



CONTACT INFORMATION

Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
<http://www.azgs.az.gov>
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

SANSONE'S
ACM 166 LODE MINING CLAIMS
GEOLOGY

This pamphlet contains Geological Data which has been developed on Sansone's ACM 166 Lode Mining Claims, and on adjoining and similar properties.

CONTENTS

A PRELIMINARY GEOLOGICAL
INVESTIGATION ON MINING
PROPERTIES OF
MICHAEL C. SANSONE
E. Thomas Riggs
March 13, 1984

A GEOLOGICAL INVESTIGATION OF THE
BULLARD MINE, AGUILA, ARIZONA
Jeffery W. Giese
April, 1984

A GEOLOGICAL INVESTIGATION OF THE
BULLARD MINE, AGUILA, ARIZONA
Knoxie C. DeLise, P.E.
October, 1981

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
22-1		.230					
22-2		.036					
22-3		.070					
22-4		.093					

Split from Lab No. 4 sent to Skyline
Lab, Inc. for comparison assay. See
Item No. 2, next page.

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Goss

Location of collection: Site 22 on Bullard Claims. Samples taken from dump, irons, coppers and cross vein

Description of structure from which sample removed: Large vein structure. iron, manganese, copper vein. Possible large vein covered by ash flows.

Identification mark placed on structure showing location of removal: Paint spray numbers on walls at site of samples

Sample container identification 10# cloth sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____



REMARKS

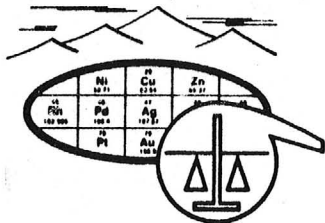
This vein could be vein that was encountered when 900 foot well was drilled on stage coach wash, below old smelter.

CERTIFIED BY: Cadmus L. G. Goss, P.E.

5095

Signature: Cadmus L. G. Goss

Status: _____



SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. URU 001
May 22, 1984
B-21-2 TO B-27-9
PAGE 1 OF 1

REALTY INVESTMENT COMPANY
Attn: Mr. Michael C. Sansone
P.O. Box 10402
Phoenix, Arizona 85064

Analysis of 8 Ore Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY	
		Au (oz/t)	Ag (oz/t)

1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46

Site 21

The vein at this location lays to the east and west, standing in a vertical position.

There has been a shaft here sunk to an approximate depth of 75 feet. The vein width appears to be about 12 feet, overall. It is a mixture of rhyolite, a little bit of manganese and a lot of copper. It is hard to tell where the values lie since there is no definite vein structure itself. It is intruded all throughout, like a brecciated type ore. There are pockets of iron and manganese in the rhyolite.

You can see coloration in the substructure for about 250 feet, lying in an east-west direction. It protrudes up the far hill.

There is an overlying cap in this whole area, so it is hard to tell where the veins lie.

We took a sample of a rhyolite base ore that lies just to the northwest of the main shoot. This sample may carry a low-grade gold deposit, and it is initially free of copper. There is a large amount of tonnage of this ore.

We are taking a sample across the deposit. The deposit is about 250 feet wide and probably 400 feet in length. It is kind of a rhyolite blow-out. If it carries a lowgrade deposit, then we can come back and estimate the tonages.

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
21-1		.098					
21-2		1.0					
Split from Lab No. 2 sent to Skyline Lab, Inc. for comparison assay. See Item No. 1, next page.							

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Goss
Location of collection: Broken Ladder site number 21 on Bullard Extension claims

Description of structure from which sample removed: 75 foot shaft sunk on vein. Rhyolite, copper manganese vein structure.

Identification mark placed on structure showing location of removal: wooden stakes

Sample container identification 10# cloth sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____



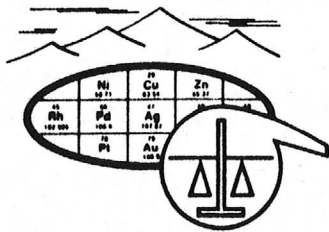
REMARKS

Vein structure can be traced for 300 feet and can possibly
be covered by volcanic ash flows.

CERTIFIED BY: Cadmus L. G. Goss, P.E. # 5095

Signature: Cadmus L. G. Goss

Status: _____



SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106

Tucson, Arizona 85703

(602) 622-4836

REPORT OF ANALYSIS

JOB NO. URU 001

May 22, 1984

B-21-2 TO B-27-9

PAGE 1 OF 1

REALTY INVESTMENT COMPANY

Attn: Mr. Michael C. Sansone

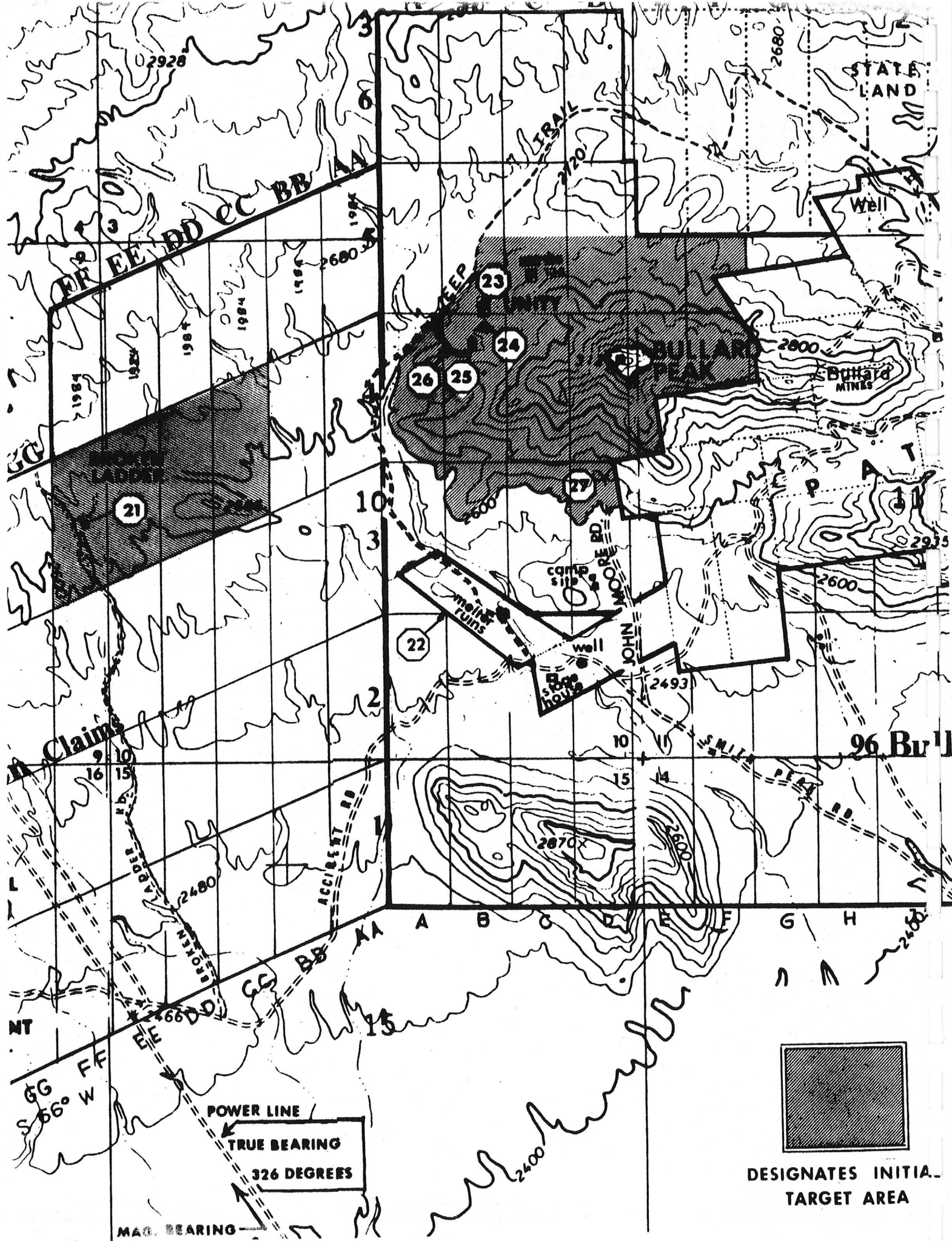
P.O. Box 10402

Phoenix, Arizona 85064

Analysis of 8 Ore Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY	
		Au (oz/t)	Ag (oz/t)

1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46



E. Thomas Riggs

Consultant, geology - exploratory drilling

Site 22

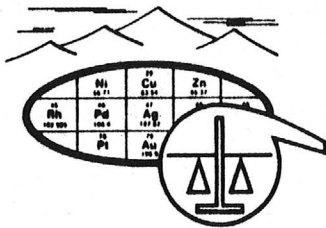
Site 22 is a decline that goes in about 125 feet where there is a rock fall. We have taken three samples, both of the vein material and the dump area. The two samples in the decline were taken at 1/3rd and 2/3rds of the way down.

The material has an iron cap overlay and an iron cap underlay. The copper lies in between. We sampled the iron separate from the copper to check and see where the best gold values were laying.

One sample was taken entirely across the vein. Another was taken from the dump.

The vein dips to the east, slightly southeast, and runs just about southwest. The vein dips down at about a 60 degree decline, pretty steep. The host rock is volcanic in this area.

There are 2 or 3 interesting shear zones in the area. There is a shear in the left-hand wall of the decline, and also a shear zone in the foot-wall.



SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. URU 001
May 22, 1984
B-21-2 TO B-27-9
PAGE 1 OF 1

REALTY INVESTMENT COMPANY
Attn: Mr. Michael C. Sansone
P.O. Box 10402
Phoenix, Arizona 85064

Analysis of 8 Ore Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY	
		Au (oz/t)	Ag (oz/t)
1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
23-1		.103					
23-2		1.73					
23-3		1.67					
23-4 *		.015					

Splits from Samples 2 and 3 were sent to Skyline Labs, Inc. for comparison assay. See Items 3 and 4 next page.

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Goss
Location of collection: West end of Unity Mining Exploration site.

Description of structure from which sample removed: Samples taken from two definite veins. Veins run between sites 23 and 26

Identification mark placed on structure showing location of removal: wooden stakes

Sample container identification 10# cloth sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____



(seal)

REMARKS

two vein structures at sample sites. Samples were taken from both veins.

* Sample 23-4 was lower than the other three samples.

CERTIFIED BY: Cadmus L. G. Goss, P.E.

5095

Signature: Cadmus L. G. Goss

Status _____

Site 23

The vein at this location tends to strike into the side of the mountain at about 75 to 80 degrees, and approximately 3 to 4 feet in width. There are actually 2 veins here. One is about 2 feet wide and lies about 8 feet from the other one, with volcanic material in between. Samples 1 through 3 (of 4 samples taken from this area) were taken from the first vein referred to here. Sample 4 was taken from the 2 foot wide vein.

We samples across the face, it being about 75 feet across, and we are at the far eastern end of the 1400 foot vein. The vein runs between site 23 and site 26 and is consistent throughout. Consistency is shown by bulldozer cuts at various locations along the vein.

The material is high in silica with a lot of quartz looking material in it. We also have malachite, azurite and a little pecot-copper showing. There is quite a bit of pyrite showing. We have been about 30 feet into a dozer cut into the side of the mountain in a large excavation. Apparently this is why the pyrites are still showing; they haven't oxidized out.

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
25-1		.47					
25-2 *		.031					
25-3c *		.077					
25-3v		.47					

Split from Lab No. 3v sent to
Skyline Lab Inc. for comparison
assay. See Item 5, next page.

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Goss

Location of collection: Unity Group Exploration site number 25

Description of structure from which sample removed: copper vein located at this site

Identification mark placed on structure showing location of removal: wood stakes and paint on vein wall in decline.

Sample container identification: 10# cloth sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____

REMARKS

Sample 25-1 was taken at the mouth of the tunnel.

*Sample 25-2 was taken from the wall specimen of vein. This probably is why the samples run low in gold.

Sample 25-3c is a sample of the cap over the vein. 25-3v is a sample of the vein.



CERTIFIED BY: Cadmus L. G. Goss, P.E.

5095

Signature: Cadmus L. G. Goss

Status: _____

E. Thomas Riggs

Consultant, geology - exploratory drilling

Site 25

At site number 25, there is a considerable decline, with a dump of approximately 400 or more tons. I have picked some high grade samples from this dump in the past that have assayed 2 ounces of gold, however, these were high-grade samples.

Vein width tends to be approximately 3 to 4 feet. Tunnel width is about 8 feet and the height of the tunnel or the decline is about 5 feet.

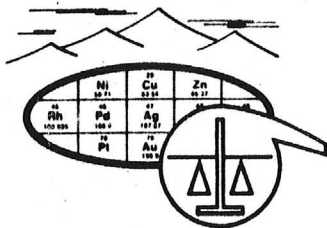
Sample number 1 was taken from the mouth of the decline, at the dump area. It was taken across the vein, with the vein measuring about 36 to 40 inches. There are two distinct veins, one overlying the other. There is a large amount of chrysocolla, azurite, malachite, picot-copper in these samples.

We went down approximately 50 feet into the decline, which goes on down to a depth of maybe 95 to 100 feet where it caves. At 50 feet we encountered large amounts of pyrites. Number 2 sample was taken from this area.

Number 3 and number 3a samples were taken from the vein material on the surface approximately 50 feet east of the decline. The width of the vein at point was about 40 inches.

All samples were tarped and the fines were caught, except on one sample where the decline was too steep to be able to tarp.

The vein lays at about 45 degrees to the west and dips to the south at about 75 degrees. It tends to do down and then levels off then goes deeper again, a little steeper.



SKYLINE LABS, INC.
1775 W. Sahuarro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. URU 001
May 22, 1984
B-21-2 TO B-27-9
PAGE 1 OF 1

REALTY INVESTMENT COMPANY
Attn: Mr. Michael C. Sansone
P.O. Box 10402
Phoenix, Arizona 85064

Analysis of 8 Ore Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY	
		Au (oz/t)	Ag (oz/t)
1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
26-1		.083					
26-2		.082					
26-3		.116					
26-4		.048					

Split from Lab Number 3 sent to
Skyline Lab, Inc. for comparison
assay. See Item No. 6, next page.

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Gos
Location of collection: Unity Group exploration site

Description of structure from which sample removed: surface structure on southwest side of
Unity Group exploration

Identification mark placed on structure showing location of removal: wooden stakes

Sample container identification 10# clon sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____



(seal)

REMARKS

These values will increase at depth. The reasoning behind this statement is that there has been a decline sunk on this site. From the amount of material in the dump, depth is estimated to be 90 to 150 feet

CERTIFIED BY: Cadmus L. G. Goss, P.E.

5095

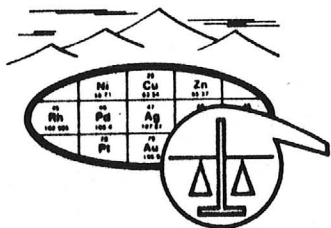
Signature: Cadmus L. G. Goss

Status _____

Site 26.

We are now on the back side of the Bullard property in what is known as the Unity Group. We have taken 4 samples across a 200 foot face. All samples have been staked. The vein varies in width from 2 feet to 3 feet. There is one extensive dump on this site that is comprised of about 250 tons of waste material, mostly volcanic dump. The dump material does assay and run on a leach for copper. There are also some high-grade samples of gold in the dump. In the decline at site 26 the depth of the decline is unknown. Judging from the amount of muck taken out versus the amount of vein material left, I would say that the decline is approximately 90 feet in length. The vein structure in site 26 is about 1400 to 1600 feet in length. There are various sites along it, mostly declines. We are going to sample all of these declines today.

The dip on the vein is approximately 35 degrees. The material has a large amount of silica in it. There are no pyrites found within the copper zone. One sample, earlier, did show a small amount of free gold. Previous samples across this vein have assayed as high as 3 ounces of gold, and as low as .02 ounces. Average of that last graded sample went 0.4 ounces across the face. The vein lays about 45 degrees to the west and dips almost to the south.



SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. URU 001
May 22, 1984
B-21-2 TO B-27-9
PAGE 1 OF 1

REALTY INVESTMENT COMPANY
Attn: Mr. Michael C. Sansone
P.O. Box 10402
Phoenix, Arizona 85064

Analysis of 8 Ore Samples

FIRE ASSAY
Au Ag
ITEM SAMPLE NUMBER (oz/t) (oz/t)

1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46

Michael C. Sansone
For REALTY INVESTMENT COMPANY
2942 North 24th Street #107
Phoenix, Az. 85016

Date April 6, 1984

ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
27-1	Moore Campsite	.213					
27-2	" "	1.0					
27-3	" "	.095					
27-4	" "	.025					
27-5	" "	.119					
27-6	" "	.80	.5				
27-7	" "	.279					
27-8	" "	.100					
27-9	" "	1.1					
27-10 *	" "	.184					
27-B *	" "	.334	.7				

Splits from Lab Numbers 6 and 9 sent
to Skyline Labs. See report, next
page, Items 7 and 8 for comparison
assay.

ORE SAMPLE INFORMATION

Date collected: March 13, 1984 Sample collected by: E. Thomas Riggs & Cadmus Goss

Location of collection: Old John Moore's Campsite Southwest of Bullard Peak

Description of structure from which sample removed: Samples taken from stopes, glory hole and inclines.

Identification mark placed on structure showing location of removal: Sample number spray painted on wall
with perimeter marks at each end of sample area.

Sample container identification 10# cloth sample bags marked with site number and sample number

Additional split of sample: 4 sample splits available

Identification of sample containers: plastic bags with identification numbers marked

Where available: Unity Mining Company laboratory, Forpaugh, Az.

