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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: TIA JUANA

ALTERNATE NAMES:
SANTA MARIA
SANTA CRUZ

SANTA CRUZ COUNTY MILS NUMBER: 233

LOCATION: TOWNSHIP 20 S RANGE 14 E SECTION 26 QUARTER NE
LATITUDE: N 31DEG 40MIN 06SEC LONGITUDE: W 110DEG 52MIN 24SEC
TOPO MAP NAME: MOUNT WRIGHTSON - 15 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
SILVER
LEAD
ZINC
COPPER
GOLD

BIBLIOGRAPHY:

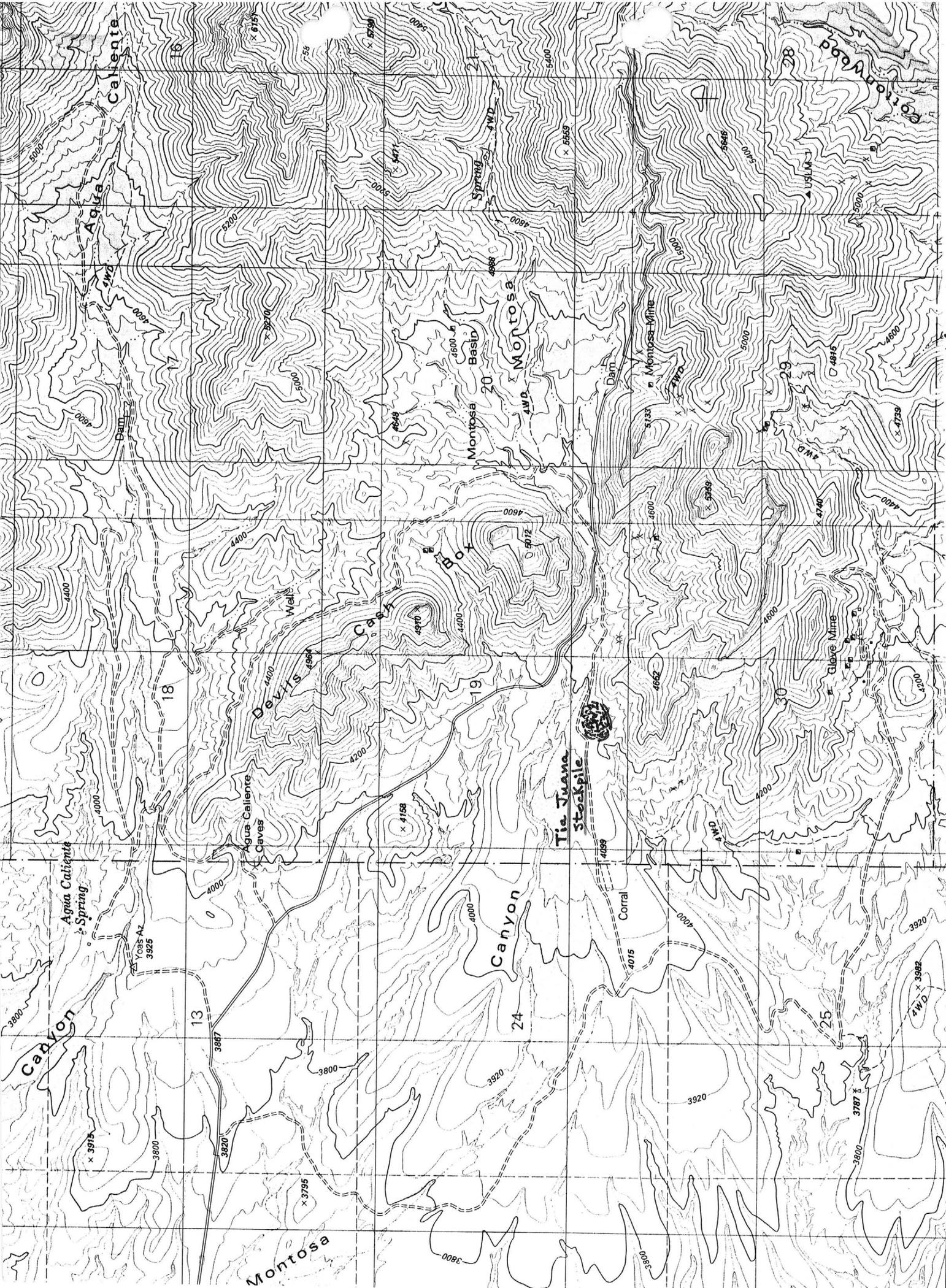
KEITH, S.B., 1975, INDEX OF MINING PROP. IN
SANTA CRUZ CO., AZBM
AZBM CARD FILE SANTA CRUZ CO.
USBM FIELD NOTES AG15
SCHRADER, F.C., 1915, USGS BULL., 582,
P. 191-193
ADMMR TIA JUANA FILE



Tia Juana Mine
T20S R4E Sec 26

Mt. Hopkins 7.5

T 20 S
T 21 S



Mt. Hopkins 7 1/2 Quad.

R13E R14E R15E



PERSON CHECKED

Refused

Addressee unknown.....

Insufficient Address.....

No such street.....number.....

No such office in state.....

Do not re-mail in this envelope

Mr. Herman D. Rhea, Pres.
General Development & Mining Co.
Box 667
Nogales, Arizona

- Moved, left no address
- No such number
- Moved, not forwardable
- Addressee unknown

