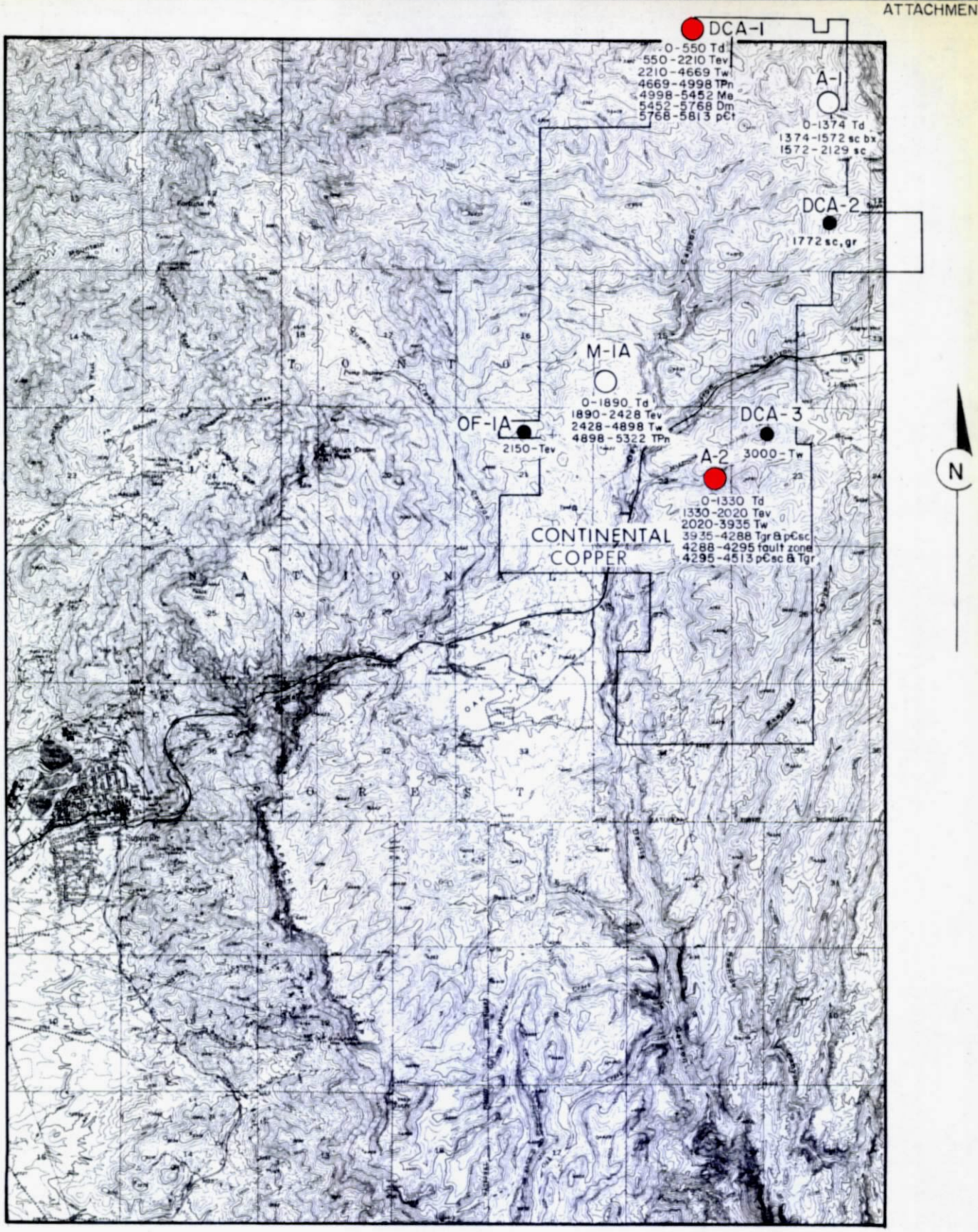
POST-MINERAL ROCK UNIT

Td - Dacite
Tev - Early volcanics
Tw - Whitetail

PRE-MINERAL ROCK UNIT

Tbx - Breccia
Tqm - Quartz Monzonite
Tgr - Granite
TPn - Naco limestone
Me - Escabrosa limestone
Dm - Martin lms
p€t - Troy qtz
p€db - Diabase
p€sc - Schist

DRILLING PROGRESS MAP
for the month of March 1972
SUPERIOR EAST
GILA & PINAL COUNTY, ARIZONA
SCALE: 1" = 1 mile
J.D.S.
2463



EXPLANATION

● Previous drill hole

● ASARCO drill hole

DCA-1 (hole designation)

4011 Tw

Rock type

Bottom hole depth

POST-MINERAL ROCK UNIT

Td - Dacite
Tev - Early volcanics
Tw - Whitetail

PRE-MINERAL ROCK UNIT

Tgr - Granite
TPn - Naco limestone
Me - Escabrosa limestone
Dm - Martin lms
pЄt - Troy qtz
pЄdb - Diabase
pЄsc - Schist

DRILLING PROGRESS MAP
for the quarter of JAN.-MAR. 1972
SUPERIOR EAST
GILA & PINAL COUNTYS, ARIZ.
SCALE 1" = 1 mile J.D.S.

2463-A

FTG 12/2/93

4000' Magna data on way

Send copy of Loss of A.E.
to Scott Monski SW
602 / 689-2444

Supervisor 602 / 229-4256
w/ copy of letter to FTG

Done

THE UNIVERSITY OF

ARIZONA®

TUCSON ARIZONA

Department of Hydrology and Water Resources
and Hydrology and Water Resources Student Association

EL DIA DEL AGUA

The 8th Annual Hydrology Research Exposition

Wednesday, March 4, 1998

Walter Illman, Dick Thompson, and Shlomo Neuman

Single- and Cross-Hole Transient Pneumatic Tests in Unsaturated Fractured Tuffs at the Apache Leap Research Site

Over 260 single-hole pneumatic tests have been conducted in 6 shallow vertical and inclined boreholes in unsaturated fractured tuffs at the Apache Leap Research Site near Superior, Arizona. Guzman et al. [1996] applied a steady-state analysis to each test. We describe pressure and pressure-derivative type-curve analyses of transient data from some of these tests which yield information about air permeability, air-filled porosity, skin factor, and dimensionality of the flow regime on a scale of 1 m.

Transient air permeabilities agree well with previously determined steady-state values but show poor correlation with fracture density data. The single-hole test results, together with borehole televiewer data, helped us design and conduct over 35 cross-hole pneumatic tests in 22 boreholes at the site, including those used previously for single-hole testing. In each test, air was injected at constant mass flow rate into a relatively short borehole interval of length 1 - 2 m while monitoring air pressure and temperature in the injection interval, at the surface and in 11 short (0.5 - 2 m) and 25 longer (4 - 20 m) intervals within the injection and surrounding boreholes. We describe the results of two cross-hole tests and type-curve analyses of these test results in which short borehole intervals are treated as points and longer intervals as lines. Accounting is made for borehole storage effects due to air compressibility. The cross-hole test results yield information about fracture connectivity and directional air permeability and air-filled porosity on a scale of 10 - 20 m. Results to date provide considerable insight into gas flow through unsaturated fractured rocks, the properties of such rock, and their scaling behavior.

Beth Parker

A Photochemical Stu
Globe, Arizona

Mining activities in th
groundwater plume w
that feeds the perenn
Mn(II) contamination
streambed. The obje
manganese oxides ar
reduced. A solar simu
being used to irradia
Preliminary studies w
show evidence of a
experiments are plann
Creek, with and witho