Samples submitted for assay to: Unity Mining Company laboratory

Name: Thomas M. DeHoff

Date: March 13, 1984

Address: P. O. Box 2659, Wickenburg, Az. 85358

Phone: 602-685-2477

Method of assay: Fire

Lab number: _____



REMARKS

Samples were taken from across vein with each sample area
being tarped. * Sample 27-10 was taken as a control to
see if the roof contained any values. * Sample 27B was taken
from a decline adjacent to site 27, adjacent to site 27 mineralized
zone, and is of the same origin.

CERTIFIED BY: Cadmus L. G. Goss, P.E. # 5095

Signature: Cadmus L. G. Goss

Status: _____

REPORT BY THOMAS RIGGS OF FIELD SAMPLING TRIP, MARCH 13, 1984.

This is Tom Riggs. With me on this trip are Michael Sansone, Cadmus L. G. Goss (Professional Engineer), Angel Rea and David Rea.

We are starting at the Moore campsite, Site 27. We have just done a 10 assay sample program on the property. We are going to take the samples that have been generally mostly copper and copper sulfates in the area. There was a little bit of copper calcophyrite showing. But it was very little. It seemed like the miners got deep enough to get into the area where the oxidation hadn't eroded the pyrites away. The samples were tarped, taken on 7 foot intervals throughout the vein, well marked, well defined in the area. There is no doubt as to where the vein structure and country rock end. The host rock seems to be volcanic, very broken. There is quite a bit of brecciation in the ore in certain areas. These 15 to 20 pound samples will be taken to be ground into quarter-inch minus through a chipmunk grinder and then split out. Two samples of these splits will be sent to a control lab and the remaining 8 samples will be run through our lab. The number 10 sample was taken from this area as a waste rock sample just to check the mine run of the glory hole roof. There seems to be about 6 to 12 inches of material left in the roof that may not have been of economic value to mine at that time, considering the costs and methods then available.

The vein goes in a north-northwesterly direction and dips back to the northeast at about 30 degrees. The glory hole area includes an area that is about 60 feet by 60 feet. There are two winzes that go down off of the glory hole. One winze is in a crosscut just to the northwest of the glory hole. The other winze is straight in the northeast corner of the glory hole. The winze in the northeast corner only goes down about 15 feet. It is filled with mud and water. The northwesterly winze goes down about 15 feet then it was drifted on a crosscut back into the northeast direction again. It seems like they were going to intersect the northeasterly winze and then block out the ore that way.

The veins in that area tend to be wider in structure, 38 to 40 inches, measured with a tape measure. The crosscut leaves the glory hole in country volcanic rock. It goes about 60 feet and intersects another vein. At that point there was a glory hole and another decline that was sunk in that vein. In that area there was a major fault that breaks the vein samples 4 and 5. One vein tends to lay back to the southwest and the other one goes back to the north-northwest. On the Northwesterly break there is a secondary winze that goes down and comes to the surface for a haulage road, and it goes down a distance of about 70 feet.

Also in this area we ran onto another decline that we labeled as 27B. It seems to be an extension of the northeasterly vein where the winze comes to the surface there. The decline comes to the surface. It lays in the same area, about 150 feet from Site 27. The vein direction tends to lay the same as in Site 27. The texture of the vein tends to be the same with the same brecciation of broken ore. There is a plug at the bottom so you can only go in about 40 feet. It is full of dirt.

The following report was prepared by E. THOMAS RIGGS on March 13, 1984.

This information was dictated into a tape recorder while on-site at each of the locations.

The dictated information was later transcribed in the herein form.

The "target area" of this report covers parts of 8 claims which include approximately 80 acres. A map is attached which designates this subject "target area".

During this survey by Riggs, under the supervision of CADMUS L.G. GOSS, P.E., 44 samples were collected and delivered to the assay laboratory of Unity Mining Company at Forpaugh, Arizona. Assay reports on 29 of these samples are incorporated herein.

From the 29 samples, 8 splits were sent to Skyline Labs, Inc., Tucson, Arizona, by Goss for comparative assay. Copies of these reports are incorporated herein.

A PRELIMINARY
GEOLOGICAL INVESTIGATION
ON MINING PROPERTIES OF
MICHAEL C. SANSONE

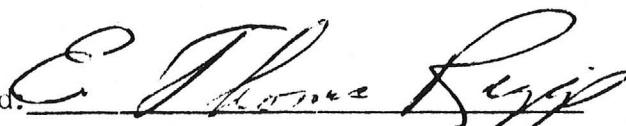
March 13, 1984

Bullard Peak Area

Maricopa County, Arizona

Transcribed from notes
dictated by E. Thomas Riggs

Signed.

The image shows a handwritten signature in dark ink. The signature is written in a cursive, flowing style. It begins with a large, stylized 'E' that loops around. This is followed by the word 'Thomas' in a similar cursive script, and then the word 'Riggs' which also flows into the cursive style. The signature is written over a horizontal line.

E. Thomas Riggs

Consultant, geology - exploratory drilling

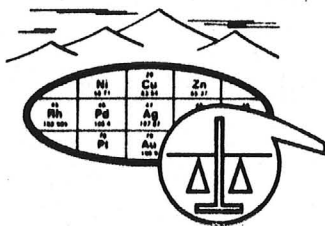
Site 24.

Site number 24 lies in the Unity Group, on the north side of Bullard Peak. This site appears to be a small prospect hole. We took a sample of it even though the vein width was only 3 to 4 inches wide. The prospect was maybe 5 feet deep.

The area is fully broken up. There is copper extruded out into the volcanic area. There has been tremendous pressurized area in this location. Anywhere there was a fissure, there has been a small amount of copper intrude into the area.

No samples were taken from

Site Number 24.



SKYLINE LABS, INC.

1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

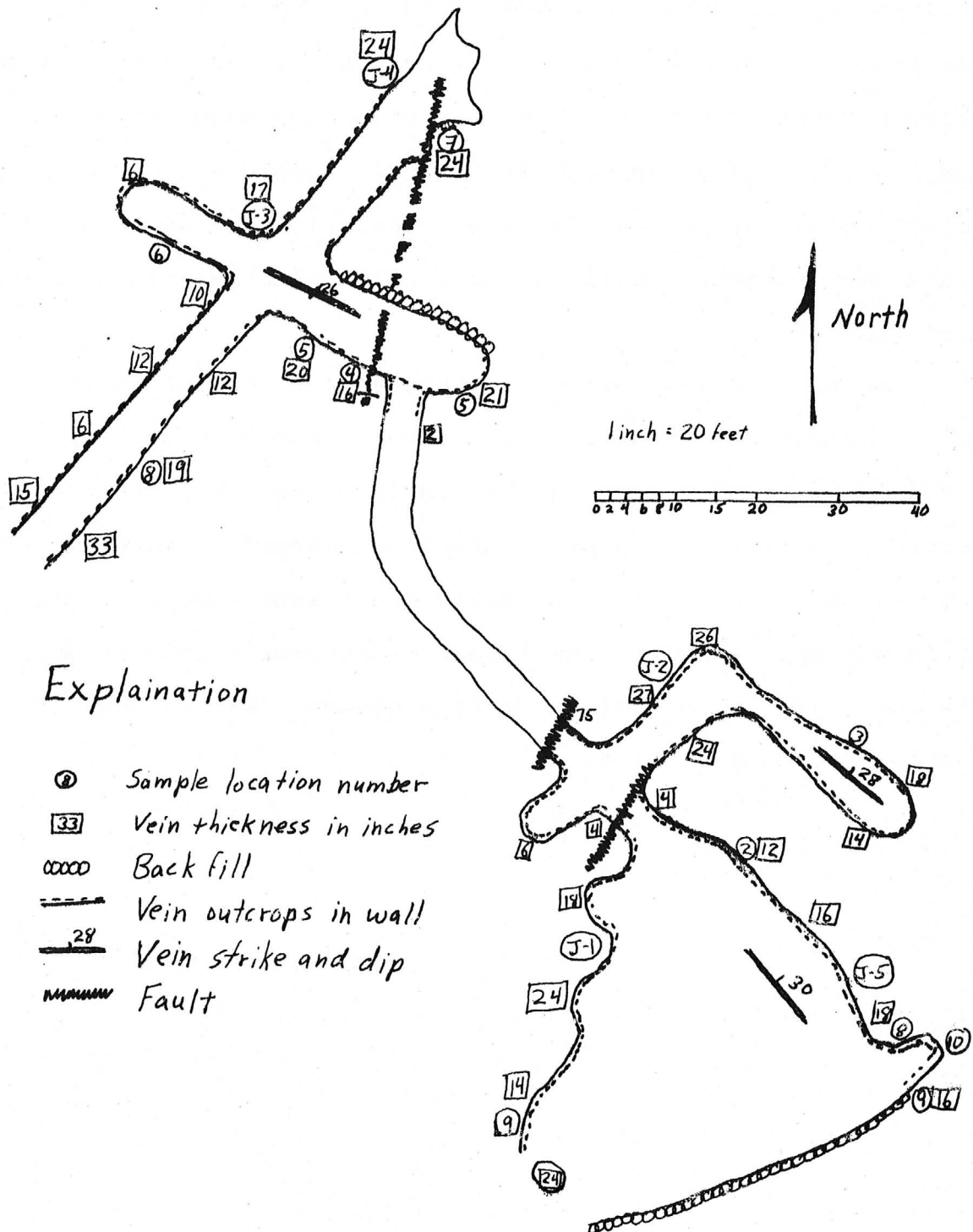
JOB NO. URU 001
May 22, 1984
B-21-2 TO B-27-9
PAGE 1 OF 1

REALTY INVESTMENT COMPANY
Attn: Mr. Michael C. Sansone
P.O. Box 10402
Phoenix, Arizona 85064

Analysis of 8 Ore Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY	
		Au (oz/t)	Ag (oz/t)
1	B-21-2	.940	.30
2	B-22-4	.100	.38
3	B-23-2	.720	1.08
4	B-23-3	1.150	.49
5	B-25-3v	.165	.12
6	B-26-3	.090	.21
7	B-27-6	.445	.64
8	B-27-9	.600	.46

Plan Projection of the John Moore Mine



north-east but a few strike north-east and dip south-east. Cutting faults generally strike north. Mineralized veins occur as silicates, carbonates, oxides, and sulfides. The most prominent minerals are chrysocolla, malachite, azurite, cuprite, chalcopyrite, hematite and pyrite. The majority of the vein material is quartz and calcite gangue. Gold and silver occur as electrum and as native elements. The wall rock adjacent to veins have been bleached (sericite or argillic alteration) and occasionally chloritized.

Economic veins form in dilational portions of faults. Veins of considerable thickness can pinch to non-existent in a matter to tens of feet; veins can be displaced by later faulting. Sub-surface drilling can pass through uneconomical portions of an otherwise rich vein; you really don't know what's there until it's dug up. However, by linear measurements and estimates, and through sampling establish average grades, we can generate estimates of tons and value.

ECONOMIC GEOLOGY:

The mineralization in the Bullard claims occurs as veins in fault and shear zones. The possibility of a bulk, low-grade, disseminated gold porphyry warrants further investigation. The veins must be the present target, however, since a porphyry could not be considered properly until a large amount of subsurface data has been obtained. This data may be generated as a by-product of drilling for vein targets.

The age of mineralization is younger than the andesite porphyry and older than late-Tertiary faulting. The occurrence of good mineralization at the "Broken Ladder" hosted in the Pre-Cambrian gneiss may indicate that veins will extend into basement and could be younger than metamorphic core complex development. All other veins are hosted in the andesite porphyry. Indirect evidence suggests that mineralization may extend to greater than 900 feet; this distance is unusually large for this type of deposit, but believable. Another geologist working in the area suggests that, "samples indicate that lower in the section higher average values may exist." This, again, would be unusual for this type of deposit, but could make development attractive. In some cases, notably 'Red Hill and possibly John Moore and Unity Group, veins are still only a few feet wide, but several, parallel veins occur in a shear zone 10's of feet thick.

Veins exposed to date generally strike north-west and dip

ROCK DESCRIPTIONS:

Andesite Porphyry to Porphyritic Diorite

Rock weathers black, green and red; grey on fresh surface, usually high fractured; slope former.

Plagioclase: 20-50% white to grey, euhedral, rarely corroded, flow oriented (?), porphyritic, argillic altered.

Augite: less than 10% euhedral, black, chlorite altered.

Aphanitic: 20-70% fine granular, grey.

Accessory: Hornblende, magnetite and olivine.

Secondary: Quartz and calcite.

Sedimentary

Clastics are usually red and cliff formers. Sandstone is rarely well rounded and sorted. Most commonly the rock is conglomerate. Pebbles to cobbles are usually granitic, rarely basaltic and occasionally lithic. Rare cut and fill. Shales are fissile to blocky, aphanitic. All rocks have suffered at least low grade metamorphism.

The freshest rock in the area are the limestones. Brecciated in the hanging wall of the Bullard Mine, they appear very well preserved in the flats of the Extension Group of 48 claims.

They are composed of 80% micrite with 20% chert nodules. Echinoderm spines have been replaced by silica and well preserved. Other fossils may be fusulinid and rugose coral could assign an upper Paleozoic age.

ANDESITE PORPHYRY

From Cretaceous to mid-Tertiary, this Laramid pluton intruded into a shallow level of the crust. Its intrusion, as dikes and sills, disrupted and assimilated all previously existing strata.

In a few outcrops the porphyry weathers to mimic an extrusive texture. Although some portions of the unit may have been extrusive volcanics, the larger majority of field relations indicate an intrusive origin for this rock.

The Andesite porphyry of this report is equivalent to the "Diabase" of the DeLuxe (April, 1980) report. Although locally the rock may be diabatically textured, more generally the rock has a porphyritic texture. The Andesite porphyry is the host for at least one wall, and usually both walls, of all mineralized veins in the area, with the notable exception of the "Broken Ladder" mine.

A subject beyond the scope of both this paper and existing samples, but a subject that does deserve further investigation, is that the Andesite porphyry could be the host of a bulk, low-grade, disseminated gold porphyry-type deposit. The Andesite porphyry makes up the vast majority of the outcrops of the area and is under a thin alluvial cover in the Aguila Extension claim block. This rock may extend another 2 miles to the west and several miles to the north and east of the Bullard Claim area.

GEOLOGY OF THE BULLARD CLAIMS:

The story of the Bullard claims is basically one of Phanerozoic sedimentation and volcanism which are intruded by a Laramide porphyry. All of these rocks are faulted and locally overturned by listric faults as the metamorphic core complex develops to the north-west. Mineralization is post-porphyry but before some late-Tertiary faulting.

The Pre-Cambrian in the claim's area is now represented by the granites and gneisses in the metamorphic core complex of the Harcuvar Mountains. These rocks are separated from the rocks of the Bullard claims by a major east-north-east fault that is covered but probably listric and normal.

The sediments of the area are conglomerates, sandstones, shales and limestones of probable Paleozoic age. These rocks have been intruded by a Laramide Andesite Porphyry. Later deformation has resulted in the sediments generally striking east-west and dipping near vertical. Some sediments and volcanics are not involved in the intrusion and possessing different bedding attitudes are mapped as Tertiary in age.