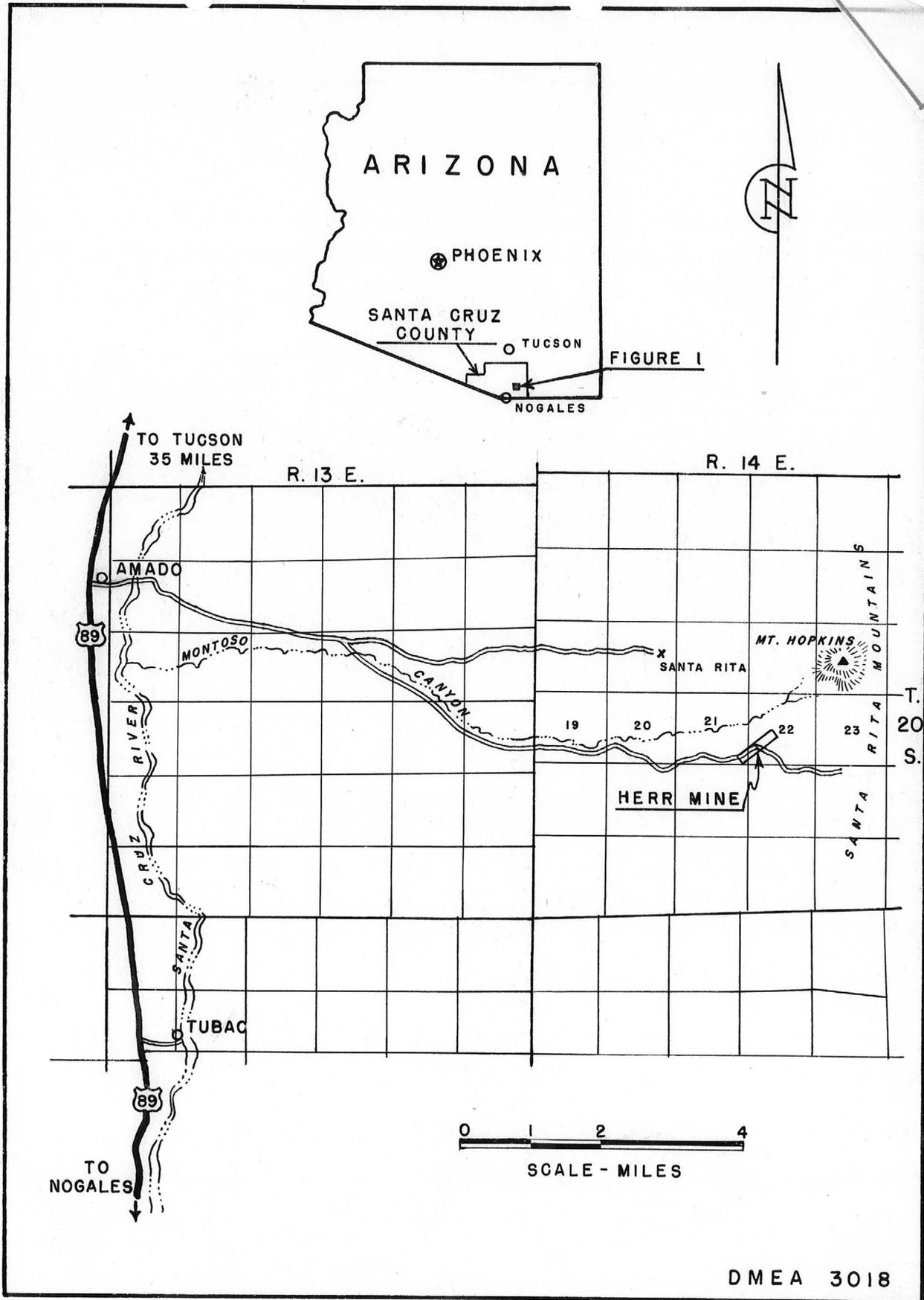


FIGURE I. - LOCATION MAP - TIJUANA MINES, INC.
 TYNDALL MINING DISTRICT - SANTA CRUZ COUNTY, ARIZONA

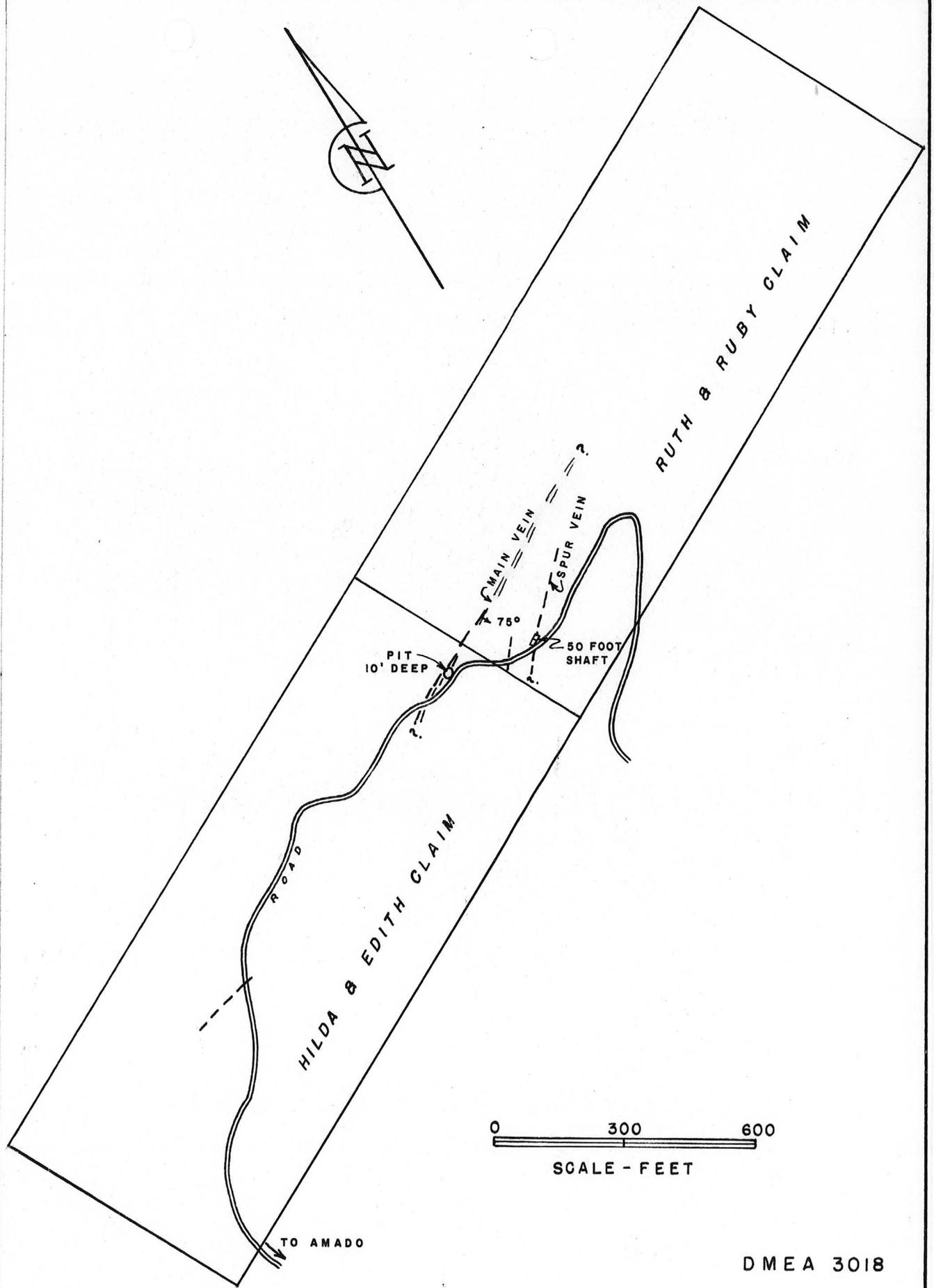


FIGURE 2.- CLAIM MAP - HERR MINE OF TIJUANA MINES, INC. SANTA CRUZ COUNTY, ARIZONA

DMEA 3018

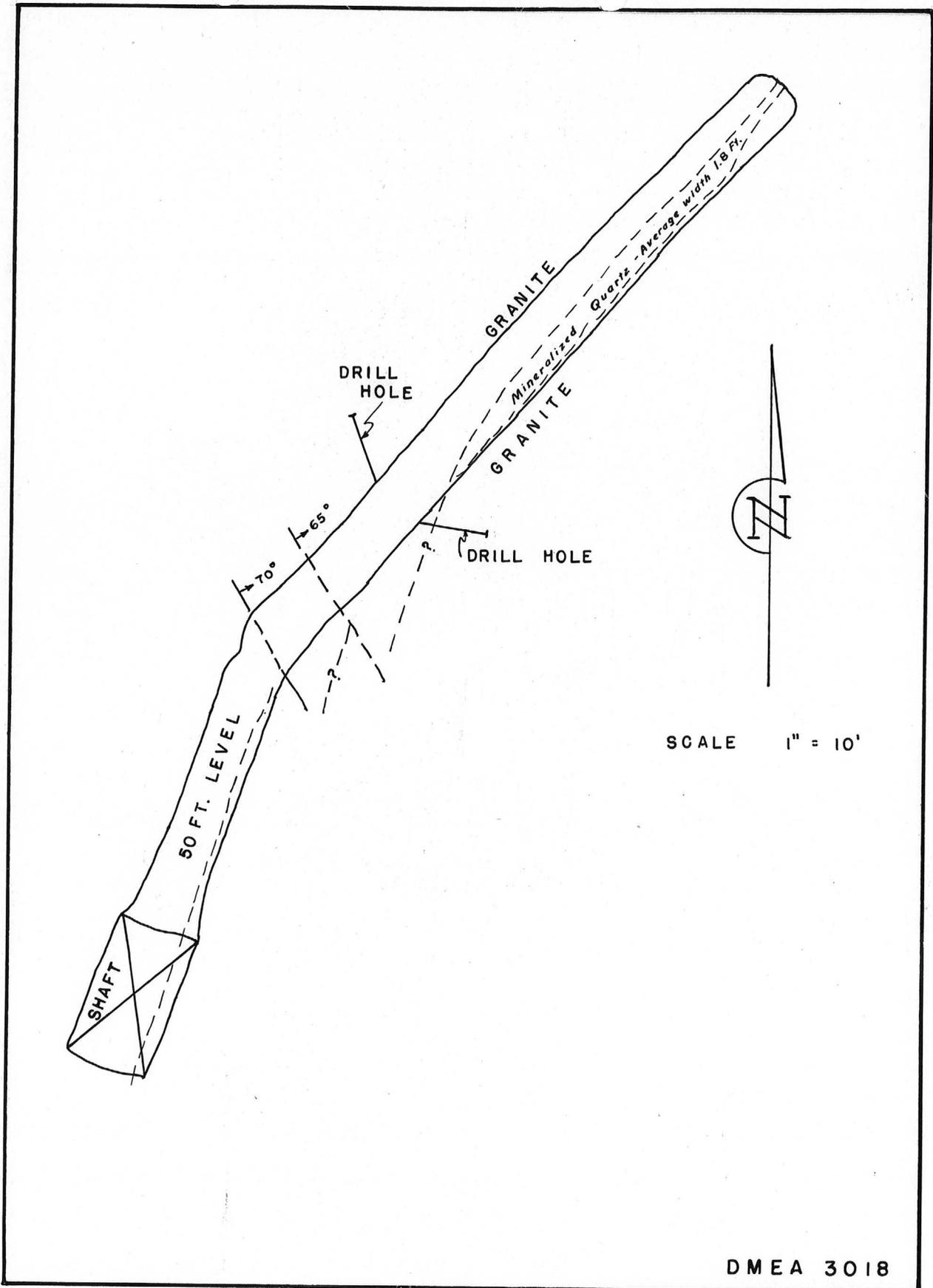
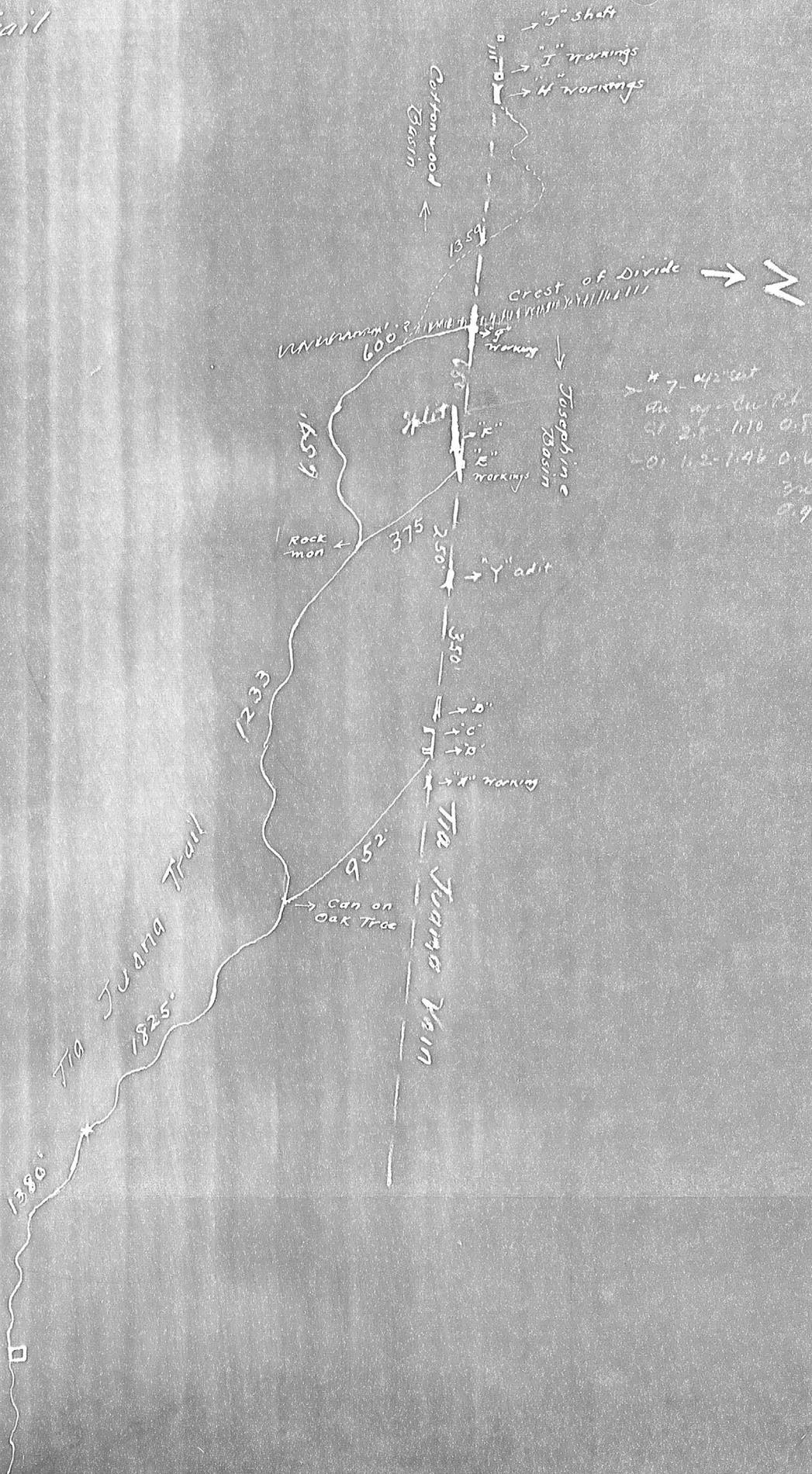


FIGURE 3. - PLAN OF 50-FT. LEVEL - HERR MINE
 TIJUANA MINES, INC. SANTA CRUZ COUNTY, ARIZONA

TIA JUANA Trail

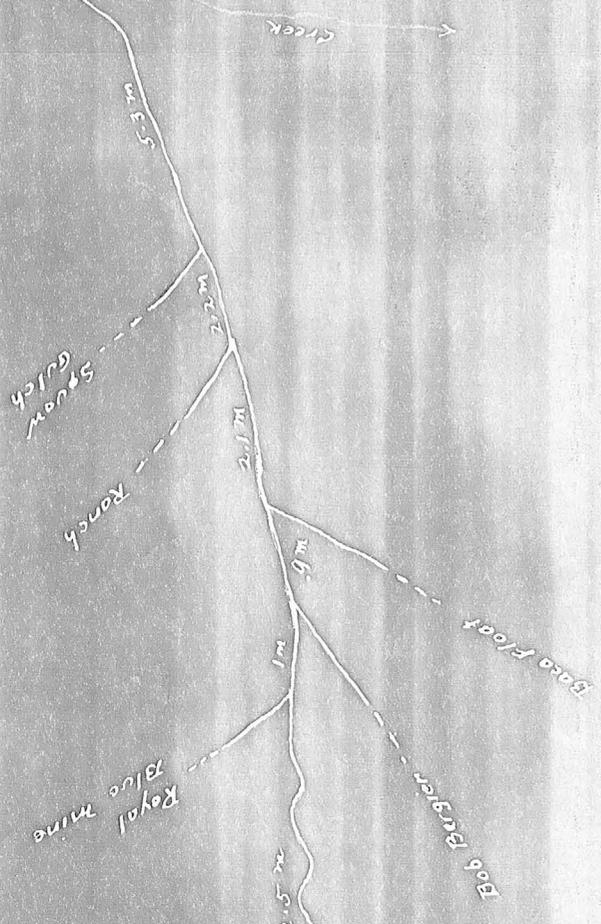
No Scale

Measurements Approximate



7 - up cut
 the up - cut Pt.
 at 2.8 - 1.10 0.8
 - 0.1 1.2 - 1.46 0.6
 3.2
 0.9

Mogoles ← 15 m F → Hurry → Potogonia ← 4 m F



Stream Bed Josephine Canyon

camp site

3900

710 cabin

Road Map -
 Patogonia to The Juana Cabin
 - No Scale -
 Auto speedometer measurements
 Patogonia Rd - The Juana Cabin
 14.6 miles -

Diagram No.

Longitudinal Section of the Tia Juana
at "Z" Working - 10-15' Shaft

Scale 1" = 50'

← East - West →

TIA JUANA

SANTA MARIA



Primary sulphides of 3' below surface vein widens from 2' at surface to nearly 10' at the bottom of shaft - Probable apex of a strong ore shoot

	Au	Ag	Pb	Cu	Zn
Sample #1 - .04	.38	.48	1.85	7.5	
Sample #2 - .04	.40	7.0	1.75	7.8	
Sample #3 - .03	.28	6.4	1.41	4.8	
Average	.035	3.5	1.7	1.69	4.7

Sampling Data

Sample #1 - West end of shaft - about 5' below collar - 95' cut across crudely banded Iron & Mn stained Quartz and altered wall rock carrying considerable galena-sphalerite - Chalcopyrite - pyrite and gold & silver - Essentially a primary ore with little secondary mineralization.

Sample #2 - West end of shaft - about 1' below SM1 - same length of cut and character of ore - Essentially a check on #1.

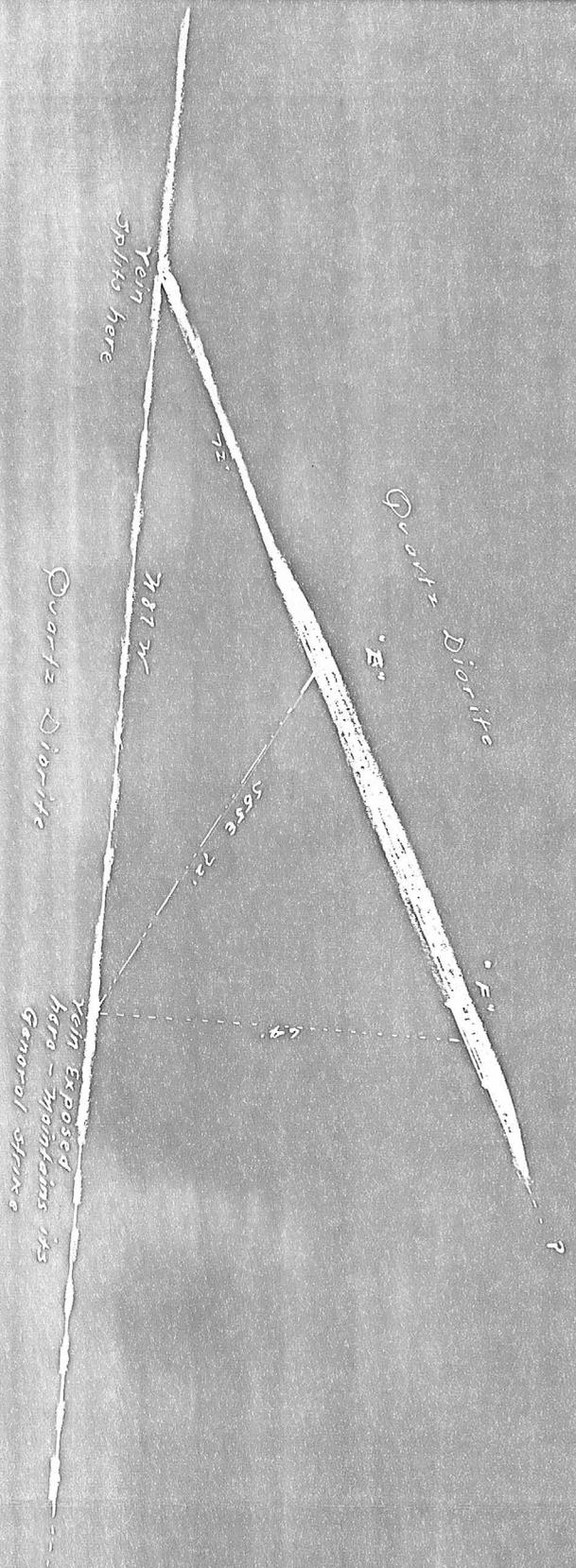
Sample #3 - A general Dump Sample.