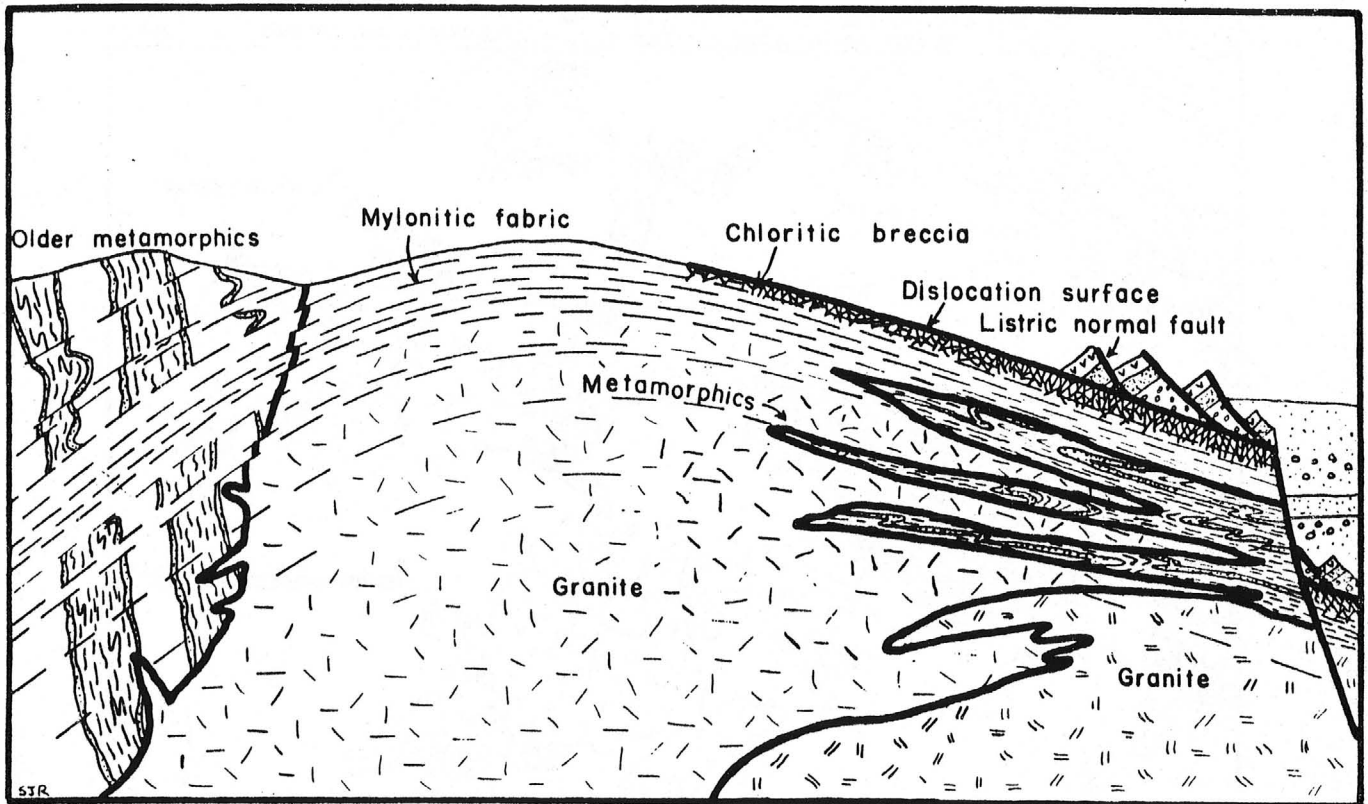
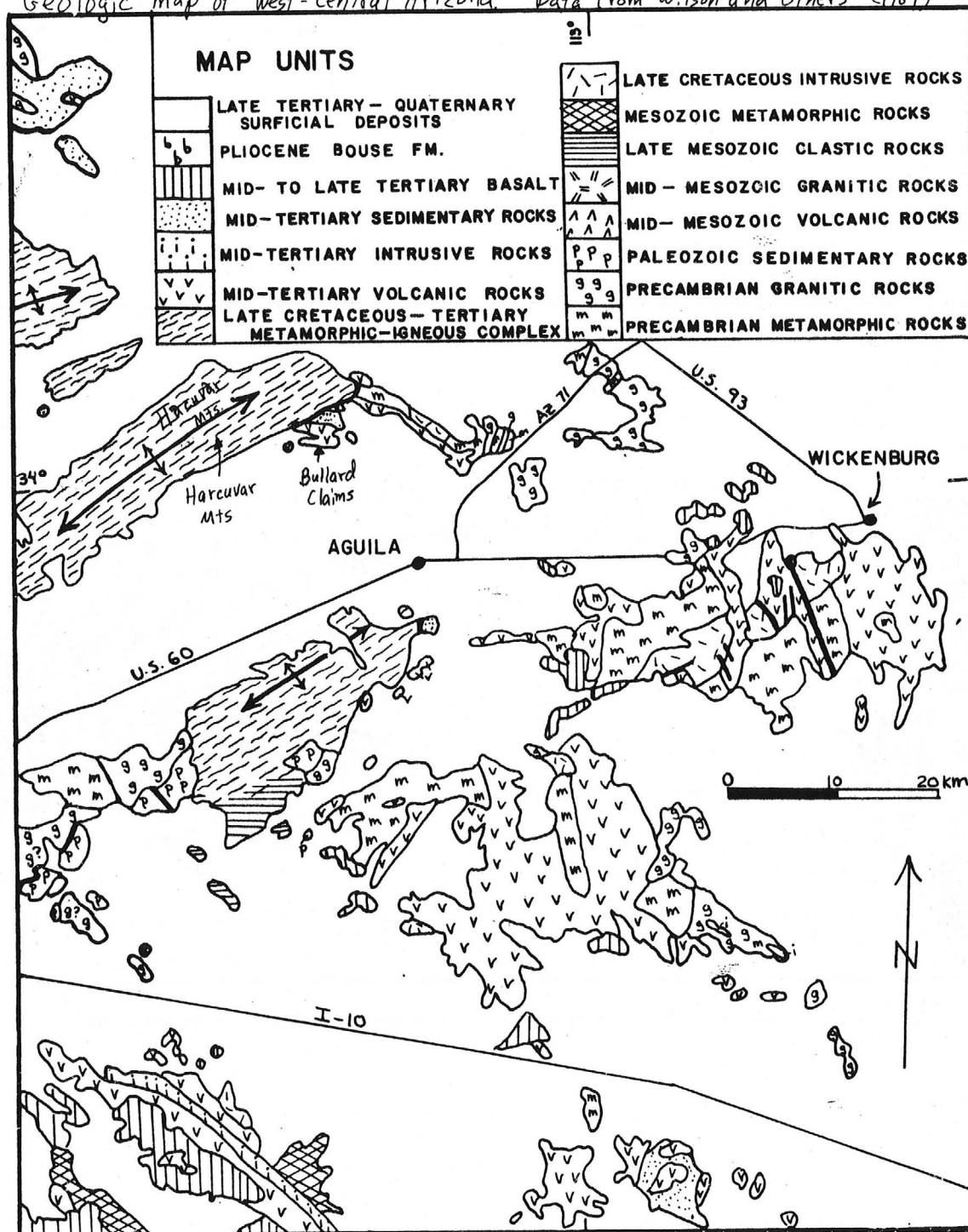


Fig. 4. Schematic cross section across a "typical metamorphic core complex"

Geologic map of West-central Arizona. Data from Wilson and others (1969)



modified using maps of Ciancagelli (1965), Jemmett (1966), Miller (1966, 1970), Shackelford (1975), Rehrig and Reynolds (in press), Rehrig and others (this volume), Marshak (1979), Arizona Public Service (1975), and regional and detailed mapping by S. Reynolds.

REGIONAL GEOLOGY:

The Bullard claims occupy hills of low to moderate relief situated on the south-east flank of the Harcuvar Mountains. These mountains were formed twenty to thirty million years ago by a metamorphic/tectonic event. There are several of these "metamorphic core complexes" in the Basin and Range province of both Arizona and California; the Harcuvars seem to be typical of them. These complexes appear as broad up-arches of Pre-Cambrian basement. As the up-arching proceeds, the Pre-Cambrian develops sub-horizontal joints and foliations while the Phanerozoic rocks above the basement are typically faulted by low-angle, listric, normal faults. These faults result in highly deformed, near vertical dipping Phanerozoic strata on the flanks of the metamorphic core complex.

The Laramide orogeny has effected many areas of the Basin and Range. The area of the Bullard claims are now largely occupied by an intrusion of this age. These rocks intrude the Phanerozoic strata from 100 plus to 30 million years ago and subsequently rotated through 90 degrees by the listric faults. Mineralization in the area is post-intrusive. Mineralization is cut by late Tertiary faults.

ABSTRACT

The Paleozoic stratigraphy of the Bullard area claims has been obscured by the shallow intrusion of a Laramide Andesite porphyry. In the Mid-Tertiary, the area was effected by the metamorphic core development in the Harcuvar Mountains with subsequent listric normal faults. The area also has mid to late Tertiary sediments and volcanics. The ore forming event(s) are post Andesite intrusion.

Mapping and sampling in the Bullard claims indicate six veins with an estimated total of 673,000 tons and value of 90, million dollars. The possibility of a bulk, low-grade porphyry gold deposit may be considered as drilling proceeds to prove vein targets. Geophysics should be the next step at the Bullard property.

INTRODUCTION:

The town of Aguila, Arizona, is located twenty five miles west of Wickenburg, Arizona, on US 60. The field area for this investigation is the Bullard Claims located eleven miles to the north-west of Aguila. The area is accessible by seven miles of county maintained road and four miles of road which is passable by two-wheel drive vehicle. Present road conditions are good. Vegetation is typical of the upper Sonoran Desert. Water does exist in the mine workings and local wells.

The area has been mined intermittently since the late 1800's. Early records are sparse to non-existent. In the 1940's, records indicate 5,500 tons of ore removed averaging 0.32 oz/ton of gold, 0.24 oz/ton of silver and 2% copper. In the 1950's, ASARCO took 43 samples which averaged 0.25 oz Au/ton, 0.5 oz Ag/ton and 2.67% copper. The area has been mined as recently as 1980. There are 166 claims in the Bullard group of claims held by Michael C. Sansome. These claims surround a block of patented claims of record.

"A GEOLOGICAL INVESTIGATION OF THE
BULLARD MINE, AGUILA, ARIZONA"

Jeffery W. Giese

April, 1984

JOHN MOORE VEIN

A portion of this vein is on the patented property.

$$1,500 \times 600 \times 2 = 1,800,000 \text{ cu. ft.}$$

$$1,800,000 / 13 = 140,000 \text{ tons}$$

12 samples within this structure, processed in 3 laboratories, yielded an overall average of .411 oz/ton Au.

JOHN WEST VEING

To the west of John Moore I found two different veins with attractive widths.

$$\text{JW1} \quad 500 \times 500 \times 3 = 750,000 \text{ cu. ft.}$$

$$750,000 / 3 = 57,000 \text{ tons}$$

$$\text{JW2} \quad 700 \times 500 \times 4 = 1,400,000 \text{ cu. ft.}$$

$$1,400,000 / 13 = 107,000 \text{ tons}$$

One sampling from this area yielded .334 oz/ton Au.

UNITY

This could prove to be the richest vein on the property.

$$2000 \times 600 \times 2 = 2,400,000 \text{ cu. ft.}$$

$$2,400,000 / 13 = 185,000 \text{ tons}$$

An average of 19 samples, processed in 3 laboratories yielded .498 oz/ton Au; .48 oz/ton Ag.; and 2.3% Cu.

These three groups lie within an arc of 135 degrees, having a radius of 1,800 feet from Bullard Peak, and comprising approximately 80 acres. Collectively, this area should be designated as a "target area".

Average values of \$390/oz. Au., \$10/oz. Ag. and 66¢/lb. Cu. are used herein.

This "target area", totalling 498,000 tons would yield -
\$96,491,940.00.

BROKEN LADDER

In the Aguila Extension claims is the Broker Ladder. This is a good looking vein with inclined shaft whose extension is under the Tertiary gravels. For this, we must estimate not only depth, but also length.

$$1000 \times 600 \times 2 = 1,200,000 \text{ cu. ft.}$$

$$1,200,000 / 13 = 92,000 \text{ tons}$$

Four samples, processed in 3 laboratories, yielded .557 oz/ton Au. This yield, coupled with the district average of .23 oz/ton Ag and 2.3% Cu. and 92,000 tons would result in \$22,894,720.00.

The combined total of yields is:

"Target Area".... \$ 96,491,940.00

Broken Ladder.. 22,894,720.00

Total Value \$119,386,660.00

The above sites on which these estimates have been made comprise only a small portion of the total number of known sites within the boundaries of the 152 lode claims owned by Sansone.

GEOLOGIC RECOMMENDATIONS:

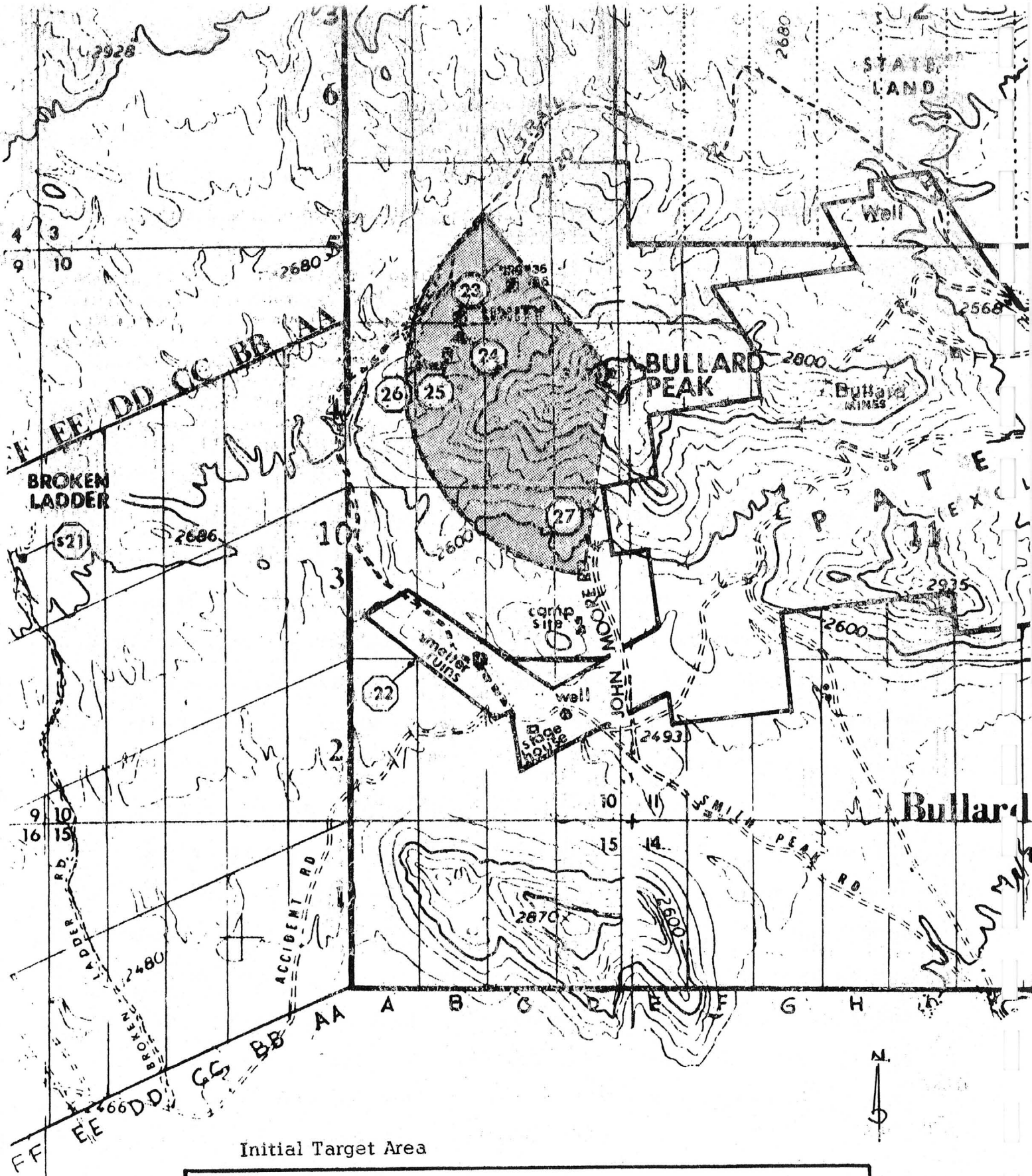
The next step is a more thorough sampling of outcrops. The two veins west of John Moore have not been sampled; each has an adit which needs mapping and sampling. More samples could be taken between existing sample locations to get a better idea of the mineralization which is in outcrop and in the shallow, existing mine workings.

The most emphatic recommendation is a geophysics program. The method to use would probably be induced polarization. The first uses would be on the "Owl" and "22" to determine their strike length and depth. By these small scale surveys we may determine how effective this method is in the detection of ore at the property. It should prove successful and the next place for a survey would be on a larger scale in the areas south of the Unity Group and west of John Moore. If this is still giving good results, then a still larger scale survey should be undertaken in the Aguila Extension.

The better anomalies of the geophysical survey should be drilled into. Drilling may produce favorable results on the dip side of veins. The first intercepts of the veins should be approximately 200 feet below surface. Deeper holes will probably not be used unless favorable intercepts occur. It bears repeating that drilling can pass between the rich portions to show poor results on a good vein. The most enlightening program could well be a geophysical survey.

Wickenburg, Arizona
April 30, 1984

Jeffery W. Giese
Jeffery W. Giese



Initial Target Area

Striking a 135 degree arc with a radius of 1800 feet from Bullard Peak to encompass the sampled locations results in an initial target area of approximately 80 acres.

RESUME

FOR:

Jeffery Wayne Giese
20 Gold Finch Circle
Sierra Vista, Arizona 85635
(602) 378-6038

EMPLOYMENT OBJECTIVE:

Staff Geologist with career opportunities for advancement.

EDUCATION:

University of Arizona Bachelor of Science in Geology awarded May 1981. Geology grade point average in excess of three. Geology courses taken included Intro to Geology, Mineralogy, Intro to Paleontology, Micropaleontology, Paleo-ecology, Sedimentology, Principles of Stratigraphy, Structural Geology, Geologic Implications of Plate Tectonics, Optical Mineralogy and Petrology, Economical Mineral Deposits and a five-week geology field camp. Other areas of study were in Geophysics, ash flow tuffs and Hydrogeology.

Other classes from my University curriculum provided a thorough understanding of Trigonometry, Calculus, Statistics, Computer Programming, Chemistry, Physics and additional areas of study.

WORK HISTORY:

From September to December, 1982 (Uranerz, U.S.A., Inc.), Andre Guitier and I reconnaissance mapped a large area northeast of Wickenburg, Arizona, of Pre-Cambrian schist, gneiss, migmatite and granite at a scale of 1:100,000. In the company's claims, two other geologists and I mapped and sampled a 725 foot adit and logged and sampled 6,000 feet of core. From June to November of 1981, I did a field study in Sonora, Mexico, mapping and sampling fifteen square miles for ore bodies evaluations. For two weeks after graduation, I toured Ontario, Canada, economic deposits with a group of graduate students from the University of Arizona. During college, aside from several part-time jobs, I worked one full-time summer on several locations near Coalville, Utah, including Shell's off-shore platform in the Salt Lake.

REFERENCES:

Andre Guitier, Uranerz, USA, Inc., Wickenburg, AZ
(602) 684-7357

John M. Guilbert, University of Arizona, Tucson, AZ
(602) 626-2509

INTERESTS:

Photography, rock collection and sports.

PERSONAL DATA:

Single; 6'3" tall; 190 pounds; excellent health

**"A GEOLOGIC INVESTIGATION OF THE
BULLARD MINE, AGUILA, ARIZONA"**

Knoxie C. DeLise, P.E.