Diagram No.

Showing split in the vein "E" marking approximately 72' East of E" marking.

← East - West →

Scale 1" = 25'



Vein split here

72'

702 W

Quartz Diorite

Quartz

Diorite

"E"

5656 E

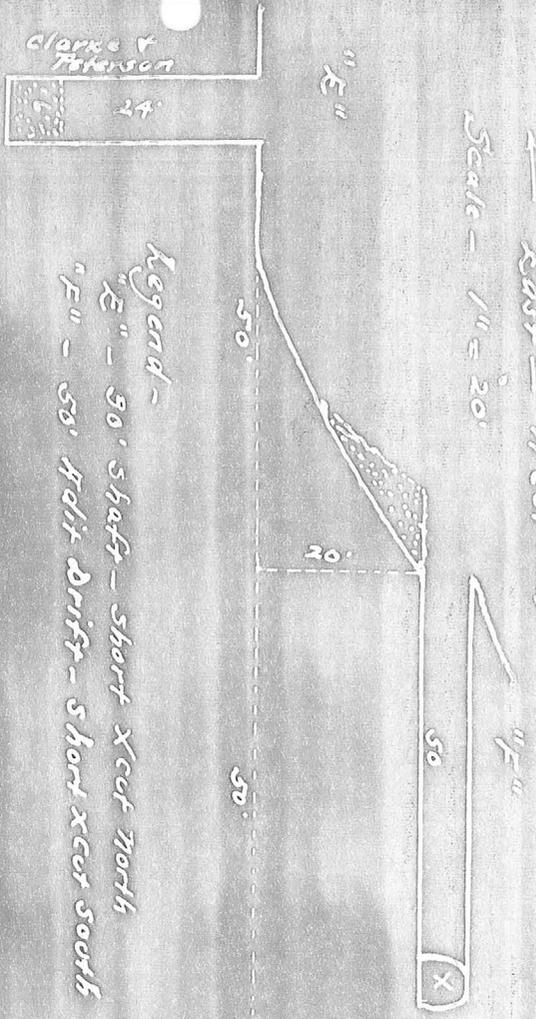
72'

64'

Vein Exposed here - Mountains is General strike

Showing longitudinal Section of the Vein containing "E" & "F" Markings

← East - West →
Scale - 1" = 20'



Legend -
"E" - 30' shaft - short x cut north
"F" - 58' fault drift - short x cut south

PLAN "E" Marking

← East - West →
Scale 1" = 10'

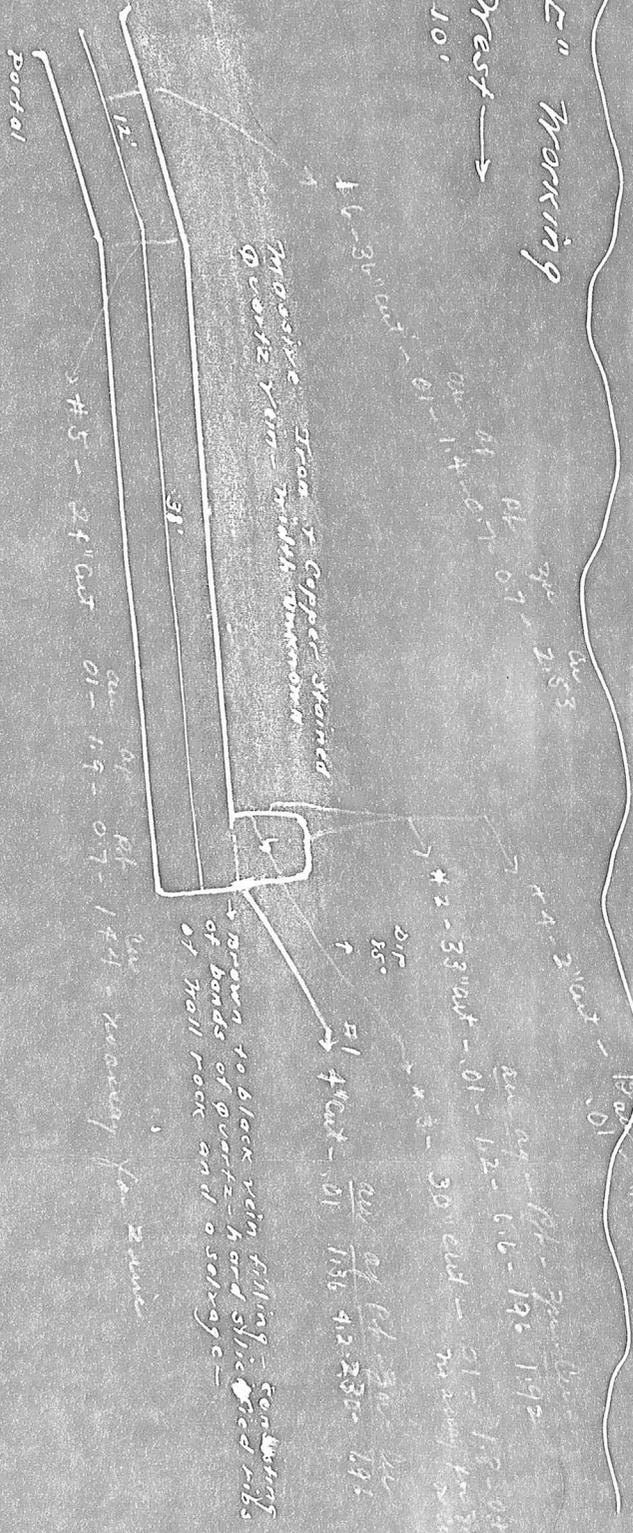
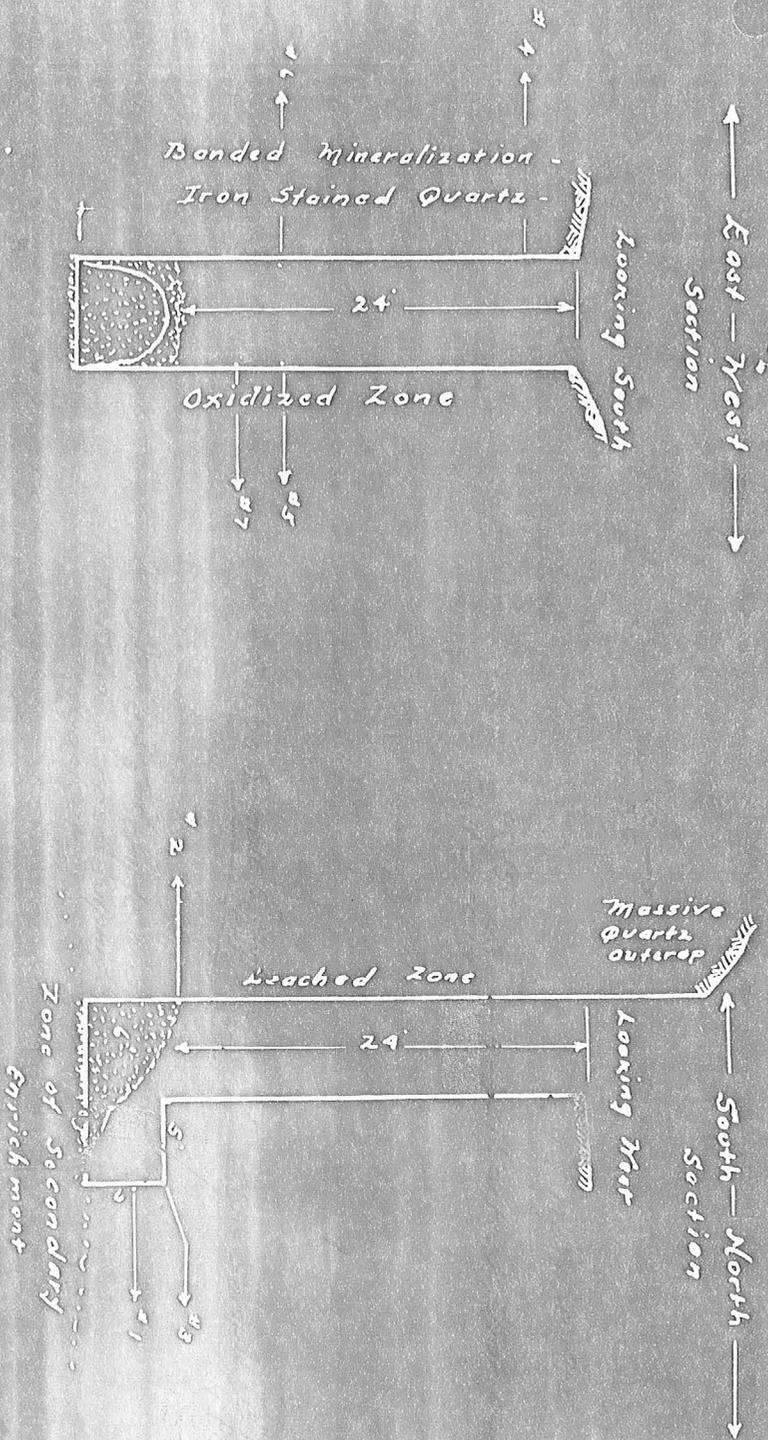


Diagram No. - and Sample Chart

TIA JUANA MINE - Santa Cruz Claim

"E"
 - of -
 - Clark & Peterson -
 Working 30' shaft

Scale 1" = 10'



SAMPLING DATA -

Sample No.	Cut in Tons	Fe Ozs	Ag Ozs	Pb %	Zn %	Cu %
1	24	.01	2.0	1.6	2.2	1.22
2	16	.01	6.8	5.5	5.2	1.10
3	16	.02	2.5	1.5	4.4	.85
4	90	.02	5.2	1.0	3.8	.50
5	36	.02	16.6	0.9	3.5	.50
6	46	.01	3.6	1.2	2.0	.60
7	36	.01	3.5	0.8	3.2	.70

Survey - mapping and
 sampling - 1945-1952 - for
 Tia Juana Mines, Inc. by JCS &
 O'Brien Enr.
 assays by Arizona Assay
 Office - Phoenix - Arizona

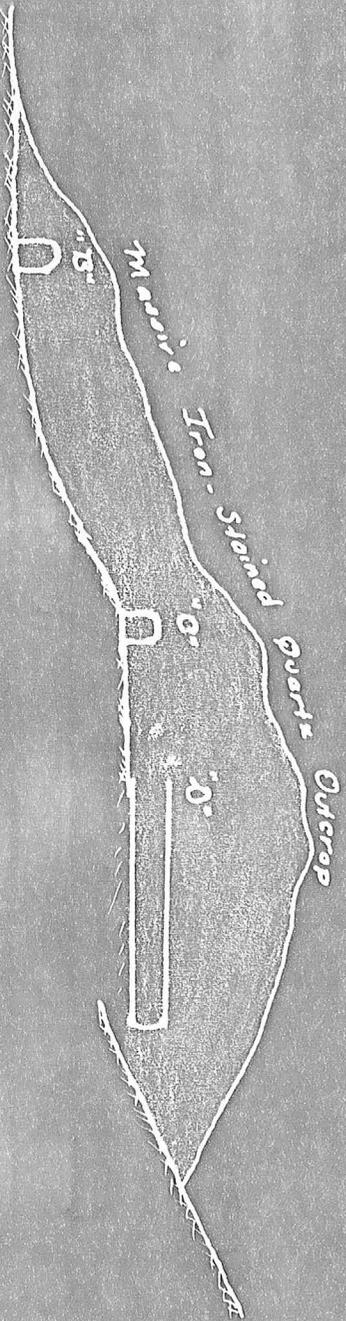
Diagram No. 2

Tia Juana Mine - Santa Cruz Claim

Showing relation of B-C and D workings
to a Massive Quartz Outcrop
over 100' long and 5-25' high

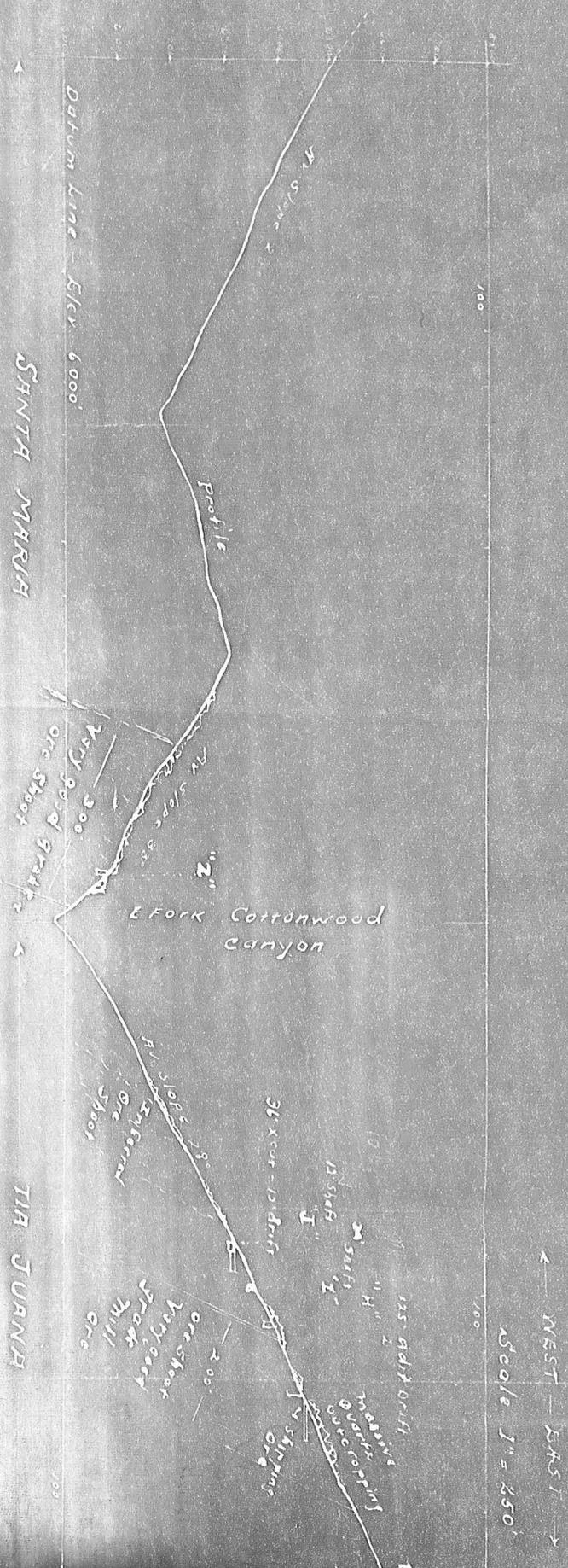
Scale 1" = 25'

West →



Note - Quartz Outcrop was not sampled because of its generally barren east and also because of the heavy expense involved - Barren Comb is a characteristic of the ore shoots which generally occur at shallow depths below the barren Comb.

LONGITUDINAL SECTION
TIA JUANA VEIN



Physical Data - The above claims cover the Tia Juana vein for 4500 ft along its strike - The surface of the claims is a rugged tree and brush covered terrain with steep slopes ranging from 25° in Josephine Canyon to 33° in Cottonwood Canyon. There is a difference of 730 ft between its highest and lowest points with an average elevation of 6350 ft - Horizontal and vertical distances are indicated by 100 ft markers. Some of the massive outcroppings of vein quartz are indicated by a ragged uneven profile line (exaggerated). Prospecting and Development Work - 14 openings consisting of Adit drifts and Crosscuts - Underground drifts and Crosscuts - shafts and surface trenches

aggregating over 500 ft cover 2 ft of the strike length of the are designated alphabetically in comparatively shallow and are prospectors searching for high grade. The deepest shaft is 33 ft and drift 125'. All openings penetrate varying degrees of 'marlized' nearly barren vein matter through mulling ore - up to high grade in grade shipping ore - Owing to openings in general only partly

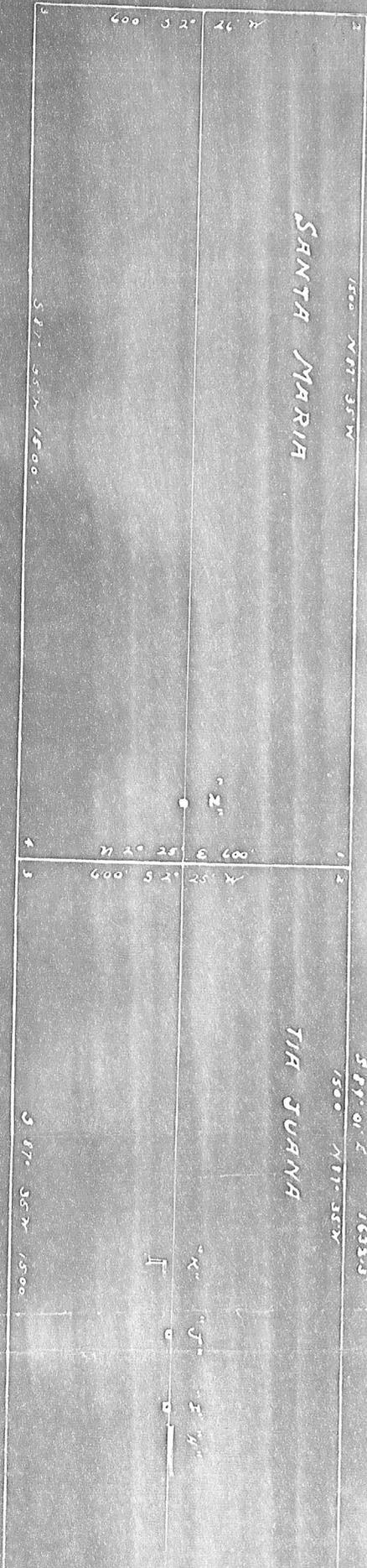
Diagram No. 10 #1

MAP OF TIA JUANA GROUP

OF

LODE MINING CLAIMS

LYING CHIEFLY IN SEC 21 T20S. R14E GR80M
 TYNDALL MINING DISTRICT, SANTA CRUZ CO
 ARIZONA



Parent Survey No. 2409 - Aug 21-31 - 1902

Patented - Feb 10, 1910

Surficial Area -

Santa Maria - 20.661 Acres

Tia Juana - 20.661 "

Santa Cruz - 20.054 "

-60.366 Acres

Location - Character and extent of workings
 SANTA CRUZ -

- "A" - 26 Adit Drift on vein -
- "B" - 16 X cut through vein - and 6' drift.
- "C" (5) - 21' X cut through vein -
- "D" (1) - 38' Adit drift on vein -
- "X" (4) - 10' Trench & 7' Shaft - on vein.
- "Y" (1) - 54 Adit Drift and Short X cut - on vein
- "E" (8) - 30 Shaft - (Clarke & Peterson) - on vein -
- "F" (2) - 50 Adit Drift - on vein -
- "G" - 8 Shaft - on vein

Chas. T

Alta Grana No. 10 A2

THE JUANA GROUP

OF

MINING CLAIMS

IN SEC. 21, T20S, R14E, C6R8M

DISTRICT, SANTA CRUZ COUNTY

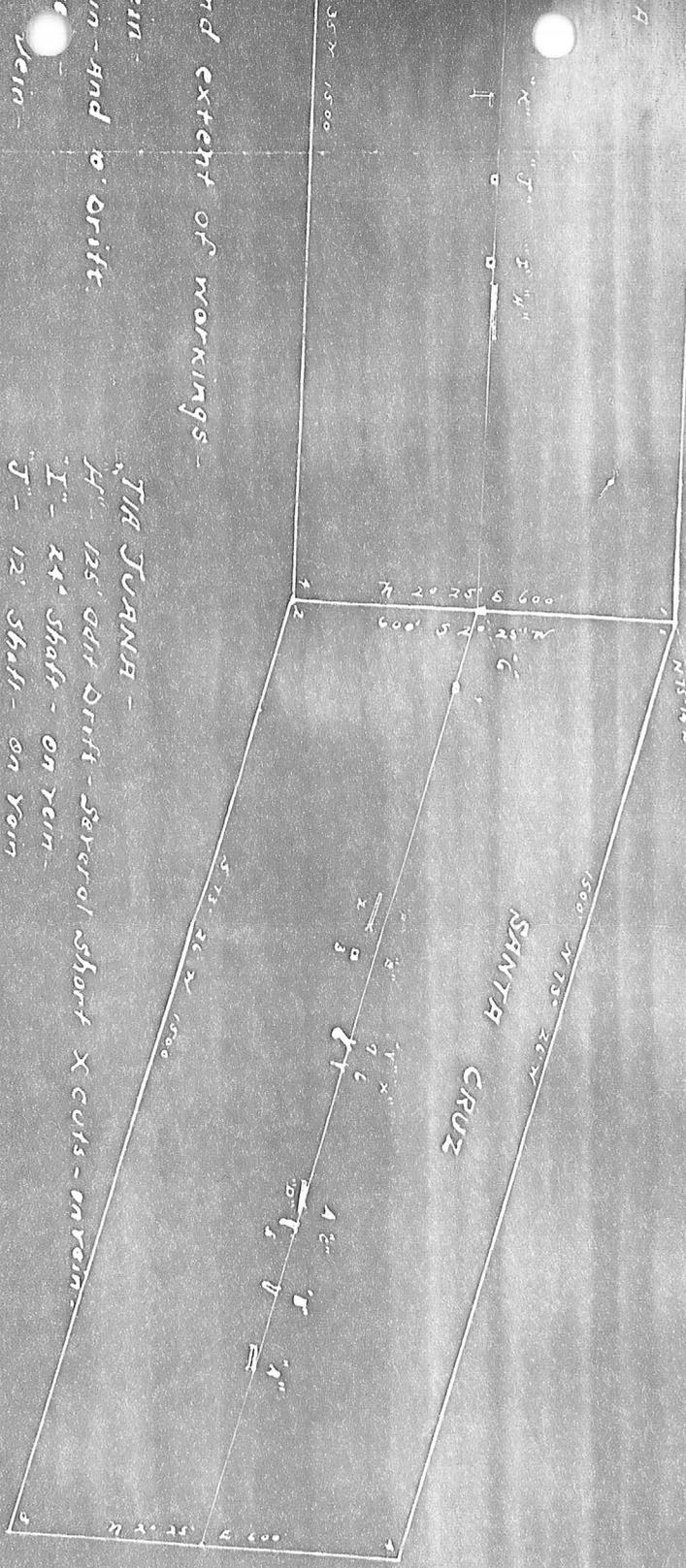
ARIZONA

45324

US L.M. 2409

N15°14.6' D1

N
Mar 13, 1915



and extent of workings -

THE JUANA -

H" - 125' drift - several short X cuts - on vein

I" - 24' shaft - on vein

J" - 12' shaft - on vein

K" - 34' X cut - 15' drift - on vein

and short X cut - on vein

SANTA MARIA -

Z" - 15' shaft - on vein

on vein

Chas. T. Tucker, Pres., Tijuana Mines, Inc.

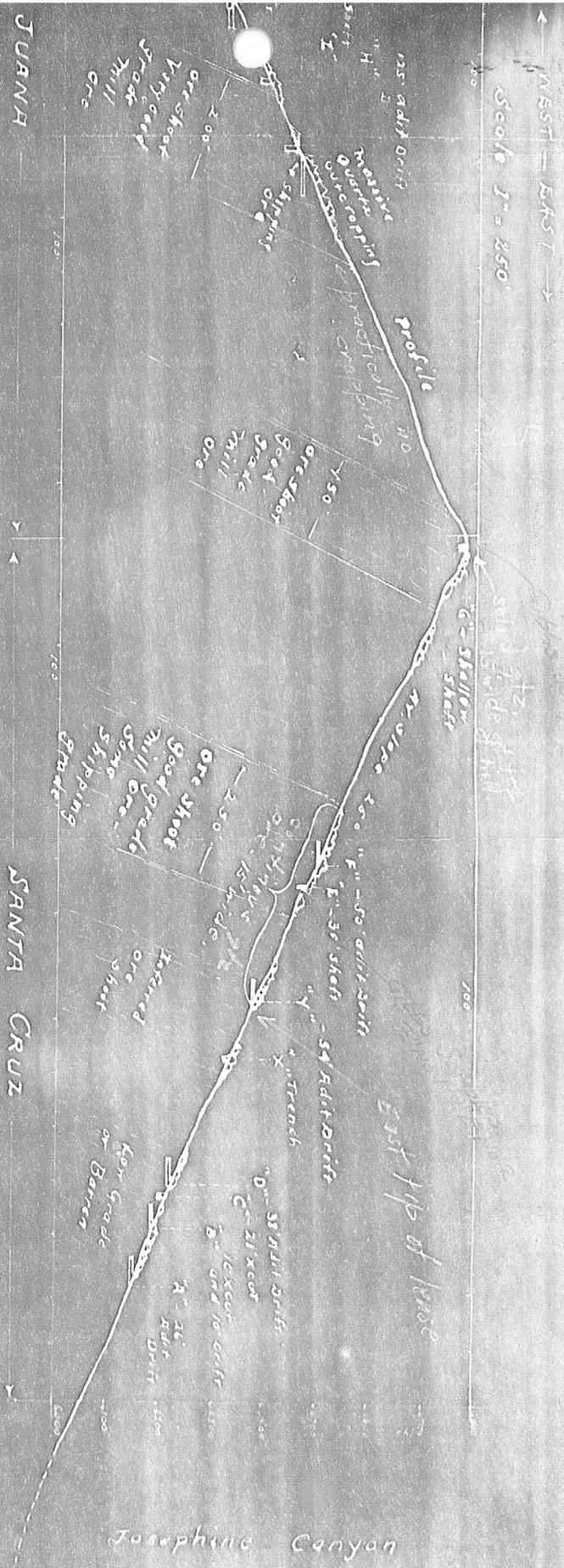
Map and data largely from
Patent Survey Notes - by Jas. G. O'Brien
E.M. - To accompany Tijuana Mines,
Inc. application for priorities and
allocation of equipment and materials

Plate #2 Sheet #2

TUDINAL SECTION

A JUANA VEIN

Plate No. 2



over 3500' cover approximately 2300' like length of the vein - These workings are alphabetically in the drawing - All are shallow and are the work of early workings for high grade silver ores. Shaft is 33ft. and the longest Adit. All openings penetrate the vein - showing traces of mineralization - ranging from vein matter through moderate grade to high grade milling ore or moderate milling ore - Owing to its great size the mineral only partly expose the vein at

of the face of their occurrence but they have served to determine the character of the ore deposition and the location and extent of some of the ore shoots as well as the value of the ore in these shoots. The ore shoots are somewhat closely spaced and are from 100ft. to over 300ft. long and from 8' to over 25 ft wide and of considerable depth range. Drawing by Jos. G. O'Brien, E.M. for Tijuana Mines, Inc. - to accompany application for Priorities and allocation of supplies and Equipment.

Chas. T. Tucker, Pres. Tijuana Mines Inc.