October, 1981

The following Geological report was prepared for
NRG Resources by KNOXIE DE LISE on patented
claims which adjoin the 166 claims owned by
MICHAEL SANSONE.

This report and test samples extend into the claims
controlled by Sansone.

Plate One, at the end of the report, shows that the
highest reported gold content was assayed from
samples #135 and #136. These two samples came
from Sansone claims.

PROFESSIONAL STATEMENT

I, Knoxie C. DeLise, do hereby certify in the County of San Diego, California, that:

1. This report was prepared for NRG Resources, Ltd., and that I have no interest in NRG Resources, Contract Mining Corporation or Brunyan Resources, Ltd. I also certify that I will not in the future receive any interest in these companies.
2. This report is based on my personal examination of the Bullard Mine patented mineral claims.
3. I hereby certify that I hold neither direct nor contingent interest in NRG Resources Ltd., Contract Mining Corp. or Brunyan Resources Ltd.
4. I am a consulting geologist with a business address at 9043 Harmony Grove Road, Escondido, California 92025.
5. I am a graduate of the University of California, Berkeley, with advanced degrees in the geological sciences in 1955 and 1957.
6. I am a duly registered and licensed professional geologist and a member in good standing of the Society of Mining Engineers, the American Association of Petroleum Geologists, The Society of Economic Paleontologists and Mineralogists and other professional associations.

PROFESSIONAL STATEMENT (continued)

7. I have practiced my profession for more than 20 years.
8. Consent is hereby granted to NRG Resources Ltd., to reproduce all of this report with or without plates, figures or appendices.

Dated in the City of Escondido, County of San Diego, California
this 24th day of October, 1981

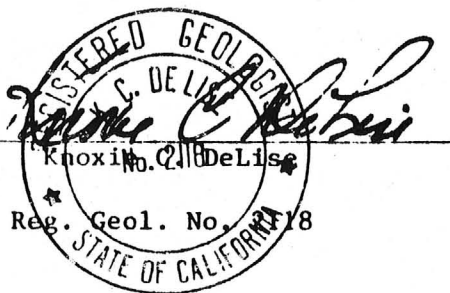


TABLE OF CONTENTS

	<u>Page</u>
1. ABSTRACT -----	1
2. INTRODUCTION -----	3
A. Location -----	3
B. Area of Interest -----	3
C. The Claims -----	5
3. PAST WORK -----	5
4. GENERAL GEOLOGY -----	6
A. Introduction -----	6
B. Lithology -----	7
a. The Diabase -----	7
b. The siliceous Sandstones -----	8
c. The Meta-shales -----	9
d. The Conglomerate -----	9
C. Structure and Stratigraphy -----	10
5. ECONOMIC GEOLOGY -----	18
A. The Mineralized Zones -----	18
B. Assays and Values -----	22
C. Potential and Observed Ore Areas -----	23
6. DEFINITION OF MINERALIZED RESERVES -----	24
A. Measured Mineralized Reserves -----	24
B. Indicated Mineralized Reserves -----	25
C. Inferred Mineralized Reserves -----	25

TABLE OF CONTENTS

	<u>Page</u>
7. RESERVES -----	25
A. The Bullard Vein -----	25
B. Area West of Stone Cabin -----	26
C. Fault Area of Sulla Claim -----	26
D. Fault Zone of International Claim -----	27
E. The Bullard Extension -----	28
F. Other Reserves -----	28
8. RESERVE SUMMATION -----	29
9. PROGRAM OF EXPLORATION -----	29
A. Geophysics -----	29
B. Drilling -----	30
10. PROGRAM OF MINE DEVELOPMENT -----	32
11. ORE TREATMENT -----	34
12. MISCELLANEOUS -----	35
13. REFERENCES -----	36

PLATES

FIGURES

Figure A (Location map) -----	4
Figure 1 (Paleogeographic Map; Cambrian to Mississippian) -----	11
Figure 2 (Paleogeographic Map; Pennsylvanian) -----	12
Figure 3 (Paleogeographic Map; Late Triassic) -----	14
Figure 4 (Paleogeographic Map; Late Jurassic) -----	15

TABLE OF CONTENTS

	<u>Page</u>
Figure 5 (Paleogeographic Map; Cretaceous) -----	16
Figure 6 (Paleogeographic Map; Late Cretaceous/Early Tertiary) -	17
Figure 7 (Paleogeographic Map; Middle Tertiary) -----	19
Figure 8 (Paleogeographic Map; Late Tertiary) -----	20

ABSTRACT

The Bullard Mine consists of 26 lode claims in southwest Yavapai County, Arizona. The outcrop exposures are visible in the foothills adjacent to, and southeast of the Harcuvar Mountain Range.

Economic conditions have controlled mining at the Bullard since the late 1800's. Subsequently, such mining has been intermittent with probably 10,000 to 20,000 tons having been extracted up to 1970.

The area consists of Paleozoic clastic strata and limestones, possibly of Devonian or Mississippian age, intruded by thick diabase sills, all of which have been rotated to vertical. The diabase appears to be Late Cretaceous or Early Tertiary and is related to the Laramide orogeny. Mineralization is expressed as silicates, carbonates, oxides and phosphates of copper with small quantities of associated gold and silver, as well as sulphides. This mineralization appears in faults, shear zones, fissures and some bedding planes and pre-dates the major, Late Cretaceous orogenic movements. Bullard mineralization occurrence is seen as intrinsically related to the diabase intrusive. Tertiary faulting has subsequently superimposed a complex structural pattern upon these beds.

Mineralized zone reserves are calculated as: 40,000 tons (measured), 72,693 tons (indicated) and 612,643 tons (inferred). Average assays show .22 oz/ton gold, 0.23 oz/ton silver and

about \$144.00 per ton gross (using \$450.00 per ounce gold, \$10.00 per ounce silver and \$.70 per pound copper.

The implied gross value of the mineralized zones is calculated on a total of 725,336 tons with the resulting figure being \$104,450,000.00.

Treatment procedures of Bullard potential ore are still being studied but early test results indicate crushing to minus 40 mesh with gravity separation to reach 95 to 97% recovery of all sulphides. This would be followed by acid copper leach processes.

2. INTRODUCTION

A. Location

The Bullard mining claims are situated in the Pierce Mining District of southwest Yavapai County, Arizona, 11 miles north of Aguila. The town of Aguila, with a population of around 1000, is on the Santa Fe Railroad, 25 miles west of Wickenburg and 80 miles west-northwest of Phoenix (see figure A).

All-year highways (U.S. 60 and Ariz. 71) reach Aguila with most services available there or in Wickenburg. Roads from Aguila to the claim area are good but can be impassible for a few days after seasonal rains. Adequate water is available for mining purposes from several wells on and near the property and in abandoned shafts.

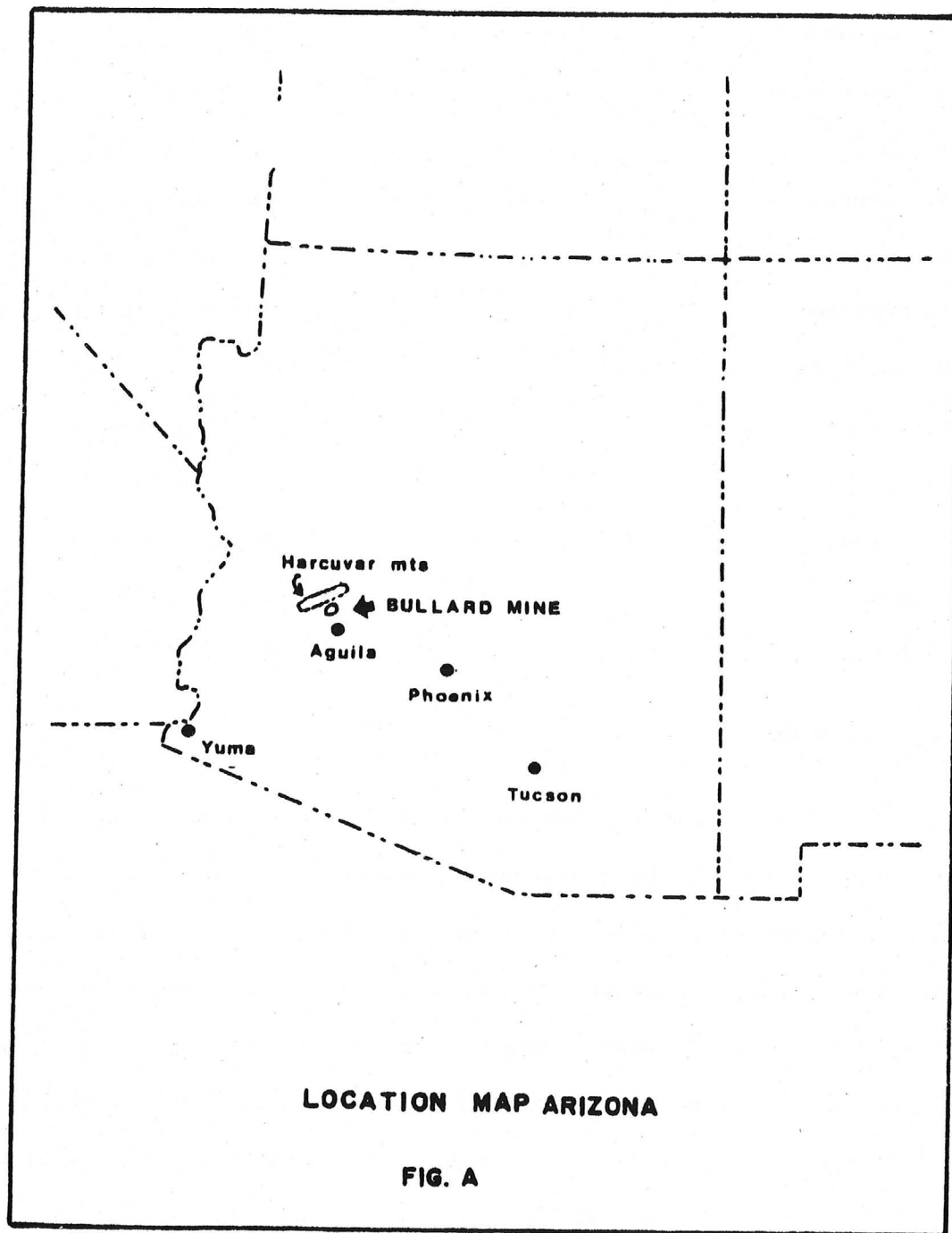
B. Area of Interest

The Bullard Mine is at an altitude of about 3000 feet. There are 26 lode claims which occupy a total area of 537 acres (0.84 square miles or 2.17 square kilometers).

A reconnaissance geologic map was completed in January of 1981 overlaying the claim area in particular and although time limited the detail of mapping, contiguous surrounding features were also investigated and mapped. The total resultant map area covers 3.3 square miles or 8.5 square kilometers (see Plate 1,2).

C. The Claims

The claim boundaries are outlined on Plates 1 and 2 and are identified as follows:



CLAIMS

- | | |
|--------------------|-------------------|
| 1. North Extention | 14. Rattler |
| 2. Augustus | 15. Emily |
| 3. South Wing | 16. Steller |
| 4. Sulla | 17. North Star |
| 5. Chancellor | 18. Homestake |
| 6. Amazon | 19. Washington |
| 7. Newborn | 20. International |
| 8. Napoleon | 21. Sweep Stake |
| 9. Venice | 22. Avalanche |
| 10. Jay Bird | 23. Last Bean |
| 11. Nevada | 24. Democrat |
| 12. Producer | 25. Arizona |
| 13. Butte | 26. State |

3. PAST WORK

The Bullard property has been optioned to various groups and individuals through the years and a complete chronology is beyond the scope of this report. However, the reader is referred to the appendix where some of the documents have been reproduced. At least one company, Powdered Metals Corporation (PMC), churn-drilled several holes on the claims from 1969 to 1970. Some of the holes are shown on plate 1. Unfortunately, the information and data from the PMC drilling is, so far, not available. Powdered Metals Corporation went into bankruptcy in 1973 or 1974.

The Bullard Mine has a long history of intermittent operation since the late 1800's. It is known that a smelter was built around 1887 and according to Durfee (report undated; p. 1) worked for a short period. The ruins of the smelter are visible today and are noted on the map (see plate 1,2). Durfee also mentions that the coke needed for this smelter was hauled by horse and wagon from the nearest railhead at Maricopa, 100 miles distant. The Bullard family patented the property in 1907.

Later operators and promoters of the Bullard property have reported copper concentrations at around two to three percent with small amounts of gold and silver. In 1950, ASARCO mapped and evaluated the main mineralized horizon, assaying 43 samples for an average concentration of 0.25 oz/ ton Au, 0.50 oz/ton Ag and 2.67% copper.

Shipping records are sparse but workings suggest that probably no more than 10 to 20 thousand tons were shipped before Contract Mining Corporation took over in November of 1979. CMC began mining the property in 1980 and has shipped some 4,000 tons to date. Development is now continuing with NRG Resources Ltd. of Canada and Contract Mining Corporation of Yuma, Arizona.

4. GENERAL GEOLOGY

A. Introduction

The Bullard area is adjacent to the Harcuvar Mountains, the latter of which is a Late Cretaceous or Early Tertiary metamorphic-igneous complex (Reynolds, 1980). The Harcuvar Range is

about 35 miles long, trending northeast-southwest. The area of investigation in this report is an east-west trending series of vertical or near vertical sedimentary strata intercalated with thick sills of olivine diabase and possibly some extrusive volcanic beds.

The sedimentary strata are siliceous limestones, meta-shales and sandstones, probably Devonian or Mississippian in age. The limestones and sandstones are very well indurated, altered by low rank metamorphism and forming high ridges due to their resistance to erosion. Not all the high resistant ridges here are siliceous limestones or sandstones; some of these features are diabase.

Diabase commonly and frequently weathers to low profiles rather readily as seen in other areas such as the Globe-Miami district of central Arizona. Such weathering to subdued topography is seen in the Bullard area. Bullard Peak itself, the highest resistant diabase is probably the consequence of juxtapositioning by faulting or by variable mineralogy or both.

B. Lithology

a. The Diabase

Mapping in the area has revealed the pervasive relationship of a Late Cretaceous or Early Tertiary mafic olvine diabase intrusion as sills into a series of Paleozoic clastic sedimentary strata.

fault zone dipping about 20 degrees to the south. The easterly edge of the bed is bound by what is believed to be a down-thrown normal fault. The south exposure of the vein is probably eroded for a short distance and possibly continues into the subsurface further south (see vertical section A'A" Plate 3).

There are about 678,000 cubic feet of mineralized reserves within the Bullard Vein, using a conservative average thickness of 2.5 feet. Computing this block at 13 cubic feet per ton, gives 52,000 tons of proven reserves, of which about 12,000 tons have already been mined. It is estimated, then, that 40,000 tons of proven mineralized reserves are still left in the Bullard Vein proper.

B. Area west of Stone Cabin in the State, Last Bean, Washington and Democrat Claims. (Indicated 55,384 tons).

This area was sampled from prospect holes and old workings and measures about 1200 feet long by an estimated 400 feet in width with an average thickness of 1.5 feet. The calculations are:

$$1200 \text{ ft.} \times 400 \text{ ft.} \times 1.5 \text{ ft.} = 720,000 \text{ cu. ft.}$$

$$\frac{720,000 \text{ cu ft.}}{13.0 \text{ cu ft.}} = 55,384 \text{ tons}$$

C. Fault Areas of the Sulla Claim (Indicated 28,846 tons)

This area has at least two major faults which are mineralized. These faults trend north-south with the westerly one dipping east

at about 45 degrees and the easterly one dipping west at about 45 degrees (see plate 3, section B'B"). These mineralized fissures may be as deep as 400 feet with an intersection point of about 100 feet. This intersection point would be an ideal objective for the exploration of a concentrated ore body. The thickness of this mineralized zone is at least 2.5 feet and may be much more in the subsurface. With these parameters the calculations are:

$$600 \text{ ft.} \times 1200 \text{ ft.} \times 2.5 \text{ ft.} = 300,000 \text{ cu. ft.}$$

$$\frac{300,000 \text{ cu. ft.}}{13.0 \text{ cu. ft.}} = 23,077 \text{ tons (east fault)}$$

$$600 \text{ ft.} \times 50 \text{ ft.} \times 2.5 \text{ ft.} = 75,000 \text{ cu. ft.}$$

$$\frac{75,000 \text{ cu. ft.}}{13.0 \text{ cu. ft.}} = 5,769 \text{ tons}$$

$$5,769 + 23,077 = 28,846 \text{ tons total}$$

D. The Fault Zone of the International Claim (Inferred 18,461 tons)

Potential reserves in this area can only be inferred because along the faulted zone only intermittent mineralized outcrops are visible. An old shaft was noted at sample localities 123, 123a, 123b and 123c but access was impossible and its dimensions are not known. Samples from this mineralized area were assayed at 0.02 oz/ton Au, 0.10 oz/ton Ag and 2.58% copper, these concentrations seem uneconomical. However, it is felt the high copper content in sample Number 126 (7.9%) for example, is indicative of potentially better values in the immediate area or with depth, the estimated

Dimensions are 600 ft. long by 200 feet in depth by 2 feet in thickness. Therefore:

$$600 \text{ ft.} \times 200 \text{ ft.} \times 2.0 \text{ ft.} = 240,000 \text{ cu. ft.}$$

$$\frac{240,000 \text{ cu. ft.}}{13.0 \text{ cu. ft.}} = 18,461 \text{ tons}$$

E. The Bullard Extension (Inferred 553,800 tons)

The Bullard Extension is that fault zone as depicted in Plate 3 (section A'A"). The fault itself is suspected to exist but has not been confirmed in any way. Locals indicate that a well drilled near the stone cabin penetrated a thick zone of mineralization at 900 feet. There is absolutely no confirmation that such a hole was ever drilled or that even a shaft ever got to that depth. However, it is interesting that the Bullard mineralized zone, which is a fault, when projected to that area near stone cabin, intersects with the subsurface at about 800 to 900 feet. The inference is that if this fault is mineralized as suspected then considerable ore reserves may well be uncovered. Combination rotary and diamond drilling is being recommended for this area.