Sampling Data

- #1 - at road 24' x cut - over 15' cut in 1st cut - alt 82 (from 1st min) -
yellow - pyrite - Ca stain
- #2 - at 1st on south in 55' cut in road Empress yellow stain BT
- #3 - better place of alt dip 24' cut in road grey BT carrying yellow
pyrite & Ca stain - green stain
- #4 - face of long cut 12' cut near top - road compass dark BT
brown spots also - Ca stain
- #5 - 5' side face 2' above hollow alt 89. cut iron streak - BT
green in as full - 24' cut
- #6 - Ca. of face near bottom 10' cut in face of g. Blacky BT
along face green clay matrix
- #7 - across E side of x cut #1 - 60' cut - matrix yellow stain
BT - hard & compact
- #8 - 6' cut across face of cut at also

TIA JUANA MINE

Location S26, 20S, 14E
SANTA CRUZ COUNTY
TYNDALL DISTRICT

USGS Bull. 582 p. 63, 191, 311

AEC 172-489 p. 40

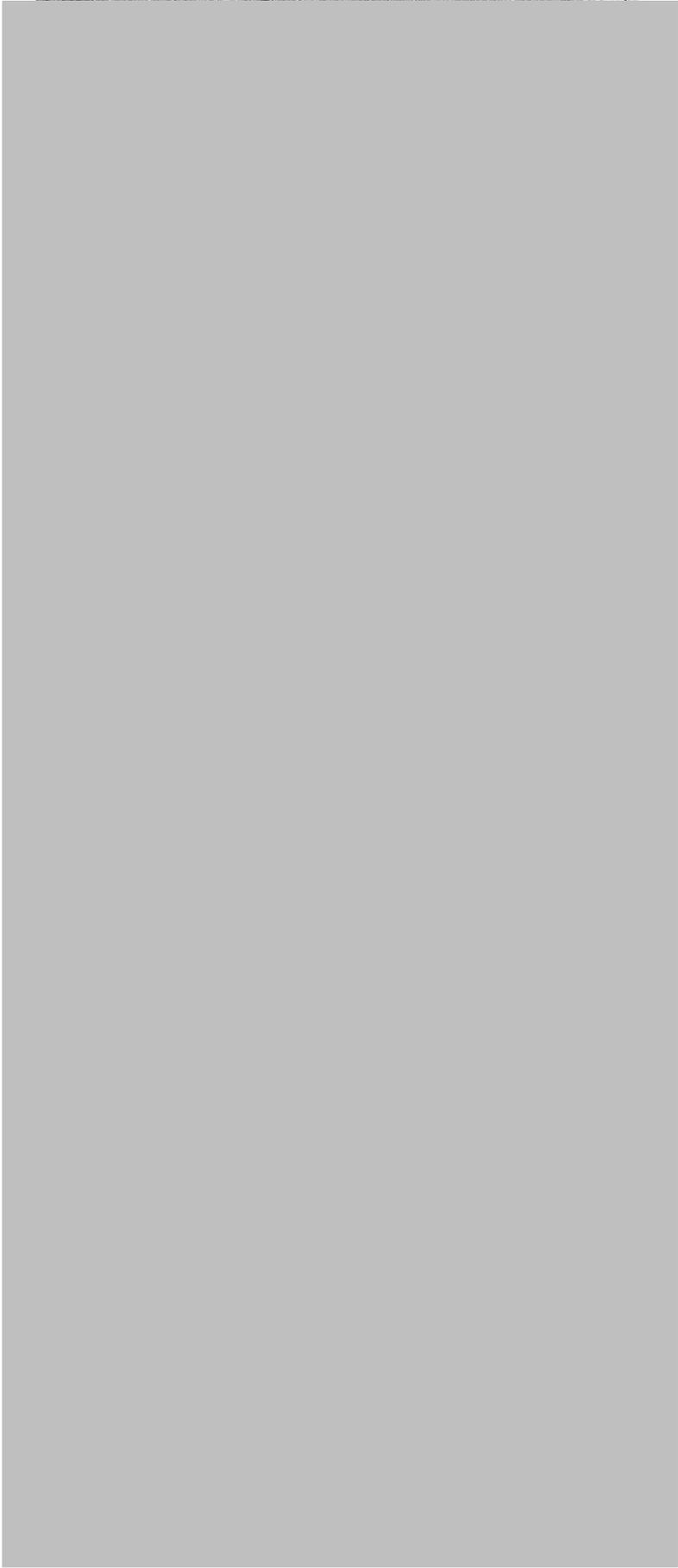
MILS Santa Cruz Index #233

AKA: Santa Maria, Santo Cruz

ABM Bull. 191, p. 87

USGS PP 748, p. 11-12

Mt. Hopkins 7.5 (included in file)



TIA JUANA MINE

SANTA CRUZ COUNTY

MG WR 9/8/85: Visited the Tia Juana mine (Santa Cruz Co.) Access to lower workings of the property, in Cottonwood Canyon, is provided by a good dirt road maintained for driving to the Smithsonian Astrophysical Observatory. The shaft at Iron Spring (SE $\frac{1}{4}$, Sec.22) is collapsed; it is in altered quartz monzonite porphyry with abundant iron oxide staining. One adit by the road, in the SE $\frac{1}{4}$, Sec 22, is in good condition and is about 30 feet long; there is a 5-foot adit just below the longer adit. Both adits were driven on a quartz vein in quartz monzonite porphyry; lots of galena and chalcopryrite occur in the quartz and in the monzonite. I suspect the adits in the NW $\frac{1}{4}$, Sec 26, are more extensive. Immediately in front on the adit on the east side of Tia Juana Ridge, at approximately 6440 elevation, is a shaft about 30 feet deep. The quartz vein at this shaft and adit appears to be at least 5 feet thick, trending N 80°W, and dipping vertically. There is no activity at the Tia Juana property.

MG WR 8/16/85: Mr. Dirk DenBaars, 6318 E. Hayne St., Tucson, Arizona 85710 phone 747-9551, is a geologist who consulted for the Tia Juana mine (Santa Cruz Co) while it was owned and operated by Mr. Floyd R. Bekins (deceased) of the Tia Juano Mines Corp. Mr. DenBaars reports that ore was shipped to the ASARCO smelter at Hayden during 1961 (?). Eventually, however, shipments ceased and ore was stockpiled instead near the mouth of Montosa Canyon. I visited this area and found a stockpile of what I assume to be Tia Juana ore in the SW $\frac{1}{4}$, Sec 19, T20S R14E (Santa Cruz Co). I estimate the stockpile contains 200 to 400 tons.

CJH WR 1/31/86: Visitor: R. H. Little. Has acquired a lease-option on the Tia Juana Mine #233, Tyndall Dist., Santa Cruz County, Sec 25, T20S R14E. He is going to diamond drill certain targets. He also expressed interest in the Homestake Mine and others, all Santa Cruz County.

TIA JUANA

SANTA CRUZ COUNTY

Field interview with Jesse Sinka, foreman for Mr. Bekins. Reported that they expected to start work on the Josephine Canyon side of the Tia Juana before Christmas. GWI WR 8-30-65

Mine visit to the Tia Juana mine 3½ miles east of the Glove at 6100' elevation. Mr. Jesse Sinka the foreman was there but could not be located. GWI WR 9-10-66

Active Mine List Oct. 1966 - 4 men
Active Mine List April 1967 - 4 men

This property is owned by Mines Development Co. GWI WR 7-1-67 (Report 9-8-60 ALJ)

The Mines Development Company is the Floyd Bekins of Amado, Jesse Sinka in charge. Address is Box 35, Amado, Arizona. They own the Tia Juana property. They are doing a little work. GWI 7-10-67

Active Mine List Nov. 1967 - 4 men

Mines Development continued doing some work at their Tia Juana mine located within the proposed Mt. Hopkins withdrawal area. They will have a problem with the Forest Service and their Iron Springs mine and other claims. GWI QR 4-1968

Active Mine List April 1968 - 4 men

Mine visit to Tia Juana mine near Mt. Hopkins in Sec. 20, R14E, T20S, Tyndall Mining District in Santa Cruz County. GWI WR 9-14-68

Active Mine List Oct. 1968 - 4 men

Active Mine List April 1969 - 4 men - Jesse Sinka, Supt. Mine Dev. Co., Box 35, Amado

The Mines Development Company of Amado, kept up the assessment work on their holdings in the Mt. Hopkins area. They also continued to haul material to their little mill being constructed in lower Montosa Canyon. GWI QR 9-1969

Active Mine List Oct. 1969 - 4 men - Jesse Sinka, Supt.

Active Mine List May 1970 - 4 men
Active Mine List Oct. 1970 - 4 men

Gower Federal Serv. Mining. Rocky Mtn., Mineral Law Foundation #IBLA 76-560

COMMODITY INFORMATION

COMMODITIES PRESENT C10 < AG, PB, ZN, CU, MN, MO, V, K, R, S, U, W, Y, Z >
 ORE MINERALS C30 < CHALCOPYRITE, PYRITE, GALENA, CHALCOCITE, MALACHITE, AZURITE, SPHALERITE, >
 COMMODITY SUBTYPES C41 < >
 GEN. ANALYTICAL DATA C43 < AVERAGE ORE VALUE: 15 OZ/TON AG, 3% PB, 3% ZN, 1% CU. >
 COM. INFO. COMMENTS C50 < >

SIGNIFICANCE

MAJOR PRODUCTS MAJOR < AG, PB, ZN, >
 MINOR PRODUCTS MINOR < CU, >
 POTENTIAL PRODUCTS POTEN < >
 OCCURRENCES OCCUR < MO, >

NON-PRODUCER
 MAIN COMMODITIES PRESENT C11 < >
 MINOR COMMODITIES PRESENT C12 < >
 OCCURRENCES OCCUR < >

*PRODUCTION

PRODUCTION YES (circle) PRODUCTION SIZE SML MED LGE (circle one) PRODUCTION UND NO (circle one)

EXPLORATION OR DEVELOPMENT

STATUS PRODUCER NON-PRODUCER
 STATUS AND ACTIVITY A20 < U > STATUS AND ACTIVITY A20 < >

DISCOVERER L20 < >
 YEAR OF DISCOVERY L10 < 1860'S > NATURE OF DISCOVERY L30 < B > YEAR OF FIRST PRODUCTION L40 < 1938 > YEAR OF LAST PRODUCTION L45 < 1968 >
 PRESENT/LAST OWNER A12 < >
 PRESENT/LAST OPERATOR A13 < BENKINS (1968) >
 EXPL./DEV. COMMENTS L110 < OTHER PAST OPERATORS INCLUDE: TIAJUANA MINES INC. (1963), WILSON (1938); FIVE CLAIMS; 3 ARE PATENTED: (THE SANTA CRUZ, TIA JUANA AND THE SANTA MARIA) >

DESCRIPTION OF DEPOSIT

DEPOSIT TYPE(S) C40 < VEIN / SHEAR ZONE >
 DEPOSIT FORM/SHAPE M10 < SPORADIC POCKETS AND STRINGERS; DISSEMINATION WITHIN VEIN >
 DEPTH TO TOP M20 < > UNITS M21 < > MAXIMUM LENGTH M40 < 2.5 > UNITS M41 < M >
 DEPTH TO BOTTOM M30 < > UNITS M31 < > MAXIMUM WIDTH M50 < 40 > UNITS M51 < FT >
 DEPOSIT SIZE M15 < SMALL > M16 < MEDIUM > M17 < LARGE > (circle one) MAXIMUM THICKNESS M60 < > UNITS M61 < >
 STRIKE M70 < N85 W > DIP M80 < VERTICAL >
 DIRECTION OF PLUNGE M100 < > PLUNGE M90 < >
 EXP. DESC. COMMENTS M110 < VEIN RANGES FROM 10-40 FT IN WIDTH AND EXHIBITS CONSIDERABLE VARIATION IN FILLING; GENERALLY SEPARATED FROM NORTH WALL BY A 1-FT SHEET OF GOUGE >

DESCRIPTION OF WORKINGS

Workings are: SURFACE M120 UNDERGROUND M130 BOTH M140 (circle one) OVERALL LENGTH M190 < > UNITS M191 < >
 DEPTH BELOW SURFACE M160 < 10-75 > UNITS M161 < FT > OVERALL WIDTH M200 < > UNITS M201 < >
 LENGTH OF WORKINGS M170 < 500 > UNITS M171 < FT > OVERALL AREA M210 < > UNITS M211 < >
 DESC. OF WORK. COM. M220 < VEIN OPENED BY CUTS, DRIFTS, CROSSCUT TUNNELS, AND SHAFTS TOTALING ABOUT 500 FT OF WORK; WORK DISTRIBUTED AT INTERVALS THROUGHOUT DISTANCE OF NEARLY 2000 FT, WITH VERTICAL RANGE OF ABOUT 600 FT >

GEOLOGY

*AGE OF HOST ROCK(S) K1 < LCRET. v. 61 m.y. BY PB-Q METHOD (DREVES, H, 1971) >
 *HOST ROCK TYPE(S) K1A < FINE GRAINED QUARTZ MONZONITE PORPHYRY >
 *AGE OF IGNEOUS ROCK(S) K2 < LCRET. v. 67 m.y. BY K-AR DATING METHOD (DREVES, H, 1971) >
 *IGNEOUS ROCK TYPE(S) K2A < MODERATELY COARSE-GRAINED QUARTZ DIORITE >
 *AGE OF MINERALIZATION K3 < LCRET. v. >
 *PERT. MINERALS (NOT ORE) K4 < QUARTZ GANGUE, LIMONITE AND MANGANESE STAINING; SPECULARITE >
 *ORE CONTROL/LOCUS K5 < STRONG, VERTICAL QUARTZ FISSURE VEIN CUTTING QUARTZ DIORITE; ORE IN SW END OF GARDNER CANYON DIKE SWARM; RHYOLITE PORPHYRY DIKES, MOST OF >
 *MAJ. REG. TRENDS/STRUCT. N5 < SALERO FAULT BLOCK >
 *TECTONIC SETTING N15 < >
 *SIGNIFICANT LOCAL STRUCT. N70 < VEIN IS TRACEABLE ON SURFACE BY PROMINENT REDDISH-BROWN BELT OF >
 *SIGNIFICANT ALTERATION N75 < OXIDIZED AT SURFACE. VEIN FILLING CONSISTS MAINLY OF CRUDELY BANDED, >
 *PROCESS OF CONC./ENRICH. N80 < OXIDATION; MINERALIZATION ALONG VEIN; POST-MINERALIZATION FAULTING >
 *FORMATION AGE N30 < >
 *FORMATION NAME N30A < >
 *SECOND FM AGE N35 < >
 *SECOND FM NAME N35A < >
 *IGNEOUS UNIT AGE N50 < LCRET. v. >
 *IGNEOUS UNIT NAME N50A < JOSEPHINE CANYON DIORITE >
 *SECOND IG. UNIT AGE N55 < >
 *SECOND IG. UNIT NAME N55A < >
 *GEOLOGY COMMENTS N85 < VEIN CROPPINGS RISE 20 FT ABOVE SURFACE IN SOME PLACES. QUARTZ OCCURS MOSTLY IN MULTIPLE-BANDED PARALLEL REEFS WITH SMALL AMOUNT OF ALTERED MINERALIZED >

GENERAL COMMENTS

GENERAL COMMENTS GEN < >

PUT THIS COPY IN ONE FILE

Tiajuana (+) file 9/2/88
Mike sent this to the Forest Service
see



STATE OF ARIZONA
DEPARTMENT OF MINES AND MINERAL RESOURCES

MEMORANDUM

To: Leroy E. Kissinger, Director
From: Mike Greeley, Field Engineer
Subject: Proposed Withdrawal (AZ-920-08-4220-10; A-23294)
Date: August 31, 1988

Although the proposal by the Forest Service to withdraw an inlier of 61.356 acres of land from mineral entry seems innocuous, I am somewhat annoyed with the suggestion. The acreage comprises three patented mining claims, the best known of which is the Tiajuana (f, Santa Cruz Co.).

The Tiajuana, a silver/base-metal mine in the Tyndall mining district, has operated intermittently for more than 100 years. Although total production is small, the mine was apparently operated as late as 1968.

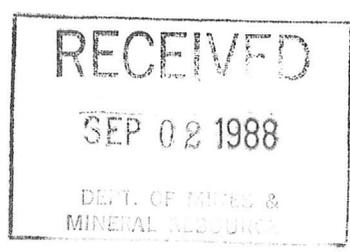
The parcel lies at the interface between the Fred Lawrence Whipple Observatory property and the Coronado National Forest. The national forest surrounds the observatory.

I see no compelling reason to withdraw the Tiajuana parcel from mineral entry. Although it penetrates the Whipple Observatory property, its west end, in fact, projects into national forest land that is still locatable (for minerals). In addition, the Tiajuana mine area is over a mile from the Whipple Observatory and more than 2,000 feet below it. This physical separation combined with rugged terrain and relatively heavy vegetation would effectively buffer and conceal any future exploration or mining activity from the observatory.

While I do not anticipate significant, near-term mineral production in this area, the long-term potential is relatively good. The Tyndall district is well mineralized and has been mined fairly extensively.

The recent establishment of the Mount Wrightson Wilderness Area (over 25,000 acres) adjacent to the Whipple Observatory property, both of which are withdrawn from mineral entry, appears to be enough withdrawal. I do not believe that an additional withdrawal of 61.356 acres is necessary to the operation of the Whipple Observatory. A withdrawal will, however, have an adverse impact on future mineral exploration and production. I recommend that this parcel of highly mineralized land not be added to the enormous acreage already closed to mineral exploration in Arizona.

Mineral Building
State Fairgrounds
Phoenix, Arizona 85007
(602) 255-3791



416 W. Congress
Suite 161
Tucson, Arizona 85701
(602) 628-5399

Tiajuana Mine
Santa Cruz Co.

4310-32

AUG 10 1988

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

(AZ-920-08-4220-10; A-23294)

Proposed Withdrawal; Opportunity for Public Meeting

Agency: Bureau of Land Management, Interior

Action: Notice

Summary: The U.S. Department of Agriculture, Forest Service, recently acquired 61.356 acres of private land within the boundaries of the Coronado National Forest under the provisions of the General Exchange Act of 1922. The land is surrounded by an existing withdrawal for the Fred Lawrence Whipple Observatory (FLWO). The existing withdrawal protects the large investment in scientific research at the Observatory. The Forest Service has now filed an application to withdraw the 61.356 acres of land from mineral entry. This application will complete the protection of the facilities and research efforts at FLWO. This notice closes the land for up to 2 years from location and entry under the United States mining laws.

Date: Comments and requests for meeting should be received on or before (insert date 90 days from date of publication in the FEDERAL REGISTER).

Address: Comments and meeting requests should be sent to the Arizona State Director, Bureau of Land Management, P.O. Box 16563, Phoenix, Arizona 85011.

FOR FURTHER INFORMATION CONTACT: Lisa Schaalman, BLM, Arizona State Office, 602-241-5534.

SUPPLEMENTARY INFORMATION: The U.S. Department of Agriculture filed an application to withdraw the following described National Forest System land from location and entry under the United States mining laws, subject to valid existing rights:

Gila and Salt River Meridian, Arizona

Coronado National Forest

T. 20 S., R. 14 E.,

MS 2409 lying within sections 22, 23, 26, and 27.

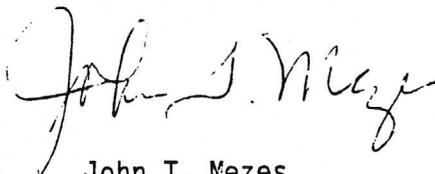
The area described aggregates 61.356 acres in Santa Cruz County.

For a period of 90 days from the date of publication of this notice, all persons who wish to submit comments, suggestions, or objections in connection with the proposed withdrawal may present their views in writing to the undersigned officer of the Bureau of Land Management.

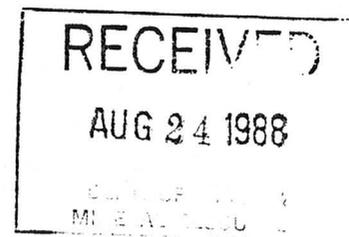
Notice is hereby given that an opportunity for a public meeting is afforded in connection with the proposed withdrawal. All interested persons who desire a public meeting for the purpose of being heard on the proposed withdrawal must submit a written request to the undersigned officer within 90 days from the date of publication of this notice. Upon determination by the authorized officer that a public meeting will be held, a notice of time and place will be published in the FEDERAL REGISTER at least 30 days before the scheduled date of the meeting.

The application will be processed in accordance with the regulations set forth in 43 CFR 2300.

For a period of 2 years from the date of publication of this notice in the FEDERAL REGISTER, the land will be segregated as specified above unless the application is denied, cancelled or the withdrawal is approved prior to that date. The land remains open to mineral leasing and to those laws governing management and disposition of National Forest land by the Forest Service, including lease, easement, permit and management, utilization and disposal of vegetative resources. Current administrative jurisdiction over the segregated land will not be affected by the temporary segregation.



John T. Mezes
Chief, Branch of Lands and
Minerals Operations



DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Tia Juana

Date Sept. 8, 1961

District Tyndall District, Santa Cruz Co.

Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Herman Rhea's assistant.

References Report of July 28, 1961

Present Mining Activity Driving a crosscut to the right of the main adit. 9 men working. Operations now on a 2 shift basis.

Review of Operations Mine started working two shifts on July 31. 6 men are working on the mining operations, 2 are doing mechanical work. Herman Rhea is the manager. The main adit was driven ahead to a distance of 160 ft. from the portal. A cross cut was then started on the right hand side to intersect an ore vein. This cross cut is now in a distance of about 20 ft.

Mining operations are carried on in the manner shown on my July 28 report.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Tia Juana Date July 28, 1961
District Tyndall Dist., Santa Cruz Co. Engineer Axel L. Johnson
Subject: Field Engineers Report. Information from Herman D. Rhea, Manager

References Reports of Sept. 8, 1960, Dec. 19, 1958, & May 28, 1957.

Location Sec. 26 - T 20 S - R 14 E ---- about 13 miles E. of Amado.

Number of Claims 3 patented claims

Owners & Operators Tia Juana Mines Corp., Box 24144, Los Angeles 24, Calif.
Floyd R. Bekins, principal owner, 301 Copo de Oro Road,
Los Angeles 14, Calif.
Herman D. Rhea, Manager, Box 35, Amado & Box 667, Nogales.

Principal Minerals Copper, lead, gold and silver. *mail let. 10-29-65 moved left on address*

Present Mining Activity Driving an adit into the mountain, and also doing road construction work. 7 men working at present. Will be 9 men working next week.

Milling & Marketing Facilities Will require a mill to treat the ore. Operators plan to start mill construction in 90 days.

Present Mining Operations Operators are now driving an adit into the mountain, following one of the ore veins. This adit is now in about 70 ft., and will be driven about 100 ft. further, after which they expect to cross cut to intersect two additional veins.

Mr. Rhea reports that good milling ore has been removed from every round, and a small amount of direct shipping ore has been taken out from some of the rounds. He states that they now have a stockpile of about 200 tons of milling ore, and another stockpile of about 18 tons of direct shipping ore, running about \$50 per ton in lead, silver & copper values.

The size of the adit is 7.5' x 8.5', and has to be timbered all the way on account of the fact that the ground is highly fractured.

A mucking machine dumps the ore into ore cars, which are trammed by hand and dumped on sheet metal plates outside the entrance of the adit. The material is later transferred by means of a Caterpillar loader (2yd.bucket) ----- the waste going to the waste dump and the milling ore and shipping ore going into separate stockpiles.

Other equipment used consists of a portable power plant, a 365 c. f. m. compressor, an Atlas Copco drilling machine, and an air blower.

A considerable amount of road construction work has been done to improve the road from Amado to the mine (Mr. Rhea estimates \$ 20,000 worth). This road construction work is still continuing.

Operation is now on one shift only, but Mr. Rhea states that the work driving the adit will go on two shifts next week, and that 2 more men will be added.

Proposed Plans (Mine)

- (1) Drive adit ahead an additional 100 ft., & then crosscut to cut other 2 veins.
- (2) Drive a second adit at right angles to the first and at 45 ft. lower elevation for a distance of about 180 ft. This will be mostly in rock, but will cut 3 veins.
- (3) Construct an ore bin.
- (4) Purchase a compressed air locomotive, capable of hauling 6 ore cars.

Proposed Plans (Mill) Operators plan to start mill construction in about 90 days. This will be a 50 ton gravity mill, to be located about 5.5 miles to the west of the mine.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Tia Juana

Date September 8, 1960

District Tyndall, Santa Cruz County

Engineer Axel L. Johnson

Subject: Field Engineers Report. Information from Herman Rhea.

References: Report of Dec. 19, 1958.

Location: Sec. 26 - T 20 S - R 14 E - about 13 miles E. of Amado.

No. of Claims: 3 patented claims.

Owner & Operator: Floyd R. Bekins, 301 Copo de Oro Road, Los Angeles 14, Calif., et al

Mr. Bekins acquired the property from Mine Development Co., the former owners.

Principal Minerals: Copper, lead, gold and silver.

Present Mining Activity: Road building - 2 to 3 men working.

Geology & Mineralization: See report of May 28, 1957.

Ore Values: " " " " " "

Mill & Marketing Facilities: Will require a mill to treat the ore.

Past History & Production: See report of May 28, 1957.

Old Mine Workings: " " " " " "

Present Mining Operations: The road from Amado to the property has been repaired for the last 7 miles. In addition about 4 miles of new road has been built.

Proposed Plans: Operators plan on putting down one or two diamond drill holes. They own their own diamond drill, a Chicago Pneumatic for drilling an EX core.

Later on, if the drilling results prove favorable, they plan on driving a tunnel thru the mountain, following the ore vein.

Additional: Mr. Bekins also owns the Copper Ledge claims, adjacent to the Mexican border in the Oro Blanco Mining District on which he expects to do diamond drilling and road building.

Mr. Bekins also owns some patented mining claims near Sells. A woman missionary at the Trading Post near Sells is in charge of this property.

This property active Feb. 1961

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine Tia Juana

Date December 19, 1958

District Tyndall, Santa Cruz County

Engineer Axel L. Johnson

Subject: Field Engineer's Report - Information from Morris Delgleish and Orville Rigby, Owner.

Location: 13 miles E. of Amado, or about 25 miles N. of Patagonia. Best access now is by way of Amado, as the road from Amado to the mine has now been completed. Legal description - Sec. 26, T. 20 S., R. 14 E.

No. of Claims: 3 patented claims.

Owner and Operator: Minex Development Company, Box 20, Patagonia, Arizona. Morris Delgleish and Orville Rigby, same address.

Principal Minerals: Copper, lead, gold and silver.

Present Mining Activity: Driving adit. Two men working.

Geology and Mineralization: See report of May 28, 1957.

Ore Values: See report of May 28, 1957.

Mill and Marketing Facilities: This is milling grade ore and a mill to treat the ore will be required. Water for milling operations will have to be developed.