The demensions of this theorhetical ore body is as follows:

$$1800 \text{ ft.} \times 1600 \text{ ft.} \times 2.5 \text{ ft.} = 7,200,000 \text{ cu. ft.}$$

$$\frac{7,200,000 \text{ cu. ft.}}{13.0 \text{ cu. ft.}} = 553,800 \text{ tons}$$

F. Other reserves

If the concept of Late Cretaceous - Early Tertiary faulting is correct then there may be several zones of flat-lying faults

This suggested
projection
goes through
Sansone
claims



which may have been rotated from their original high-angle, normal position. These could be very mineralized and add greatly to the reserves.

8. RESERVE SUMMATION

	Tons
a. Bullard Vein	40,000 Measured Mineralized Reserve
b. West of stone cabin	55,384 Indicated Mineralized Reserve
c. Sulla Claim	28,846 Inferred Mineralized Reserve
d. International Claim	18,461 Inferred Mineralized Reserve
e. Bullard Extension	<u>553,800</u> Inferred Mineralized Reserve

Total 696,491 tons

696,491 tons at \$144.00 per ton = \$102,450,000.00

Bullard
Extension
goes through
Sansone
claims

9. PROGRAM OF EXPLORATION

A. Geophysics

The exploration program will consist of a ground electromagnetic survey. The most intense mineralization is expected to be relatively flat-lying with dips of around 20 degrees with associated smaller veins at higher angles, perhaps 45 degrees or more. The flat-lying veins can be expected to be bound on all sides by possible tertiary faulting which could create a note-worthy anomaly. A magnetic survey should be considered and may be very useful for detecting sub-surface structural manifestations. Induced polarization methods may also be of use. Resistivity surveys should be avoided in the

Bullard area due to poor results experienced in this desert environment.

The exploration program will consist of a ground geophysical survey. A grid system over the Bullard Vein will be established with a base-line in a N45W direction.

Twenty-two grid lines, 4000 feet long will then be established perpendicular to the base-line on 200 foot spacings. A 200 foot station interval will be established and data collected on the 100 foot intervals to reduce geologic noise and detect near-surface conductors.

This geophysical survey would consist of 17 line miles at current costs of \$800.00 per line mile. This includes technicians, equipment and interpretation of the results. The purpose of this ground survey is to delineate the Bullard Vein in the southerly direction where past reports have indicated its locations. The geophysical results will be correlated with known geologic data to establish the continuity of the Bullard Vein within the grid system.

Total cost for this program is estimated at \$15,000.00.

B. Drilling

It is recommended that all anomalies outlined by the previously described geophysical surveys be physically investigated by drilling. The initial phase of this program could be completed by rotary drilling to reduce the cost per foot. If the results

are encouraging, a diamond drilling program could be undertaken to determine grades and any change in the tenor of the mineralization. At the present time, numerous rotary drills are available in the area. Present quotes range from \$3.85 to \$8.55 per foot, depending on the total footage of the contract. At this time no estimate of footage is possible until geophysical data is created and interpreted to determine location and depth of the anomalies.

Specific areas are recommended for diamond drilling (see plates 1 and 2). These are described as follows:

Diamond core drilling is recommended as follows:

1. DDH-1: Vertical drill to prove Bullard vein on the down-thrown block east of present exposures and on the south flank of Bullard Ridge. Drill DDH-1A, B, C, etc. as necessary if ore mineralized zones are encountered. The expected depth is 50 to 100 feet maximum.

2. DDH-2: Angle drill at 60 to 45 degrees west to penetrate the mineralized fault zones at depth (see B'B", plate 3). Probable depth is about 200 feet. Add DDH-2A, B, C, etc., as determined if ore is intersected. These cores will be on the Sulla Claim.

3. DDH-3: Angle drill 60 to 45 degrees toward the north near stone cabin in the Democrat, Last Bean or even State Claims. This is to intersect the possible fault plane depicted in section A'A" of plate 3. Estimated depth is 900 feet plus. Add DDH-3A, B, C, etc., as necessary if ore is intersected.

4. DDH-4: This coring should be done as a vertical hole in the Avalanche and Sweepstake Claims. Depth to the fault objective is estimated at 200 to 300 feet. Add DDH-4A, B, C, etc. as needed.

10. PROGRAM OF MINE DEVELOPMENT

Mining could commence immediately by initiating work on the 40,000 ton Bullard Vein proper. This mineralized vein has been mined in 1979 by CMC at a profit and it could be stockpiled until milling and beneficiation equipment is installed. Mining could also begin on the 28,000 tons which lie in the Sulla Claim. Only a small amount of road work may be necessary to begin work here.

In any event, the following mine development plan is recommended for the Bullard Mine:

1. The plan includes current costs of equipment and labor. Initiation of the plan could commence as soon as funding is available. Equipment and personnel are readily available in the area and no environmental problems are anticipated.

2. The Bullard Vein on the Washington Mineral Claim was mined at a 200 ton-per-day rate during 1980 by Contract Mining Corporation of Yuma, Arizona. All development work including portals, haulways and truck loading areas has been completed. A room and pillar system was utilized by Contract Mining Corporation during their operation and it is recommended that this system of mining be continued. Costs are estimated at:

Drilling -----	\$.90
Blasting -----	.64
Loading -----	.68
Hauling -----	.52
Roof bolting -----	.64
Air & Water Supply -----	.14
Ventilation -----	.36
Power -----	.22
Development -----	.42
Supervision -----	.65
Engineering -----	.39
Repair & Maintenance -----	.86
Assay & Laboratory -----	.60
Taxes & Depreciation -----	.75
Amortization -----	<u>1.25</u>
TOTAL MINING COST PER TON -----	9.02

3. Engineering, Supervision and labor is based on current salary and wages paid in Arizona. Namely, Professional Engineers at \$350.00 per day, Mine Supervisor at \$3500 per month, Miners at \$13.00 per hour and Laborers at \$9.50 per hour.

Equipment requirements are:

Air Compressor -----	\$20,000.00
Gen. Set -----	10,000.00
Air & Water Line -----	5,000.00

Air Drills with Legs -----	\$ 6,000.00
30 hp Slusher & Bucket -----	12,000.00
10 hp Slusher & Bucket -----	10,000.00
Mining Supplies -----	<u>25,000.00</u>
TOTAL	88,000.00

A portable concentrating mill is available at this time for processing Bullard Vein material. Contract milling costs are quoted as \$20.00 per ton. This includes all labor, milling supplies and fuel. This does not include the transportation of the concentrate to the smelter in Hayden, Arizona, approximately 200 miles from the Bullard Mine in Aguila, Arizona.

I firmly recommend a minimum of \$300,000.00 be allocated for the initial phase of the Bullard Mine development.

11. ORE TREATMENT

Initial studies of the mineralized zones of the Bullard Mine indicate the observed mineralization would respond to a gravity separation after crushing to minus 40 mesh. This treatment should recover 95-97% of all sulphides. The follow-up treatment would be an acid copper leach process. Contract Mining Corporation has, in fact, carried out tests of this type with positive results. I would suggest however, that beneficiation studies be continued as mining an development proceeds to enhance concentration in the

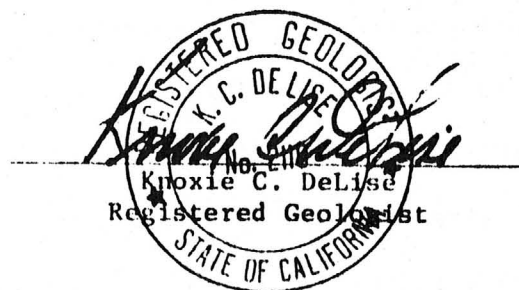
light of subsequent new data or should there be a large variation (unlikely) in the mineralized zones mined.

12. MISCELLANEOUS

A land survey should be done to firmly establish claim boundaries and markers for geophysical and other subsequent surveys.

San Diego, California

October 20, 1981



The diabase is gray to dark gray, often with a greenish hue. It ranges from very coarse grained to aphanitic. As is common in diabase texture, the plagioclase laths are as much as 20 millimeters in length. Poikilitic augite (and hornblende?) in spheroidal to very irregular masses up to several inches long occur as rounded inclusions and curious, unusual shapes (not unlike a coarse porphyritic texture). These often weather out intact and appear as spheroidal "kernels" and rounded, marble-like shapes. Similar diabase texture occurs near the Globe-Miami and Superior areas (Peterson, 1962).

Dark brown augite is abundant in the groundmass and is frequently poikilitically arranged with secondary quartz rim. Euhedral calcite is also noted as "poikiloliths". It is not clear whether these calcite crystals are deuteric or metasomatic in origin. Their presence within the mineralized zones suggests that they are probably metasomatic in origin. Poikilitic and trace olivine is also common as light, bottle green, divergent, acicular crystals, comprising up to 5% of the rock or more. Differentiation of olivine crystals is more concentrated in the lower portions or floors of the thicker sills in the Bullard area. This is a classic example of elutriation or magmatic differentiation of olivine in a theoleiitic diabase sill such as manifest in the Palisades of New York.

b. The Siliceous Sandstones

The sandstones are buff to reddish, thin-bedded to massive from 10 to 100 feet in thickness. These strata are fine to medium

grained, argillaceous, very siliceous, often calcareous, locally with stringers of pebble conglomerate and poorly sorted grits. They are very hard, dense and have been subjected to low to moderate metamorphism and much secondary crystallization. Quartz and feldspar grains are often subrounded, angular to subangular in coarser grained beds.

c. The Meta-shales

The denser, aphanitic texture of the meta-shales are noted in what appears to be an easterly facies change of the coarser sediments found to the west. These meta-shales are often calcareous, very siliceous and have undergone considerable metasomatic change along with low-rank metamorphism. The shales are gray to dark gray, hard and are fissile to blocky. The rock becomes more abundant and more pronounced from west to east as well as higher in the sections, possibly indicating a deepening (facies) of the off-shore basin and also a deepening of the basin with time.

These so-called meta-shales are so fine grained and aphanitic that it is impossible to know the mineralogy in the hand specimen. There certainly exists the possibility that some of the rock types referred to as meta-shales may be in fact, extrusive igneous or welded tuffs. Thin-section examination should identify these in a more positive way.

d. The Conglomerate

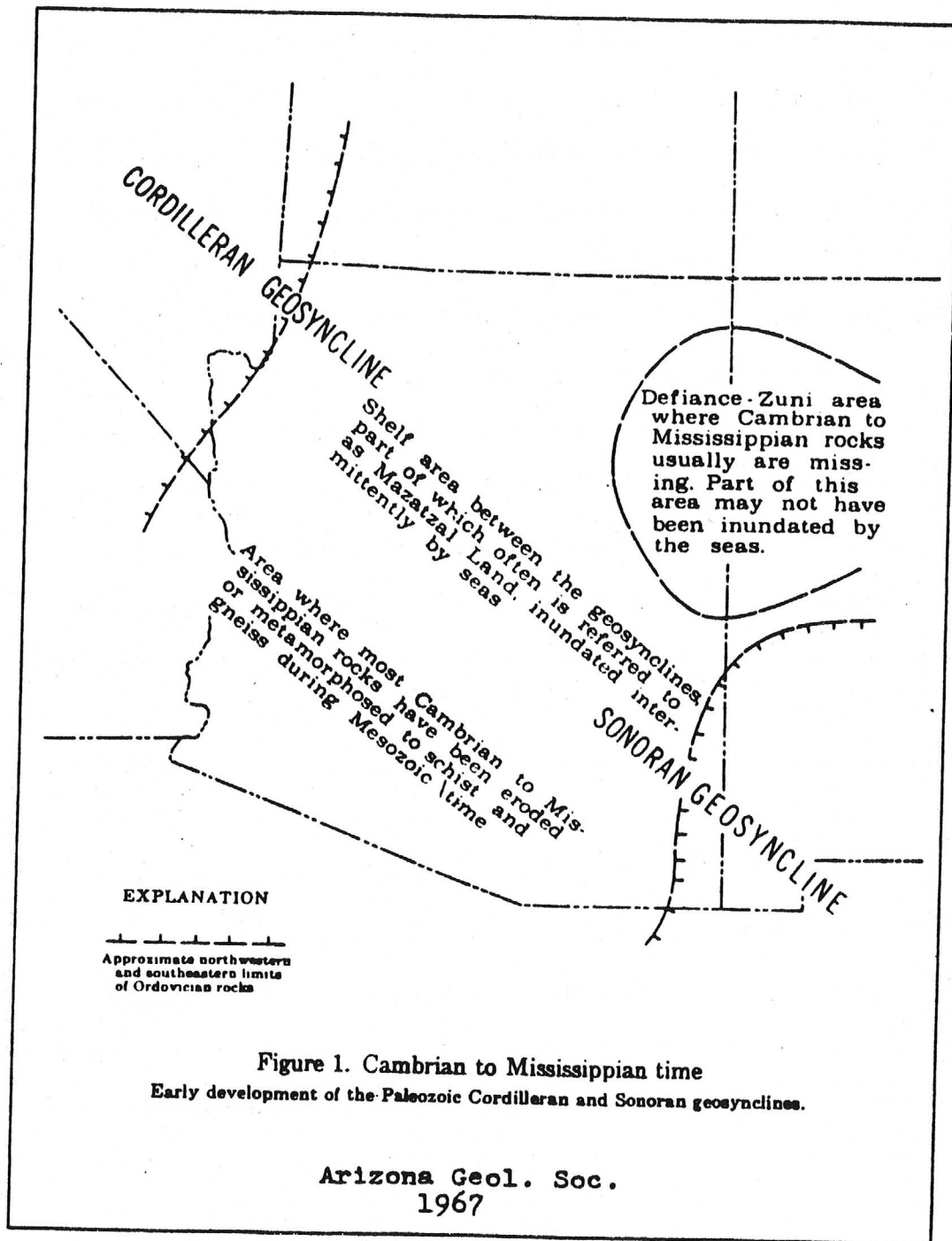
Conglomerates were noted in the eastern portion of the mapped area. In general they are gray to dark gray, calcareous, argill-

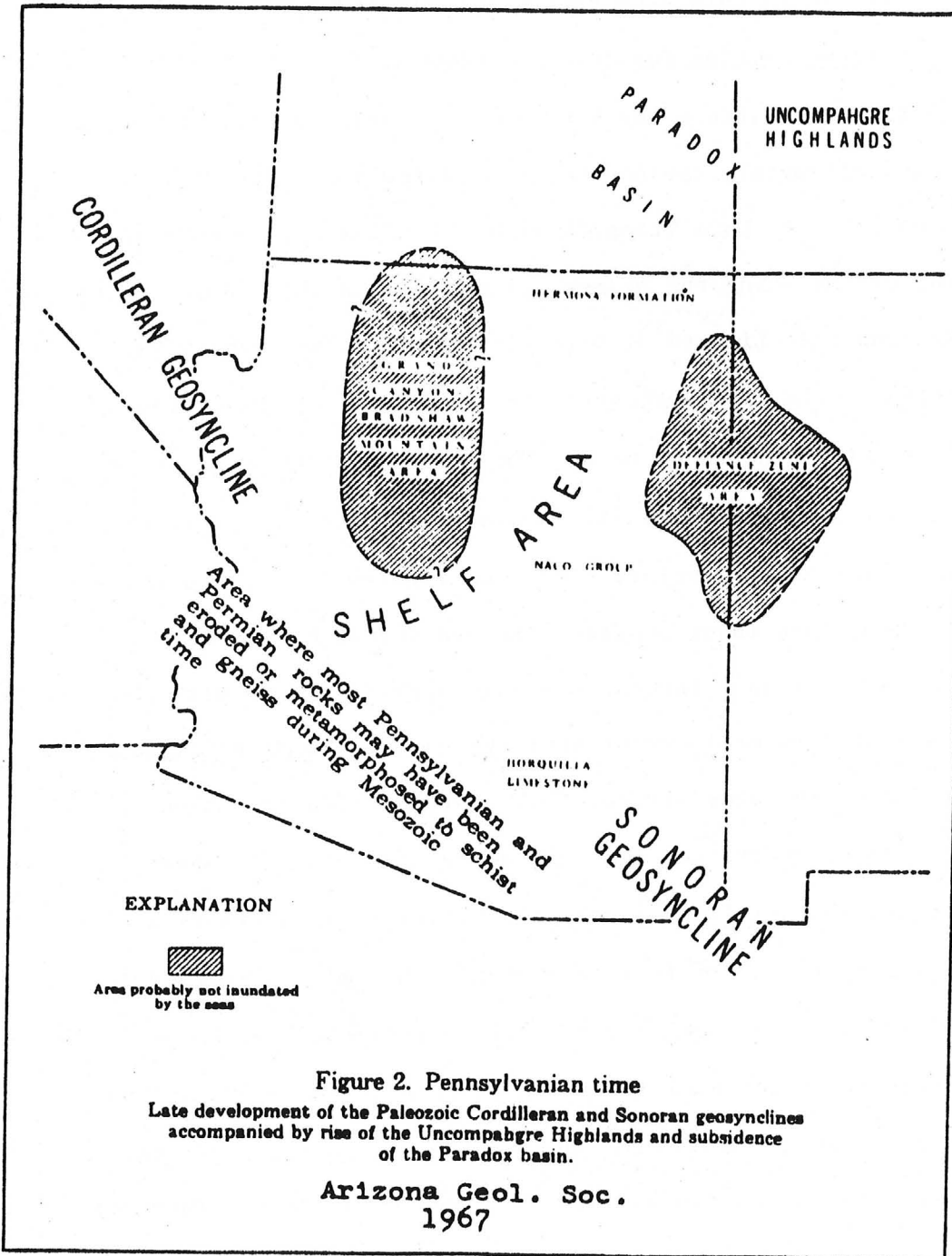
aceous to arenaceous, often siliceous with angular to subangular pebbles and cobbles to 6 inches. Some pebbly conglomeratic seams are noted in the more arenaceous members (sandstones). The beds are highly altered, fractured and faulted with calcareous seams throughout. The rock is so changed in many places that much of its original structure is lost. The angular to subangular inclusions are suggestive of a breccia. However, the beds are often wide and regular so that brecciation cannot be confirmed.