Past History and Production: See report of May 28, 1957.

Old Mine Workings: See report of May 28, 1957.

Present Mining Operations: During the past two months the owners have been engaged in finishing the road from Amado into the property. This road was started in 1951 by the Tijuana Mines, Inc. An additional 3/4 mile of road was built. Exploration work on the main Tia Juana vein and a branch vein, which the operators call the Z vein, was conducted by means of a bulldozer. Operators state that they have now exposed both veins on both sides of the canyon. An adit has now been started which will cut both the Tia Juana vein and the Z vein. The adit will extend a distance of about 200' across both veins. An ore bin will also be built within the next few weeks.

Proposed Plans: Operators report that they have been negotiating with certain parties who plan to lease the property and build a mill. A 150 to 200 TPD mill has been suggested. Consideration has also been given to mill the ore at the Sahuarita mill on a custom basis. This would be only a 28 mile haul.

Terms of Lease: Operators state that they would like to lease the property on a 10% royalty basis with a \$25,000 down payment.

Remarks: Owners are interested in applying for a O.M.E. exploration loan for exploring the property.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Tia Juana Mine

Date May 28, 1957

District Tyndall District, Santa Cruz Co.

Engineer Axel L. Johnson

Subject: Field Engineers Report. Personal Visit & Information from purchasers.

Location 13 miles east of Amado, or about 25 miles north of Patagonia. Best access is by way of Patagonia. Drive SW from Patagonia on the Nogales highway for 3 miles. Turn left (N) and drive about 20 miles on county road. Walk the remaining mile to the mine on a steep trail. Legal description is Sec. 26 -- T 20 S -- R 14 E.

Number of Claims 3 patented claims.

Owners Mrs. F. E. Bethell, Box 767, Patagonia, Ariz.

Purchasers Minex Development Co., Box 20, Patagonia, Ariz.
Maurice Delgleish and Orville J. Rigby of same address comprises the co.
Mine purchased with a cash down payment, with subsequent monthly payments.

Principal Minerals Copper, Lead, Zinc, Gold and Silver.

Present Mining Activity None. Exploration work being planned.

Geology and Mineralization A fault fissure vein, with the country rock on both sides of the vein being diorite. The vein, for the most part, contains only milling grade ore. Vein is quite wide, ranging from 10 to 40 ft. in width, or an average of about 14 ft. Dip of the vein is nearly vertical and the strike is about N 85 deg. W. Vein extends the entire distance of the 3 claims, which lie end to end.

Notes from Schrader's Report "The vein ranges from 10 to 40 ft. in width, and exhibits, in cross section, considerable variation in the filling. It is generally separated from the north wall by a 1 ft. sheet of gouge, and this is succeeded by a 2 to 8 ft. of white, ironstained, mostly massive quartz, which contains chalcopyrite, pyrite, and galena, with some copper carbonates and chalcocite sporadically distributed, mostly in small pockets and disseminations."

About 400 ft. east of the divide, and approx. the same distance east of the center of the center claim, the vein forks off and gives off a strong spur, which deviates obliquely from the main vein, with a strike of about N 70 deg. W.

Ore Values Most of the ore is definitely milling grade ore. Some rich pockets have been found, but these pockets have been few and far between. Purchasers report several samples have been taken across the vein, which all show different results, most of them being from 2 to 5 % in copper with some lead, zinc, gold, and silver. There is no uniformity whatever in the mineralization, and a considerable amount of exploration would be required to determine the average grade of the ore and the tonnage of ore, which could be milled. A mill to treat the ore definitely would be required.

Milling and Marketing Facilities A mill to treat the ore would be required. Water would be a problem, and the mill, no doubt, would have to be located near Patagonia, where there is an ample supply of water.

Past History and Production (1) No past production figures are available, but, apparently, the past production is quite small.

(2) In 1951, the property was leased out, with option to buy, to Tijuana Mines, Inc. (a closed corporation), Chas. T. Tucker, Phoenix, Ariz. being the President, and Joseph G. O'Brien the mining engineer in charge of the work. Their first and only project was to build a road, a distance of 7 1/2 miles, starting about 6 miles east of Amado

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

~~FIELD ENGINEERS REPORT~~

News Item

Mine Tia Juana Mine

Date Dec. 6, 1951

District Tyndall Mining District, Santa Cruz Co.

Engineer Axel L. Johnson

Subject: News Item--- Source of Information--- J. G. O'Brien

Location 13 miles east of Amado, Ariz, reaching from Josephine Canyon into and across Cottonwood Canyon.

Number of Claims 3 patented claims, in Sec. 26-- T 20 S -- R 14 E.

Owners Mrs. F. E. Bethell, Patagonia, Arizona.

Operators Tijuana Mines, Inc.--- closed corporation---no stock for sale.
Joseph G. O'Brien, Engineer, Box 77, Amado, Ariz.
Chas. T. Tucker, Phoenix, Arizona.
and 6 others, leasing the property with option to buy.

Officers Chas. T. Tucker, Phoenix, Ariz., President.
Joseph G. O'Brien, Box 77, Amado, Ariz., Engineer., lives at Half Way Station.

metals Present Lead, Zinc, Copper, and Silver

Men Employed 3 men on Development Work and Road Building.

Production Rate No production yet, as it is in development stage.

milling Facilities No milling facilities at present . The operators plan to build ~~the~~ their own mill near the Half Way Station to treat their own ore, and will probably also accept custom ore. Selective Flotation will be used for sulphide and semi-sulphide ores.

Geology Vein is white, iron stained massive quartz, which contains pyrite, chalcopyrite sphalerite, and galena, with copper carbonates and chalcocite sporadically distributed, mostly in small pockets and disseminations. A large part of the vein is low grade milling ore. The vein is wide, however, being from 10 to 40 ft. in width, probably aver. about 14 ft. The dip is nearly vertical and the strike is nearly E. and W., extending for a distance of about a mile on the 3 claims comprising the property. The country rock on both sides of the vein is diorite. For further Geological information see " Mineral Deposits of the Santa Rita and Patagonia mountains, Arizona" by Frank C. Schrader and James M. Hill---- pages 191 to 193.

Ore Values Most of the ore is of low grade milling quality. However, some rich pockets are found. One assay ran Lead--30%, Zinc--7%, Copper--4 %, Silver-- 6 Oz.

Old Workings The property has a considerable amount of old workings by early miners of 60 to 90 years ago, who, it is said took out some rich silver ore. These old workings consist of shallow shafts (deepest 30 ft), open cuts, tunnels and cross cut, aggregating about 500 ft. of work.

Past Production No figures available, but apparently not very large.

Present Operations The operators are now building a road for a distance of 7 miles, from a distance of 6 miles to 13 miles east of Amado. They are also cleaning out the old mine drifts and tunnels.

Proposed Work To drive a tunnel into the mountain on the vein, which is 10 ft. wide at the point of starting and averages \$70 per ton in values.

TIA JUANA

Ag, Pb, Cu, Au, Mn

Santa Cruz 12 - 1 S 24, T 20 S, R 14 E

E. E. Bethell, Patagonia

'39

NAME OF MINE: TIA JUANA

COUNTY: S. CRUZ
DISTRICT:
METALS: Cu

OPERATOR AND ADDRESS:

MINE STATUS

DATE:

DATE:

5/1/44

W. M. Harper, Roskruge,
Tucson

5/1/44

Financing

TUCKER, CHAS. T., et al Owners
Phoenix, Arizona

Aug. 5, 1952

MINE - R. & R. Mine, Tyndall Mining Dist., Santa Cruz Co.

Other Owners - Tijuana Mines, Inc., viz
Joseph G. O'Brien, Engineer, Box 77, Amado, Ariz.
6 others in company.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

OWNERS MINE REPORT

Date June 20, 1939.

Mine TIA JUANA

District Tyndall, Santa Cruz Co

Location (20 miles WNW from Patagonia

Former name Same

(9 miles easterly from siding
(on S. P. Ry, Tucson-Nogales Div.

Owner E. E. Bethell. (F. E. Bethell, L. Lindsay)

Address Patagonia, Arizona.

Operator E. E. Bethell in charge.

Address

President No corporation.

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals Silver, Lead, Copper, Gold, Molyb-
denite.

Men Employed

Production Rate Not established

Mill: Type & Cap.

Power: Amt. & Type None

Operations: Present Idle since 1916 when optionee died.

Operations Planned

Owners not able physically or financially to operate.

Lode

Number Claims, Title, etc. Three patented/mining claims, Tia Juana, Santa Maria and Santa Cruz.

Description: Topog. & Geog.

Crosses a large divide between Montosa and Josephine canyons.
Crest about 600 feet above canyons. Topography rugged. Favor-
able for tunnels.

Mine Workings: Amt. & Condition

On the Josephine canyon side about 500 feet of workings spread
over a distance of 2,000 feet. Include one shaft 50 ft deep, and
one 10 ft; one tunnel 70 ft and one 40 ft. Most of the workings
are open.

On the Cottonwood side, vein is opened by 120 ft of drift and
cross-cut and minor workings.

(over)

Geology & Mineralization Country rock is diorite cut by a strong, quartz filled fissure vein. Strike No 85 deg W, extending westward from Josephine canyon across Cottonwood canyon and into Montosa canyon. Vein stands almost vertical, averages about 14 ft in width and cuts across the country for two miles or more, often standing 20 feet or more above the ground level. Mineralized by disseminations, lenses and shoots of varying size and distribution.

Ore: Positive & Probable, Ore Dumps, Tailings Ore is exposed in most of the workings, but no positive ore blocked. Dumps have all been picked over and the good ore stolen and sold. Assays showed values approximately as follows: A. B. Richmond sampled vein on cross-cut, \$18.00 ton. About 600 ft west from this place \$20.00 per ton across 6 ft, and about 600 ft west they sank a shaft 40 ft deep taking out six cars of ore that ran about \$25.00 per ton. Below,

Mine, Mill Equipment & Flow Sheet No mine or mill equipment. where the vein is 40 ft wide it runs \$15.00 a ton. Sam Island sampled 7 ft in width of the vein in the 40 ft shaft and C. A. Pierce made the assay which ran \$45.00 ton.

Road Conditions, Route Fair auto road from the Patagonia side to Bond camp, then 4 miles over trail to the mine. From the west, a Forest Service road passes within 2-1/2 miles of the property. Pack burros are available in the district.

Water Supply Water for domestic use in Josephine canyon. Believed water for a milling operation could be developed at reasonable cost.

Brief History The mine was first discovered in the early 60's and pioneer prospectors chlorided some rich silver ore, 1200 oz per ton average. In 1902 it was acquired by Dr. W. P. Blake, James Kane and W. C. Balcomb who patented the ground but did very little work. It was optioned to the Ferry interests about 1916. Acquired by the present owners about 1936.

Special Problems, Reports Filed Described by Schrader in U S G S Bulletin No 582 at Page 191.

Remarks This is one of the greatest outcrops in Southern Arizona as to width and continuity. Vein from 10 ft to 40 ft in width and 2-1/2 miles long. In spite of the years that the property has been known, it has had very little development. The metallization is believed to be strong enough to make the entire vein workable as a large scale operation.

If property for sale: Price, terms and address to negotiate. Property is for sale for cash cheap, or on lease and bond to parties financially able to carry on development and operation. Principal owner is past the age of active work and will make a sacrifice of this valuable property.

Signed..... E. E. Bethell.

Use additional sheets if necessary.

MT-3 TIA JUANA, E.E.Bethell. Patagonia, Arizona.

Copy of Mine Owners Report covering property listed with
the Department of Mineral Resources has been furnished to

Chas. E. Lees, 240 N. Cliffwood Ave., Los Angeles, Cal.

DEPARTMENT OF MINERAL RESOURCES
J. S. Coupal, Director

REPORT ON THE TIA JUANA GROUP OF MINES
By Wm. P. Blake, E.M.

January 10, 1906

Location:

This property is located about 25 miles west of the town of Patagonia, Santa Cruz Co., Arizona. The group consists of three patented lode claims-Santa Cruz-Tia Juana-Santa Maria- and is still in the ownership of the original locators-Wm. P. Blake, E.M. - W.E. Balcom, E.M. - and J. Kane (1906).

Accessibility:

A fairly good wagon road for about 15 miles and then a saddle trail to the East end of the group, which is about three miles long, claims extend westerly 4500 ft. A wagon road could be made to the mine at this end of the property, but a much better one could be made coming from the west. It would be much shorter and at about one-fourth the cost, and more convenient, over even surface and would end in about mid-way of the length of the three claims. Here an excellent crosscut tunnel would come under a known large body of ore; and not be longer than 50 ft and would afford about 100 ft of vertical range overhead. The time is not far off when a railroad up the Santa Cruz valley from Tucson to Nogales and the West Coast of Mexico, will be put through. In fact, I have information that the S.P.R.R is negotiating for a right-of-way there now. That would put the property not over 15 miles for R.R. transportation, and would bring it on the main highway from the mine to Nogales 24 miles, or to Tucson, 60 miles.

Climate:

There is none better for mining purposes--the year round, no extremes.

Altitude:

Between 6100' and 6800' affording 700' of vein overhead from lowest point of outcrops to apex which is about the middle of the three claims.

Geology:

The contour of the surface at the mine is mountainous though not rough, as one could ride over the outcrops on horseback. The property is on a ridge which is on the South rim of the Santa Rita Mts. and on the West side of Josephine Canyon, which heads just below the highest peak which has an altitude of 9432' and runs S.E. A saddle trail was made from the creek bottom up to the mine which was about a mile in length up the side of the ridge to the east end of the property.