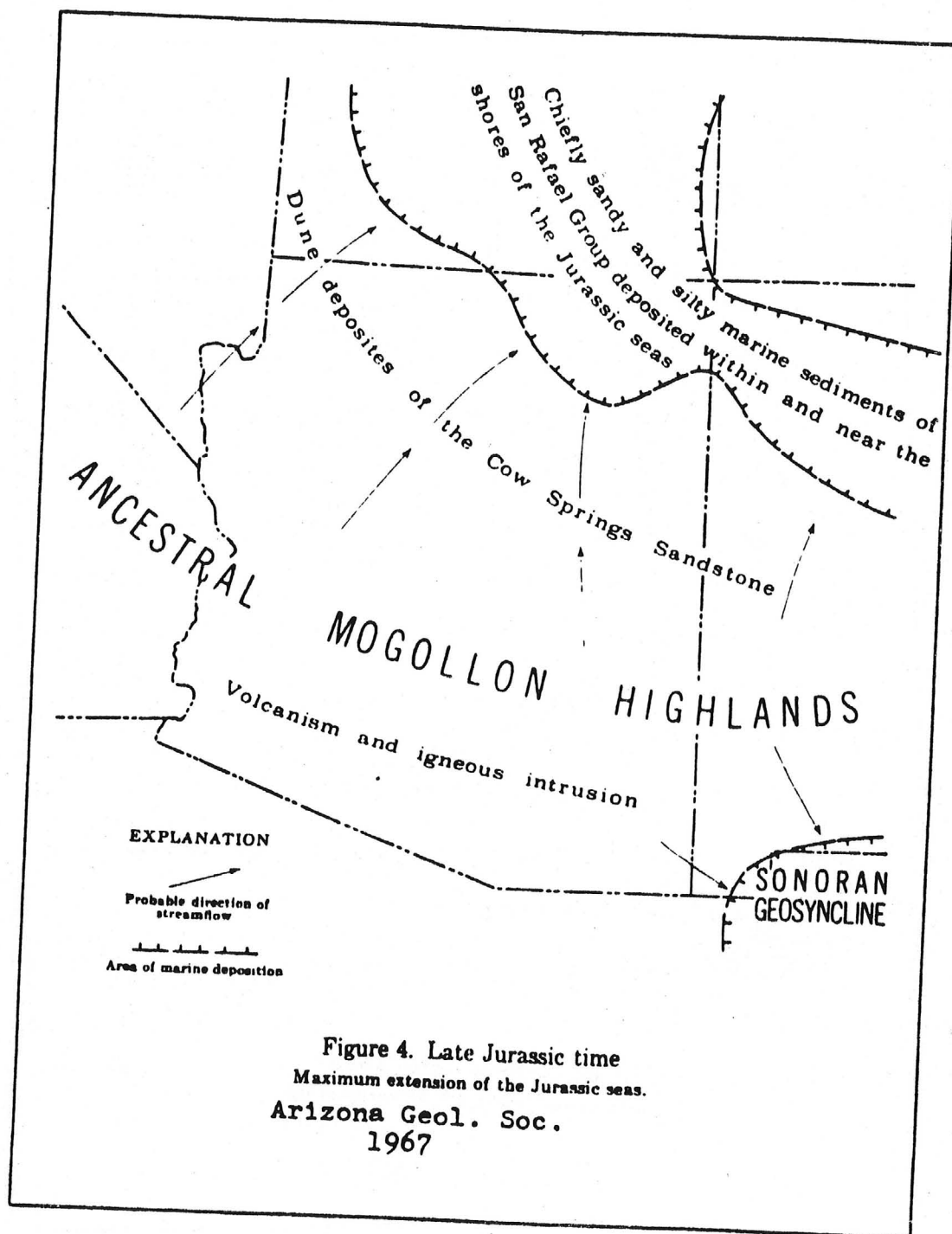
C. Structure and Stratigraphy

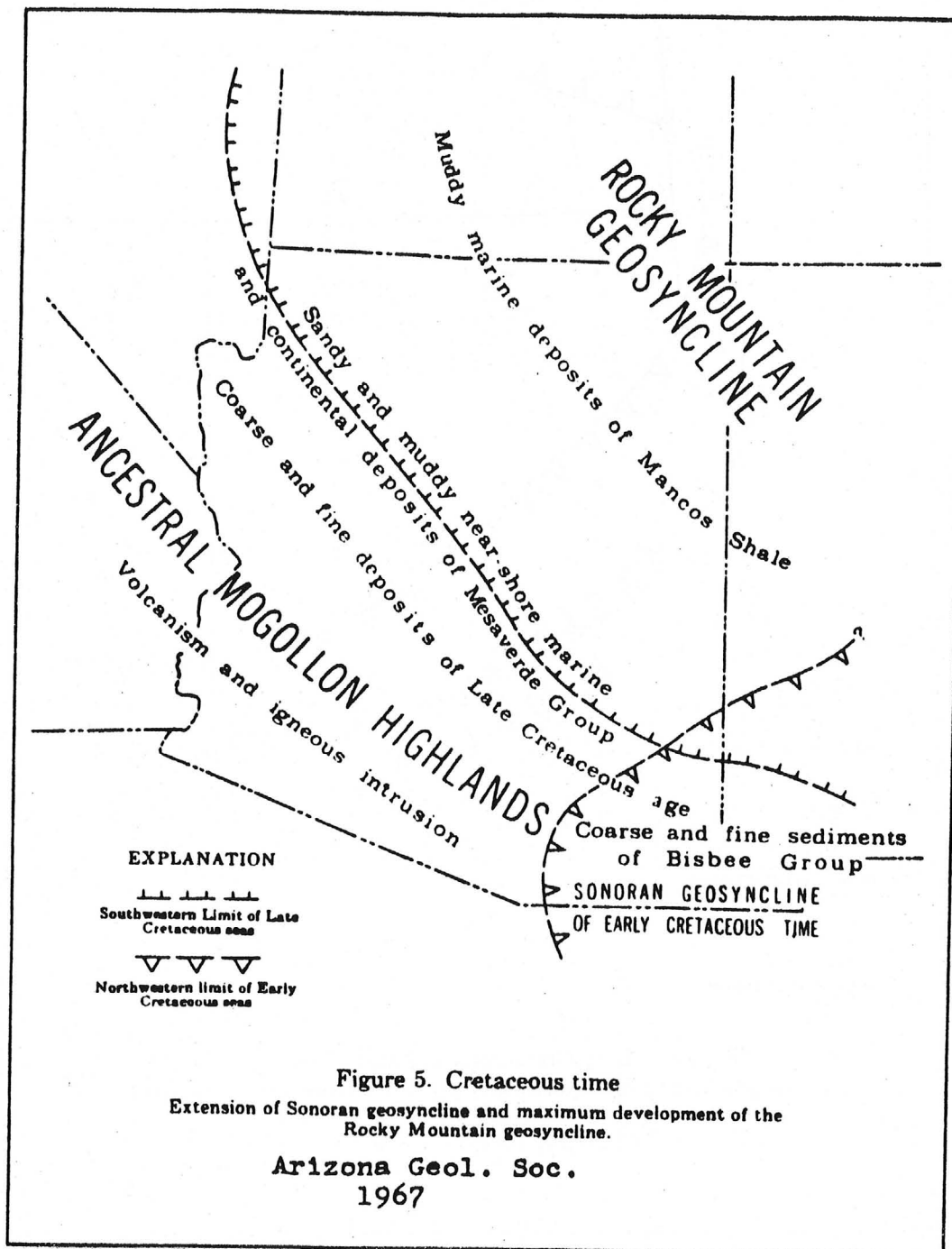
During the Paleozoic a very shallow basin of deposition existed in the Bullard Peak area. Sedimentation was intermittent and beds were probably deposited upon truncated Pre-Cambrian metamorphic strata which is common in adjacent areas and those of southwest and central Arizona. Sedimentation was interrupted from time to time in this shallow basin causing disconformities at several horizons. This phenomenon has not been investigated in the course of preparation of this report.

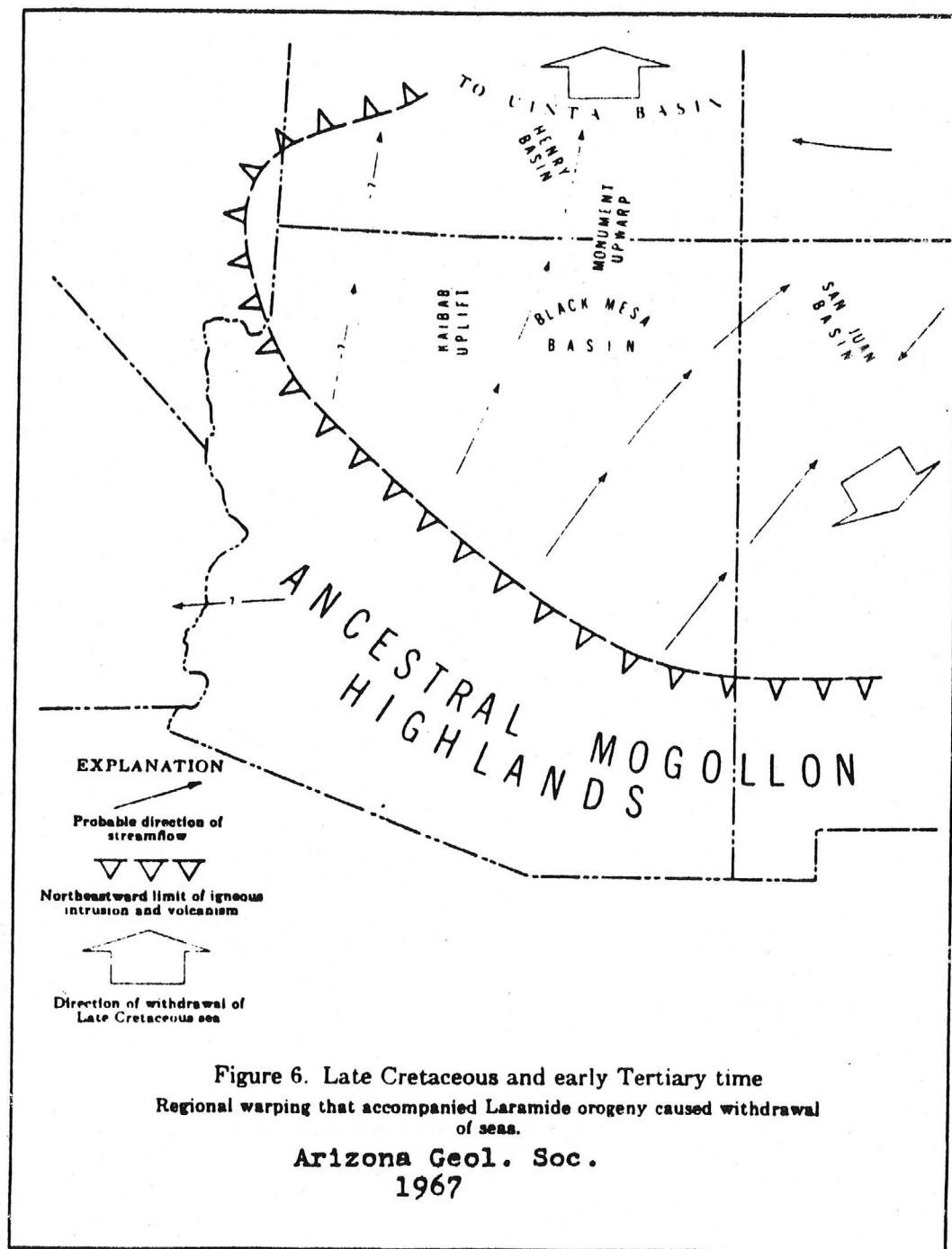
During Cambrian to Pennsylvanian time to the northwest of the State of Arizona, northward from southern Nevada, there existed the southeastern limits of the Cordilleran Geosyncline and in southeastern Arizona and southwestern New Mexico we note the northwestern limits of the Sonoran Geosyncline. The area between these two basins of deposition is referred to as Mazatzal Land which was a shelf inundated periodically by marine waters from Cambrian to Mississippian time (see figures 1, 2).











is suspected that it is within this environment that deposition of hypogene copper, gold, silver sulphides and other mineral species and compounds occurred. The lowering of temperature and pressure in such an environment could have triggered the deposition and mineralization of such zones.

As the Laramide orogeny developed, the Bullard Peak Paleozoic strata, solidified diabase sills and mineralized zones and veins began their listric rotation to vertical from relatively low-dipping attitudes (see figure 6).

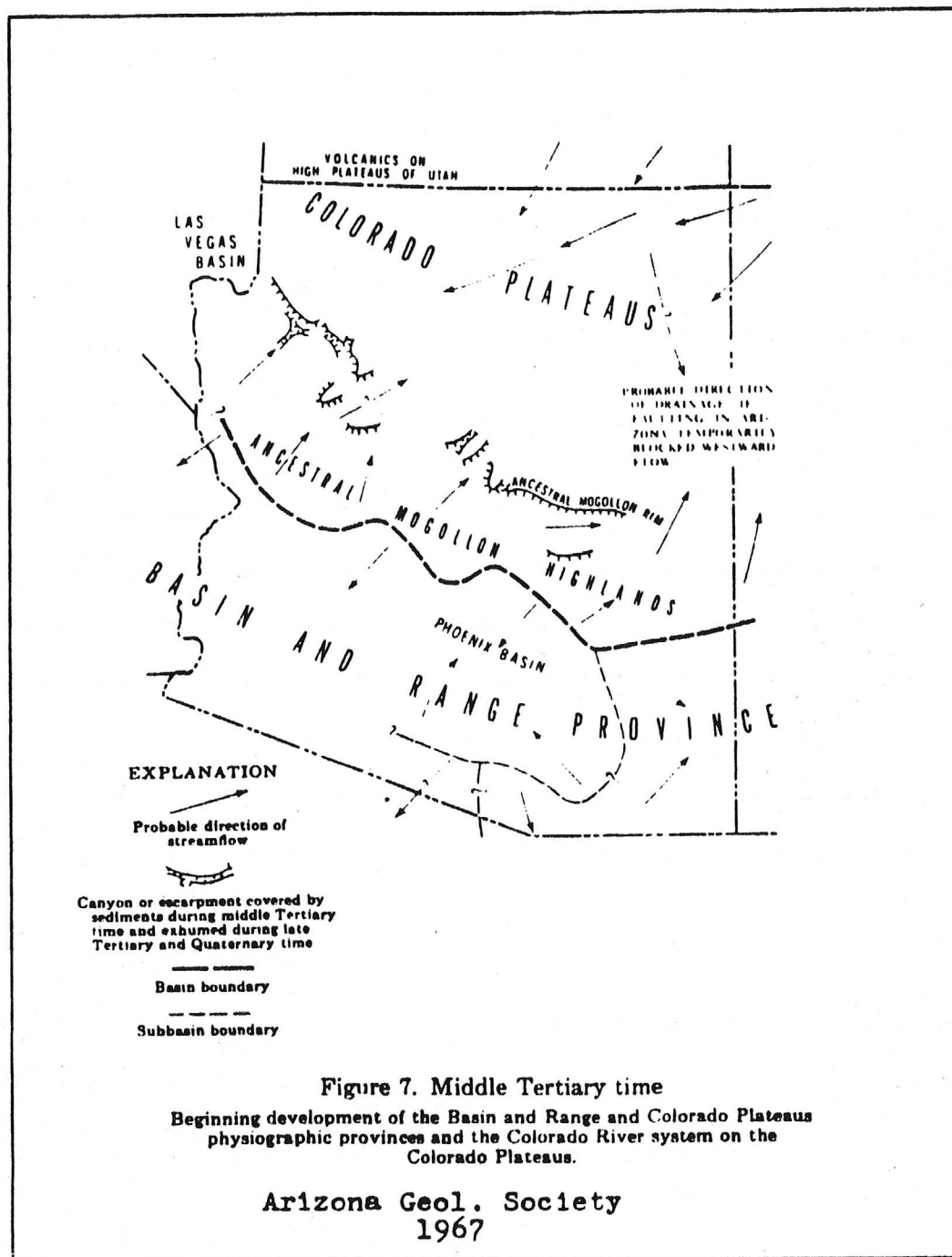
Volcanism and igneous intrusions continued throughout the Late Cretaceous and Early Tertiary but by middle Tertiary time the major uplift had already been completed and formation of the Basin and Range province had begun. (see figures 7, 8).