The country rock is a diorite occurring in bands form, vertically exposed on the North wall and joining the vein filling with a foot or more of selvage. The vein filling proper consists of quartz, much stained with iron ox. and limonite with the ores which seem to occur in shoots, varying in thickness, in some cases from 1 to 20 ft.

Nature of Ores:

The ores are lead sulphide, copper sulphide (chalcocite, Chalcopyrite), bornite, azurite and gold bearing pyrite. Silver values are mostly associated with the lead as is also the molybdenite (MoS_2).

History:

On the Tia Juana claim, which is on the west side of the ridge, in the open cut at the mouth of the Tia Juana Tunnel, about 50 tons of lead-silver ore was taken out from the grass-roots and assayed 65 Oz Ag.-35%Pb.-And from \$5- to \$10 gold. Not even a foot was sunk below the floor of the tunnel. This work was done in 1887 by Lavery Bros. who had a lease on the property from the original owner, Dug Snyder, and was called Jumbo and Wonder claims at the time.

Lavery Bros. were run out by the Apaches and nearly lost their lives and never returned. The property was held from time to time by the common run of prospectors who did their location work but never staying on the job long enough to actually see what the vein did carry, on account of the Apaches at the time.

X Just over the East side of the ridge on the Santa Cruz claim, a 50 ft tunnel was driven all in ore which amounted to about two carloads of sulphide ore, copper and lead mostly, which gave returns of about \$60.00 per ton. This ore was later stolen and packed down from the mine on burros in 1905 and sold to ore buyers. Within 50' of the mouth of the above tunnel, a 40' shaft was sunk by Geo. Clark and Jim Peterson, who reported taking out about two tons of lead-silver ore there, that assayed in ton-lots 70-Ozs Ag.-30%Pb and sold it in Tucson where it was smelted in the little-old lead smelter run there for many years on lead-silver ores. No returns were ever paid for lead or copper values at that time. Only gold and silver values were paid for. On my examination of the property, we discovered a working on an extension of the vein at the extreme East end, evidently worked many years ago, and found several pounds of silver ore (argentite) which assayed 2100 ozs Ag per ton. Why this rich discovery was abandoned I could not understand, though it was taken from a tunnel which had about 10' underground in a white brecciated quartz. Evidently another Apache scare.

About 1889 or 1890 a small reverberatory was built down in Josephine Canyon to smelt what ores were being mined in the vicinity from Tia Juana vein on the lead-silver ores. It was abandoned, owing to trouble about the values of the ores run through it not coming near assay values, as well as on account of trouble from time to time from the Indians.

Conclusion:

After my above-mentioned examination of the property from every point of view I have come to the conclusion that the Tia Juana has every possibility and the merit to make a large producer of pay ores. When the topographical condition of the fissure is taken into consideration, there is a magnificent opportunity to explore and work the property in a most economical way, from an adit tunnel which can be run for at least 3,000' horizontally, in under many thousands of tons of ore of all grades, affording 700' vertically of backs to the Apex which is about midway of the three claims. I have every reason to believe that there will be a large tonnage of concentrating ore, as well as ores of purity to be shipped without concentration.

Water for concentration can be had from an impounding damsite in the main Josephine Gulch where an abundance of water can be had the year round. Also, in Cottonwood Canyon on the west slope where there exists a most desirable dam-site through a very narrow passage between walls 10' wide, of solid porphyry dike which crosses the main Josephine Gulch at a point not to exceed $1\frac{1}{2}$ miles from the mine.

As concentration is progressing right along, our metallurgists are now carrying on a very extensive research work in oil flotation in the concentration of complex ores. If it can be used economically enough, I have every reason to believe that it will prove of great value in the concentration of complex ores of many mines. Oil concentration will then make the Tia Juana a very valuable property.

Haulage from the mine to points of rail transportation can be carried on from the mine west by wagons or a tram down to the railroad, at Chavez Siding (Amado Siding also), where an excellent location for a concentration plant could be installed. Here, ores could be run by gravitation down through the process from an ore bin situated on one of the high mesas within 200 yds from the proposed Nogales-Tucson R.R. track, where an abundance of water can be obtained from a very shallow well near the Santa Cruz River channel.

I am very sorry and regret to the extreme, that old age has made it impossible for me to direct and superintend the development of the most attractive mine proposition that I have examined, over many years in my practice as a mining engineer. I hope I may live to see the property into production.

Yours very truly,
Wm. P. Blake, E. M.

Note: Wm. P. Blake was a U. S. Geologist who examined and reported favorably on the purchase of Alaska in 1867, to Sec. Seward. He also was Arizona State Geologist and Director of the Arizona School of Mines until he retired in 1908. Prof. Blake died May 21, 1909.

THE TIA JUANA GROUP

History:

The Tia Juana was discovered circa 1866 by prospectors searching for high grade silver ores. Early prospecting and development of the mine was sporadic due to the hostility of the local Indians, and later the general inaccessibility of the area was a strong deterrent to other than small scale operations covering the mining and shipping, via mule-back transportation, of high grade silver ores. For the above reasons, from its discovery, down to the present time, no attempt has been made to develop or mine the known large bodies of milling-grade ores.

The mine production is unknown but probably not more than two or three hundred tons of ore have been mined and shipped via animal transportation. The general lack of roads into the district has limited past production to high grade silver ores which are reported to have had an aggregate value of several hundred thousands of dollars. In these early operations nothing was paid for the copper or zinc contents of the ores, and generally very little for the lead which sometimes occurred in considerable quantities in the ores.

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The average assay values given for the above openings represent, in all cases excepting "Z" workings, but a fraction of the width of the vein where the samples were cut.

PROPOSED 200-TON MILL

Proposed Millsite:

(A) Location - On a portion of the Kinsley Ranch lying on the west side of the Tucson-Nogales Highway #89 at its junction with the State Highway to Arivaca, Ruby, Sasabe, etc. This point is about 35 miles north of Nogales, 1 mile north of Amado Post Office, and 2 miles northwest of the Amado siding on the Tucson-Nogales Branch of the S.P.R.R.

(B) Acreage and Title - The millsite consists of a rectangular parcel of land 1669.6' x 1043.5' containing 40 acres, more or less. The title is vested in Mr. & Mrs. Othe Kinsley, Amado, Arizona.

(C) Physical Condition - Terrain - The millsite covers a portion of a ravine scarred flat bench land which rises almost abruptly 20' above the floor of the Santa Cruz River Valley. It's average elevation is 3070' above sea level.

(E) Water - No surface water excepting in times of flash floods. All water for domestic, farming, industrial, and mining use derived from wells which tap an immense underground reservoir of water in the Santa Cruz Valley which is over 70 miles long and 4 to 8 miles wide and its underlying beds of detrisal matter, sand, and gravel are believed to be over 1000' thick, the water level at Kinsley Ranch stands at 50' below surface. A well close to the millsite is available for use. It has penetrated the water table for about 100'. Test pumping indicates a steady supply of 150 gpm for some time without any noticeable lowering of the water table.

(F) Accessibility - Ideally situated in the Santa Cruz River Valley whose main arteries of travel are U.S. Highway #89 and the Tucson-Nogales Branch of the S.P.R.R. There is an hourly bus service between Nogales and Tucson and several motor freight lines make daily runs between these cities and the S.P.R.R. maintains a two-way freight schedule daily.

Proposed Millsite (cont.)

(G) Economic Conditions - Communications - The Amado Post Office is one mile south at Kinsley Ranch and has a two-way daily mail service. The mountain States Tel. and Tel. maintains a local and long distance service at Kinsley Ranch. The Tucson Light and Power service's 2250-volt line services the power needs of the Valley. Most mining supplies are available in Tucson. Good labor is scarce but can be had.

Proposed Mill - General Information

Nothing but standard makes of equipment are to be considered in the flow sheet of the proposed mill. The preference is for Denver Equipment Company equipment, and much of the flow sheet is based on this equipment. At certain points substitution may be made if they do not interfere with efficiency.

It will be noted on the flow sheet that there is no conditioner for the lead. This is not needed with this type of lead ore which is very free of deleterious matter and readily floats after a brief conditioning in the ball mill and the lead circuit. Also, no lead thickener is provided because of the rapid rate of settling of the concentrates and the return of the water from the head filter to the mill circuit.

The ore for this proposed mill contains from 17 to over 25% metallic sulphides. It is remarkably clean and very readily floats producing a fine grade of concentrate. In a recent metallurgical test made at the Bureau of Mines, (1952) U. of Arizona, the recoveries were remarkably good, and the reagents used in these tests have been enumerated herein. The enclosed Flow-sheet was based on these tests.

Anticipated lead concentrates; Pb- 68 to 72%, Zn 0.5%, Cu-1.5%, Fe- 0.5%, Ag-55.6 ozs, Au- 0.116 ozs. The assay value of these concentrates is approximately \$291.00 per ton. The smelter returns on a ton of these concentrates will be approximately \$233.00 after all deductions and charges. These concentrates are to be shipped to the A.S.&R. smelter at El Paso, Texas, and a 50-ton carload would net about \$11,650.00.

Anticipated zinc concentrates: Zn- 60%, Pb- 0.5%, Cu- 0.3%, Fe- 0.5%, Ag- 17 ozs, Au- 0.085 ozs. The assay value of these concentrates is approximately \$184.00 per ton. The smelter returns after all deductions and charges are approximately \$133.00 per ton. The zinc concentrates are to be shipped to the A.S.&R. Smelter at Amarillo, Texas, and a 50-ton carload would net around \$6,650.00.

History:

On the Tia Juana claim, which is on the west side of the ridge, in the open cut at the mouth of the Tia Juana Tunnel, about 50 tons of lead-silver ore was taken out from the grass-roots and assayed 65 Oz Ag.-35%Pb. -And from \$5- to \$10 gold. Not even a foot was sunk below the floor of the tunnel. This work was done in 1887 by Lavery Bros. who had a lease on the property from the original owner, Dug Snyder, and was called Jumbo and Wonder claims at the time.

Lavery Bros. were run out by the Apaches and nearly lost their lives and never returned. The property was held from time to time by the common run of prospectors who did their location work but never staying on the job long enough to actually see what the vein did carry, on account of the Apaches at the time.

X Just over the East side of the ridge on the Santa Cruz claim, a 50 ft tunnel was driven all in ore which amounted to about two carloads of sulphide ore, copper and lead mostly, which gave returns of about \$60.00 per ton. This ore was later stolen and packed down from the mine on burros in 1905 and sold to ore buyers. Within 50' of the mouth of the above tunnel, a 40' shaft was sunk by Geo. Clark and Jim Peterson, who reported taking out about two tons of lead-silver ore there, that assayed in ton-lots 70-Ozs Ag.-30%Pb and sold it in Tucson where it was smelted in the little-old lead smelter run there for many years on lead-silver ores. No returns were ever paid for lead or copper values at that time. Only gold and silver values were paid for. On my examination of the property, we discovered a working on an extension of the vein at the extreme East end, evidently worked many years ago, and found several pounds of silver ore (argentite) which assayed 2100 ozs Ag per ton. Why this rich discovery was abandoned I could not understand, though it was taken from a tunnel which had about 10' underground in a white brecciated quartz. Evidently another Apache scare.

About 1889 or 1890 a small reverberatory was built down in Josephine Canyon to smelt what ores were being mined in the vicinity from Tia Juana vein on the lead-silver ores. It was abandoned, owing to trouble about the values of the ores run through it not coming near assay values, as well as on account of trouble from time to time from the Indians.

Conclusion:

After my above-mentioned examination of the property from every point of view I have come to the conclusion that the Tia Juana has every possibility and the merit to make a large producer of pay ores. When the topographical condition of the fissure is taken into consideration, there is a magnificent opportunity to explore and work the property in a most economical way, from an adit tunnel which can be run for at least 3,000' horizontally, in under many thousands of tons of ore of all grades, affording 700' vertically of backs to the Apex which is about midway of the three claims. I have every reason to believe that there will be a large tonnage of concentrating ore, as well as ores of purity to be shipped without concentration.

Water for concentration can be had from an impounding damsite in the main Josephine Gulch where an abundance of water can be had the year round. Also, in Cottonwood Canyon on the west slope where there exists a most desirable dam-site through a very narrow passage between walls 10' wide, of solid porphyry dike which crosses the main Josephine Gulch at a point not to exceed $1\frac{1}{2}$ miles from the mine.

As concentration is progressing right along, our metallurgists are now carrying on a very extensive research work in oil flotation in the concentration of complex ores. If it can be used economically enough, I have every reason to believe that it will prove of great value in the concentration of complex ores of many mines. Oil concentration will then make the Tia Juana a very valuable property.

Haulage from the mine to points of rail transportation can be carried on from the mine west by wagons or a tram down to the railroad, at Chavez Siding (Amado Siding also), where an excellent location for a concentration plant could be installed. Here, ores could be run by gravitation down through the process from an ore bin situated on one of the high mesas within 200 yds from the proposed Nogales-Tucson R.R. track, where an abundance of water can be obtained from a very shallow well near the Santa Cruz River channel.

I am very sorry and regret to the extreme, that old age has made it impossible for me to direct and superintend the development of the most attractive mine proposition that I have examined, over many years in my practice as a mining engineer. I hope I may live to see the property into production.

Yours very truly,
Wm. P. Blake, E. M.

Note: Wm. P. Blake was a U. S. Geologist who examined and reported favorably on the purchase of Alaska in 1867, to Sec. Seward. He also was Arizona State Geologist and Director of the Arizona School of Mines until he retired in 1908. Prof. Blake died May 21, 1909.

THE TIA JUANA GROUP

History:

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