Tertiary faulting then further dissected the steeply dipping sedimentary series with its contained diabase sills. Major offsets of mineralized fissure zones also occurred during the Tertiary. However, primary mineralization is neither found along nor within these Tertiary structural features.

5. ECONOMIC GEOLOGY

A. The Mineralized Zones

Mineralization in the Bullard area is confined mainly to faults, fissures and shear zones. There appears to be no primary mineralization of any consequence in structural features younger than Late



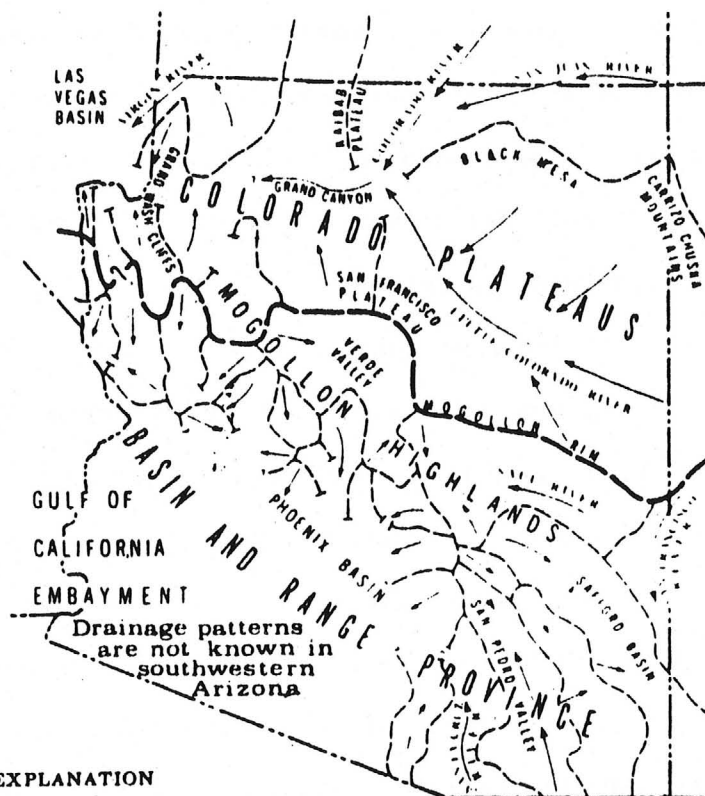


Figure 8. Late Tertiary time
Cutting of Grand Canyon by the Colorado River and maximum development
of internally drained basins in Basin and Range province.

Arizona Geol. Society

1967

Cretaceous or Early Tertiary. Later Tertiary faulting has been observed to have cut off mineral veins in several places. However, there may be secondary deposits or supergene enrichment as yet not located.

The mineralized zones are mainly silicates, carbonates, oxides and phosphates of copper with some sulphides and other metals. Small amounts of gold and silver are associated with the copper. Gold and silver are, in some samples, bonded as electrum or near electrum. Some free gold and silver are no doubt contained within these mineralized veins as well.

Chrysocolla, a silicate of copper, $\text{CuSiO}_2 \cdot 2\text{H}_2\text{O}$, is the predominant copper ore mineral with malachite, a carbonate of copper, $\text{Cu}_2(\text{OH})_2\text{CO}_3$, and cuprite, an oxide of copper, Cu_2O , as secondary minerals. Also associated in gangue is crystalline and amorphous quartz (silica comprising about 73% of the ore), euhedral calcite, diopside (H_2CuSiO_4), and hydrated copper sulphate. The zones of mineralization are also the locus of secondary oxidation minerals such as limonite, jarosite, possibly alunite, magnetite, siderite and barite.

Sulphides are present but not obvious in hand specimens and except for the surficial occurrence of the metallic oxide psilomelane (MnO), no other sulphides were noted. Petrographic examination of samples is continuing. A comprehensive paragenetic study of the Bullard area mineralization has not yet been completed,

so many petrographic and mineralogic questions will be answered as work continues.

B. Assays and Values

A detailed sample map was made by ASARCO, presumably in 1950. This map covered the main Bullard vein and indicated the location of 43 samples. The computed average of these samples was given as 0.25 oz/ton Au, 0.50 oz/ton Ag and 2.67% copper. This relates to an estimated value for this ore body to be around \$150.00 per ton using values of \$450.00 per oz. for gold, \$10.00 per oz. for silver, and \$.70 oz. per pound for copper. This metalliferous zone has been mined at a profit in years past and recently by Contract Mining Corporation.

Five samples were analyzed from a mineralized vein workings west of Bullard Peak. This area is off the Bullard claims and thought to be stratigraphically lower in the section. Subsequently, these samples are important as they indicate that lower in the section higher average values may exist. These five samples assayed at; 0.56 oz/ton Au, 0.40 oz/ton Ag and 3.83% Cu.

International Claim: A mineralized zone occurs within the International Claim which assayed at 0.02 oz/ton Au, 0.10 oz/ton Ag and 2.58% Cu. This vein appears to have good potential because the mineralized area lies within a large shear zone. There is a deep shaft at this point but little is known at the present time as to its depth or the minerals removed from it. Some super-



ficial shallow percussion drilling has been done on the International Claim but little else is known about it.

Last Bean and Democrat Claims: Just west of the stone cabin, five samples were taken from the prospect holes, mineralized zones and tops of the incline shafts. The results of these assays were: 0.11 oz/ton Au, 0.33 oz/ton Ag and 1.74% Cu.

Sulla Claim: A very substantial vein of mineralization exists on the Sulla claim in the northeast area of the map (see plate 2). Sampling there indicated an average of; 0.15 oz/ton Au, 0.10 oz/ton Ag and 1.59% Cu. It should be noted here that of the three samples taken from this vein, two of them gave an average of; 0.36 oz/ton Au, 0.25 oz/ton Ag and 2.0% Cu for an estimated \$192.00 per ton value. This zone appears to be stratigraphically lower in the section than the Bullard vein. This further indicates that values may be higher at points lower in the section.

The average computed values of all samples in the Bullard area taken in the course of mapping was as follows: 0.22 oz/ton Au, 0.23 oz/ton Ag and 2.3% Cu for a gross value per ton of around \$133.00.

C. Potential and Observed Ore Areas

There are five potentially favorable areas for investigation and possible production. These are both observed and inferred. One through four have been observed, while number five is inferred.

1. The Bullard Vein proper (homestake, Sweepstake, and Washington claims.

2. Area west of Stone Cabin (State, Last Bean, and Democrat claims.)
3. The fault areas of the Sulla claim.
4. The fault zones of International and Producer claims.
5. Bullard Extension (all areas south of Bullard Ridge).

This list, with the exception of number 5, contains only those reserves with production history, surface expression, and/or favorable sampling. Based on geologic interpretation and observation to date, it is certain that there are still to be located other favorable zones in the subsurface.

6. DEFINITION OF MINERALIZED RESERVES

The U. S. Bureau of Land Management and the U. S. Geological Survey in a recent estimate of mineral reserves have agreed upon and defined the following terms to signify relative dependability of information.

A. Measured Mineralized Reserves

Measured reserve tonnage is computed from dimensions revealed in outcrop trenches, workings and drill holes for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling and measurement are so closely spaced and the geologic character is so well defined that the size, shape and mineral content are well established.

The computed tonnage and grade are judged to be accurate within limits which are stated and no such limits are judged to differ

from the computed tonnage or grade by more than 20%.

B. Indicated Mineralized Reserves

These are reserves for which the tonnage and grade are computed from projections for a reasonable distance on geologic evidence. The sites available for inspection, measurement and sampling are too widely or otherwise inappropriately spaced to outline the mineralized zone completely or establish its grade throughout.

C. Inferred Mineralized Reserves

Inferred reserves are quantitative estimates which are based largely on broad knowledge of the geologic character of the deposits and for which there are few if any samples or measurements. The estimates are based on an assured continuity or repetition for which there is geologic evidence. The evidence may include comparison with deposits of similar types. Bodies that are completely concealed may be included if there is specific geologic evidence of their presence. Estimates of inferred reserves should include a statement of the special limits within which the inferred reserves may lie.

7. RESERVES

A. The Bullard Vein (Measured 40,000 tons)

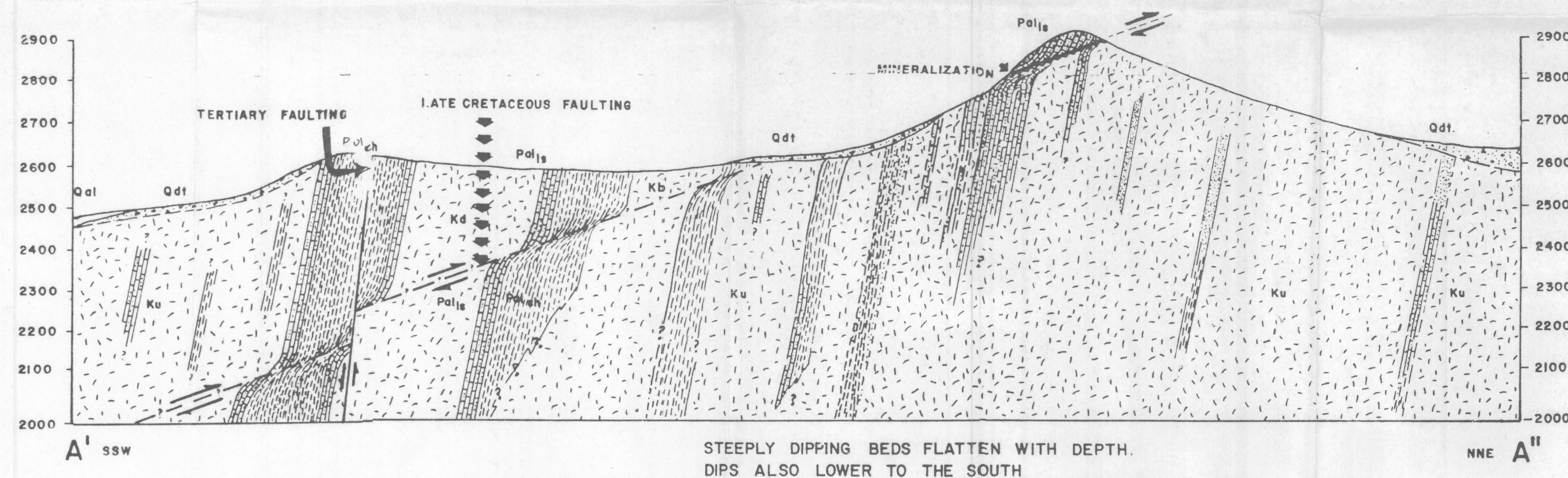
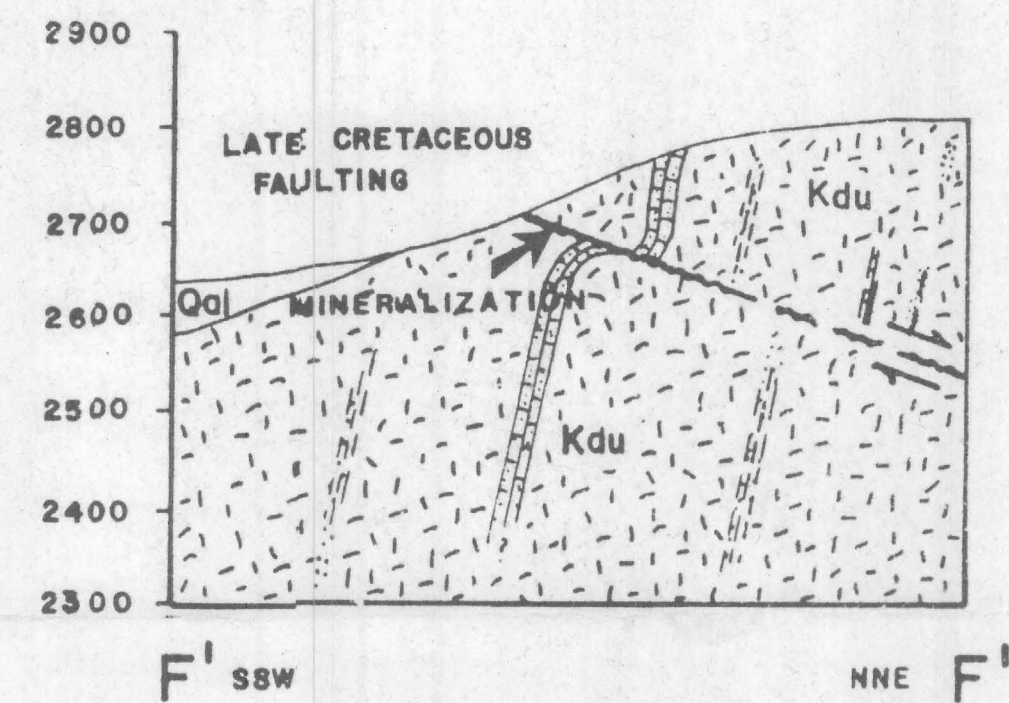
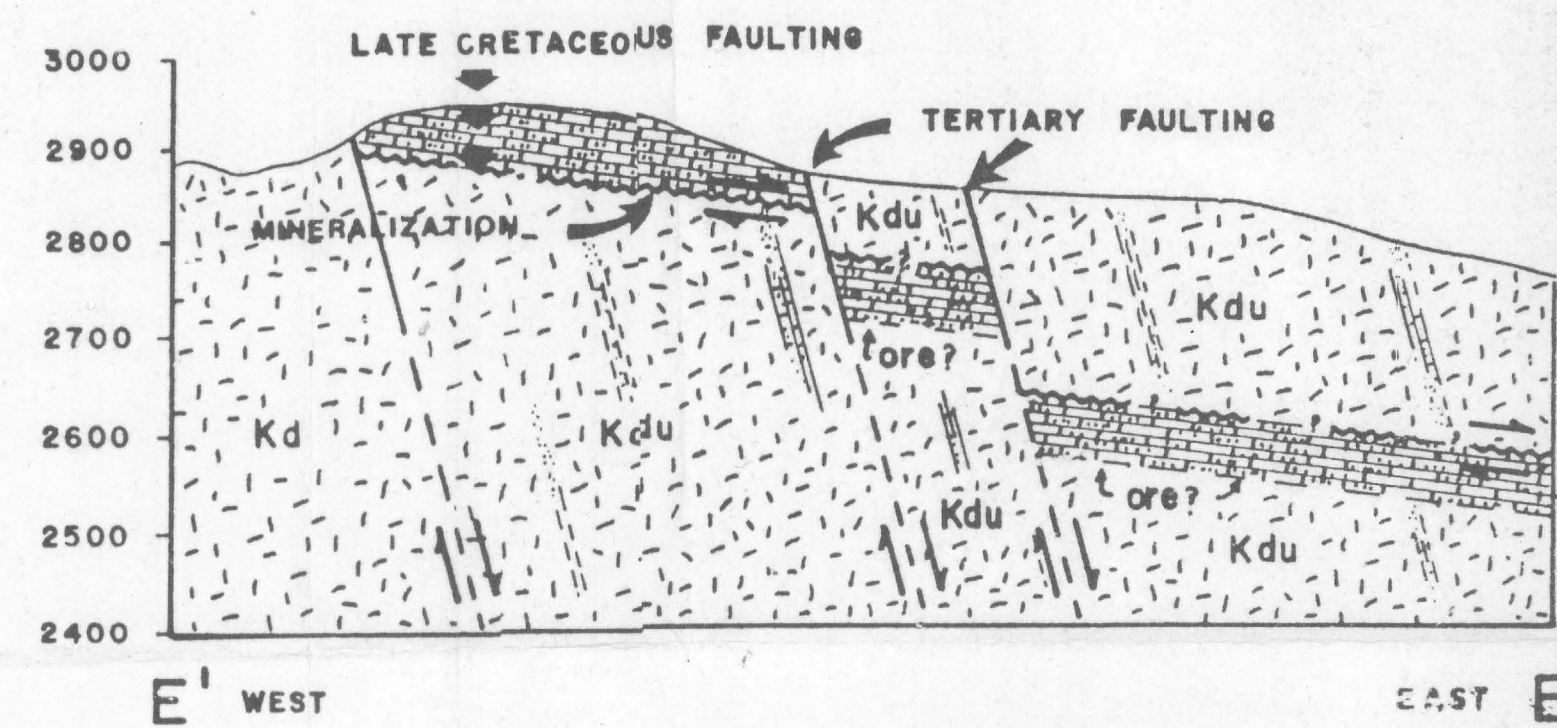
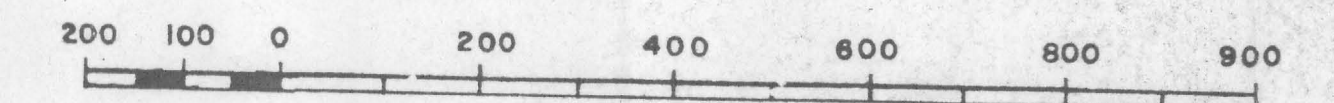
The Bullard vein covers an area of approximately 271,000 square feet. The vein averages 2.5 feet in thickness and is in a

PLATE THREE NRG RESOURCES LTD.

BULLARD MINE

AGUILA, ARIZONA

SCALE 1" = 200 ft.
(HORIZ. & VERTICAL)

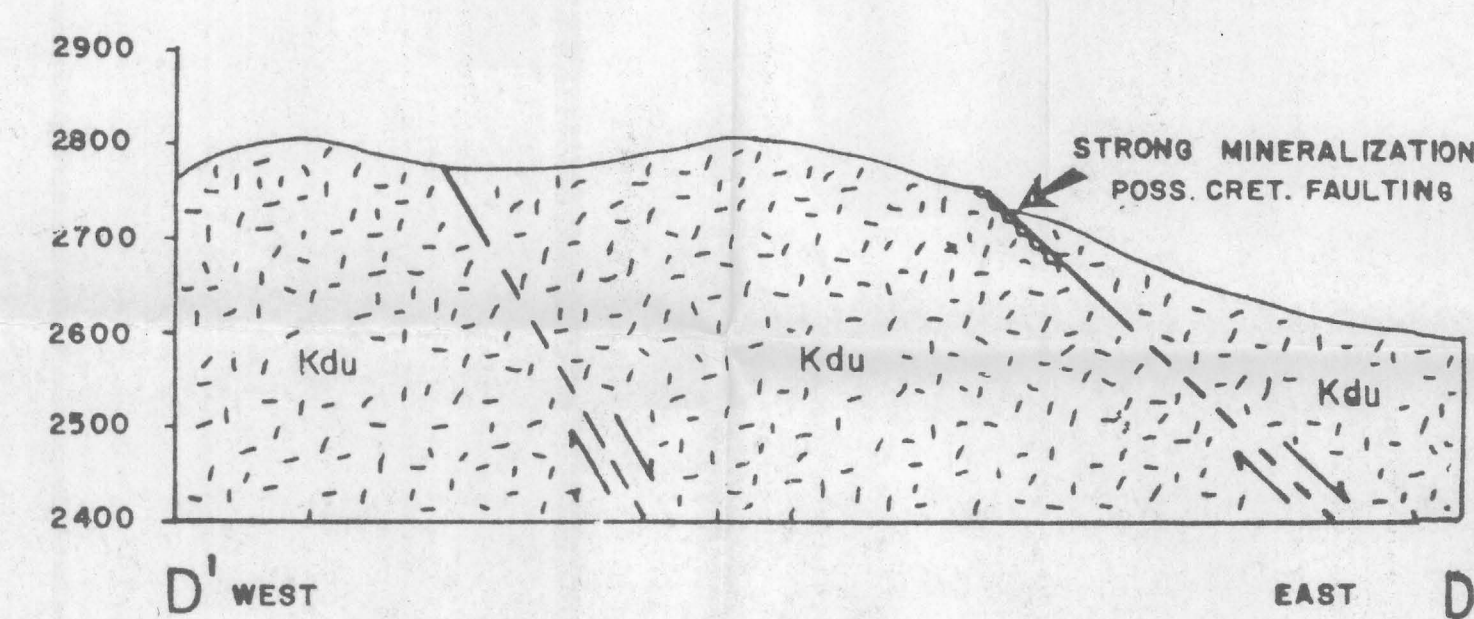
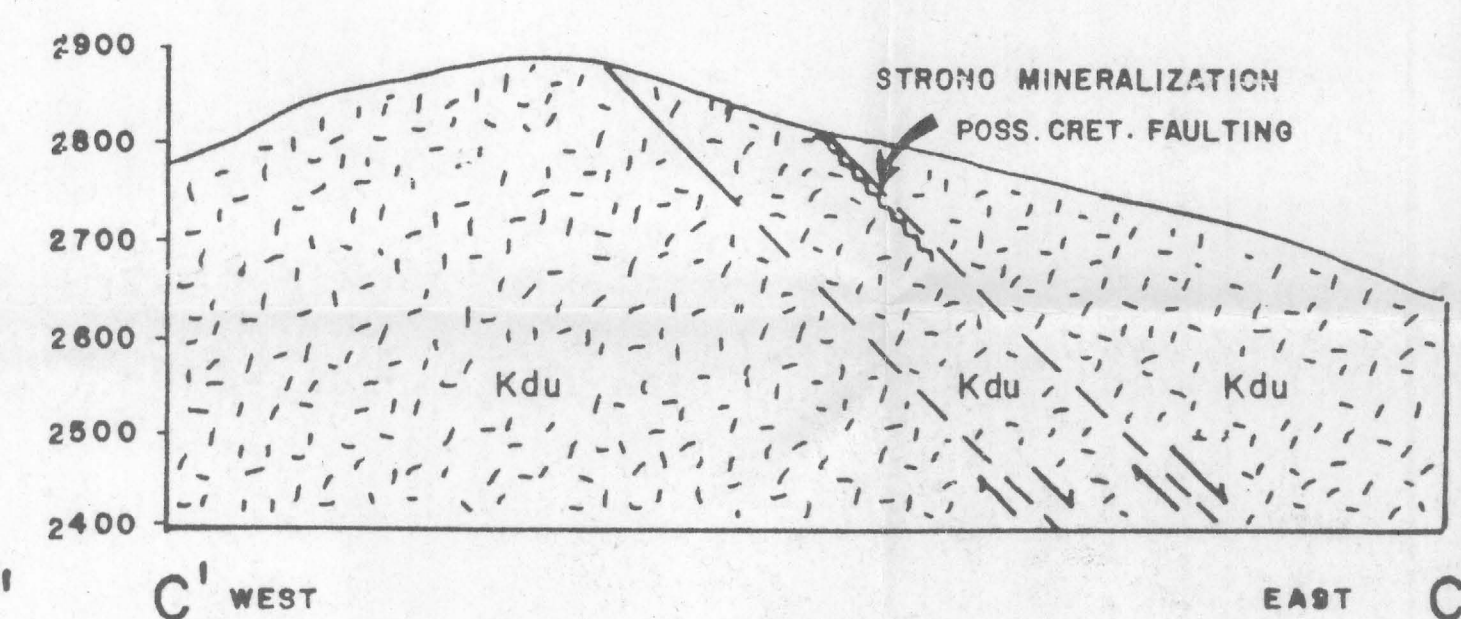
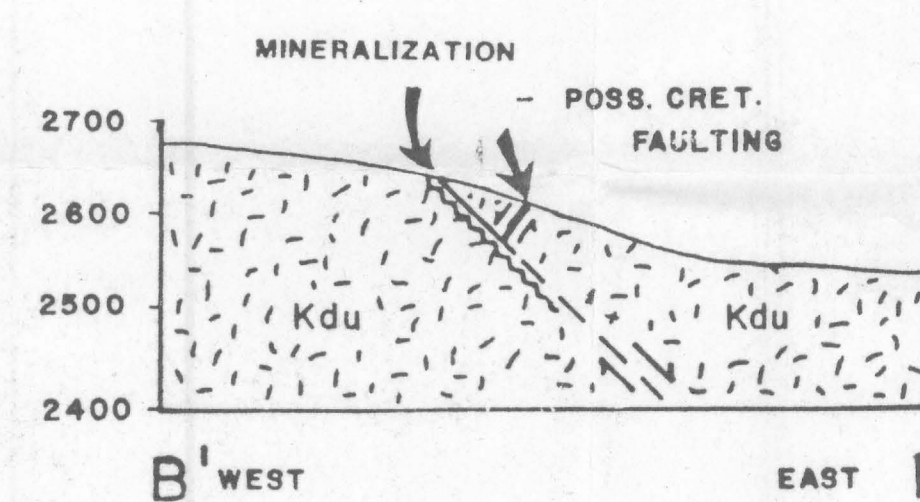


QUATERNARY	Qal	alluvium
	Qdt	detritus
CRETACEOUS	Kd	diabase
	Ku	diabase with ss, sh and ls
PALEOZOIC	Pal ss	sandstone
	Pal sh	shale
	Pal ls	limestone

B'-----B'' VERTICAL SECTION

----- FAULT

~~~~~ MINERALIZED ZONE OR  
MINERALIZED SHEAR ZONE



## GEOLOGIC VERTICAL SECTIONS

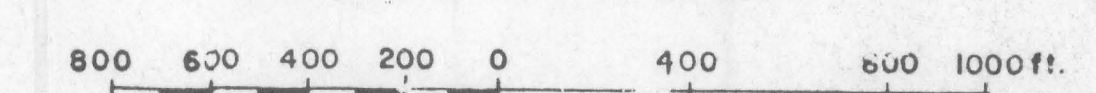


# NRG RESOURCES LIMITED

## BULLARD MINE

AGUILA, ARIZONA

scale 1" = 400 FT.



### LEGEND

- Shaft or prospect
- Sample (lith) = Mineralized Zone
- DDH-2 • Diamond drill hole (proposed)
- Claim Boundaries

### Assays

|         | Au   | Ag   | Cu   |
|---------|------|------|------|
| Nº 111  | 0.21 | 0.60 | 2.50 |
| Nº 112  | 0.26 | 0.60 | 5.50 |
| Nº 113  | 0.03 | 0.15 | 0.24 |
| Nº 114  | Tr   | 0.10 | 1.60 |
| Nº 116  | 0.06 | 0.20 | 2.80 |
| Nº 123  | Tr   | 0.05 | 1.30 |
| Nº 123A | Tr   | 0.05 | 1.30 |
| Nº 123B | 0.01 | 0.40 | 0.87 |
| Nº 123C | 0.01 | 0.05 | 1.67 |
| Nº 125  | Tr   | Tr   | 1.40 |
| Nº 126  | 0.02 | 0.05 | 7.90 |
| Nº 128  | 0.09 | 0.10 | 6.40 |
| Nº 135  | 0.83 | 0.70 | 7.80 |
| Nº 136  | 0.78 | 0.25 | 2.40 |
| Nº 137  | 0.06 | 0.25 | 1.30 |
| Nº 140  | 0.01 | 0.20 | 1.50 |
| Nº 141  | 0.03 | 0.25 | 1.30 |
| Nº 142  | 0.05 | 0.15 | 1.60 |
| Nº 143  | 0.57 | 0.15 | 2.10 |
| Nº 143A | 0.16 | 0.10 | 0.16 |
| Nº 144  | 0.12 | 0.10 | 4.10 |
| Nº 145  | 0.08 | 0.10 | 1.20 |
| Nº 146  | 0.04 | 0.10 | 0.88 |
| Nº 146A | 0.02 | 0.05 | 1.10 |
| Nº 152  | 0.08 | Tr   | 1.00 |
| Nº 153  | 0.29 | 0.25 | 2.70 |
| Nº 154  | 0.42 | 0.25 | 1.40 |
| Nº 154A | 0.05 | 0.10 | 1.30 |

## SAMPLE & CLAIM MAP



K. C. DELISE  
9043 Harmony Grove Rd.  
ESCONDIDO, CA 92025  
(714) 743-8921 CA Lic. No. 2118 & 234335

ORIGINAL: DECEMBER, 1980  
REVISIONS: June 2, 81 Add State, Last Beam, Democrat, Arizona Claims, etc.

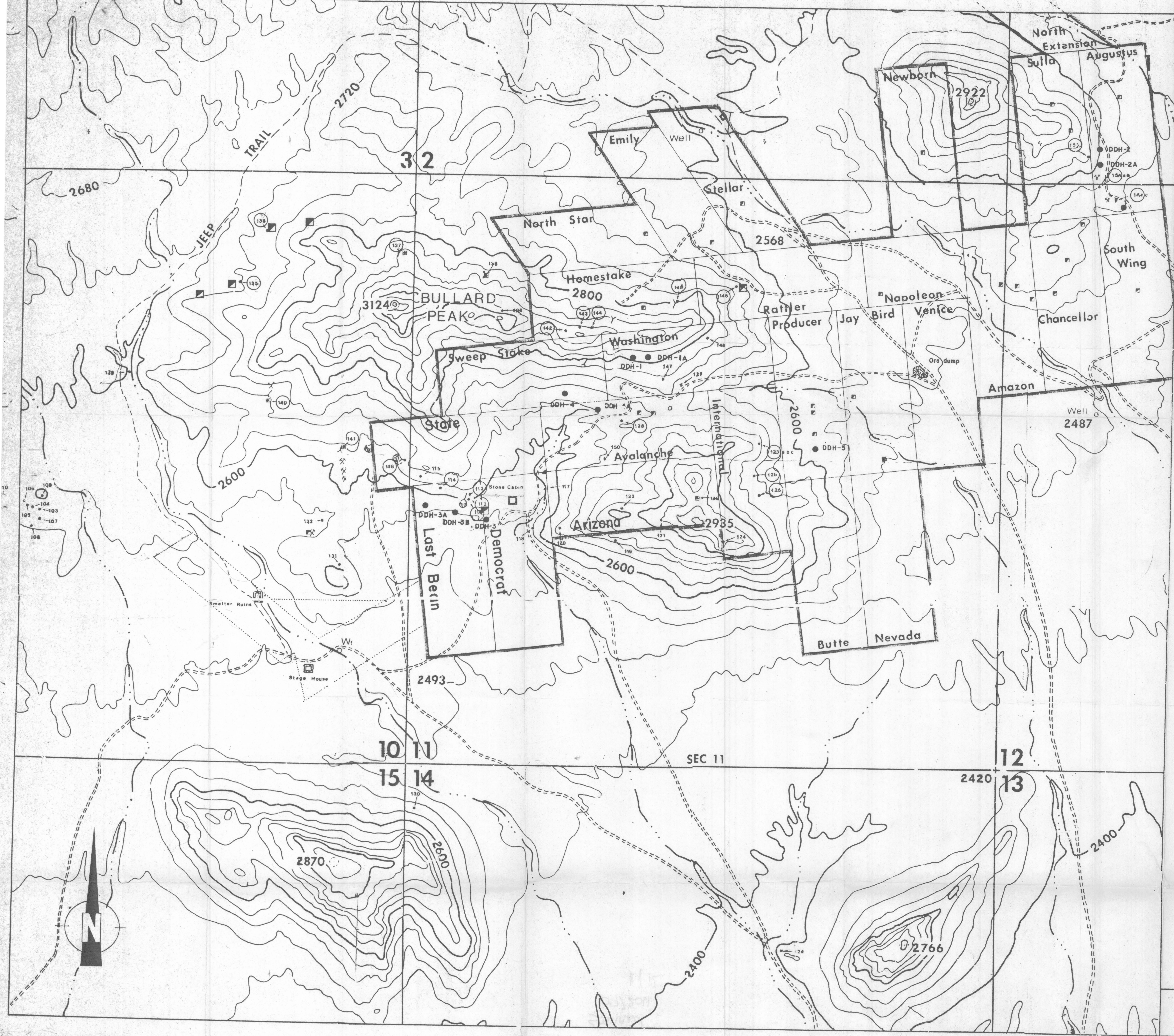


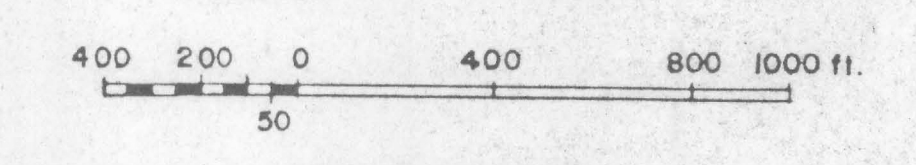


PLATE TWO  
NRG RESOURCES LTD.

BULLARD MINE

AGUILA, ARIZONA

SCALE 1" = 400 ft.



LEGEND

- |            |       |                                                                                                     |
|------------|-------|-----------------------------------------------------------------------------------------------------|
| QUATERNARY | Qal   | alluvium                                                                                            |
|            | Qdt   | detritus; outcrop rubble; ss, sh and ls                                                             |
| CRETACEOUS | Kd    | diabase; gray to greenish, plagioclase laths 10mm                                                   |
|            | Ku    | diabase; undifferentiated with ss, sh and ls                                                        |
| PALEOZOIC  | Palss | sandstone; buff to reddish, altered meta-sediments<br>fine-med. gr., pebble cgl. locally            |
|            | Palsh | shale; well-indurated meta-sediments, argillaceous<br>silty, well-bedded locally                    |
|            | Palis | limestone; dark gray, hard, altered, siliceous, clastic<br>argil. aren., low-med. rank metamorphism |
|            |       |                                                                                                     |

- B' — B'' Vertical section
- Shaft
- ✕ Prospect or glory hole
- ⊕ Drill hole (old) ● DDH-2 PROPOSED
- Fault
- ~~~~ MINERALIZED ZONE OR MINERALIZED SHEAR ZONE

RECONNAISSANCE  
GEOLOGIC MAP

K. C. DELISE  
9043 Harmony Drive Rd  
ESCONDIDO, CA 92025  
(714) 743-8921 CA Lic No 2118 & 334335

|           |                                      |
|-----------|--------------------------------------|
| ORIGINAL  | DECEMBER, 1980                       |
| REVISIONS | Jan 1981 SDR, MCDONALD, ROSE, DE KEE |
|           |                                      |
|           |                                      |



## PIERCE MINING DISTRICT, YAVAPAI COUNTY, ARIZONA

PIERCE MINING DISTRICT, YAVAPAI COUNTY, ARIZONA

PIERCE MINING DISTRICT, YAVAPAI COUNTY, ARIZONA.  
PORTIONS OF SEC. 33 & 34 TOWNSHIP 9 NORTH - RANGE 9 WEST AND  
PORTIONS OF SEC. 2, 3, 4, 9, 10, & 11 TOWNSHIP 8 NORTH - RANGE 9 WEST  
C65886M

PIERCE MINING DISTRICT, YAVAPAI COUNTY, ARIZONA.  
PORTIONS OF SEC. 33 & 34 TOWNSHIP 9 NORTH - RANGE 9 WEST AND  
PORTIONS OF SEC. 2, 3, 4, 9, 10, & 11 TOWNSHIP 8 NORTH - RANGE 9 WEST  
C65886M

