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Item 4
Item 4

June 25, 1968.

MEMORANDUM TO: Locke Goldsmith

FROM: Norman H. Ursel

RE: Victor, Hoodlum, Clipper Claims,
Pershing County,
Trinity Mining District.

A Texas man, William Pearlman has expressed interest in purchasing the above claims.

Can you place on your list for early examination?

According to my notes it is an old silver bet with workings. I would like to know more about it before discussing with Pearlman in any way.

For the record Pearlman's address is:

2302 Esperson Bldg.,
Houston, Texas,
Telephone - Capital 2 7319.

Norm

Norman H. Ursel, P. Eng.

NHU/nl
cc: Mr. Donald B. Lamont.
(2) Coord - New York
- Hartford

Gray to brown shale and interbedded brown, fine-grained sandstone which generally strike N. 40° W. and dip 30° NE., are cut by a series of parallel quartz veins and veinlets, striking N. 70° W. The veins exposed on the southern knoll dip 65°–75° SW.; those on the northern knoll dip 30°–40° NE. They vary from 1 to 12 inches in thickness, and consist of vuggy, milky-white quartz.

Thin needles of stibnite up to 1 inch long are enclosed in euhedral quartz crystals up to 2 inches long. Commonly the stibnite has been oxidized to white or yellow antimony oxides. Stibnite also occurs as blebs, small pods, and single crystals in quartz and in the shale and sandstone. In the northern area pods of stibnite up to 8 inches across occur in quartz veins, and are almost completely altered to fibrous, white and yellow oxides, and less commonly to powdery to earthy white and yellow oxides. Considerable brown iron oxide is associated with the antimony oxides, and pseudomorphs of limonite after cubes of pyrite are common in the veins and adjacent wall rock.

De Soto Antimony mine

Lincoln (1923, p. 201) reported that a shipment of antimony ore was made from Antelope Spring (De Soto) mine in the Antelope (Cedar) mining district in T. 33 N., R. 31 E. The mine is developed by two shallow shafts and a trench. The mineralized vein strikes N. 30° W. and is 6 to 24 inches thick. Antimony occurs in stibnite and minor yellow and white antimony oxides.

Arabia Mining District

The Arabia mining district is in the eastern foothills of the Trinity Range, about 4 miles northwest of Oreana (see USGS Oreana 15′ topographic quadrangle). Although records are incomplete, over 500 tons of antimony metal are known to have been produced from the Arabia district.

Granodiorite containing scattered xenoliths of hornfels is exposed in this district. Locally, Tertiary rhyolite flows overlie the fine-grained granodiorite. The granodiorite is commonly altered to a white granular rock resembling aplite, the feldspar and biotite being sericitized. The hornfels is chiefly metamorphosed Jurassic(?) shale; it is grayish-black and extremely fine-grained, and consists of intergrown quartz and biotite (Knopf, 1918, p. 250).

Numerous veins of quartz and bindheimite cut the granodiorite and hornfels. In the granodiorite the veins have well-defined

walls, but are more obscure in the hornfels. Some of the veins can be traced on the surface for over 1,000 feet. The richer ore bodies contain almost solid masses of bindheimite; the leaner ore bodies contain considerable milky quartz with the bindheimite. Minor amounts of fibrous jamesonite occur with the bindheimite. The ore contains up to 80 ounces per ton of silver. The bindheimite most commonly is deep yellowish-brown, amorphous, with a high, brilliant pitchy luster, or is yellow, compact, and earthy.

The following table shows analyses of eight ore samples taken from three mines of this district:

No.	Mine	Description	Sb %	Au oz.	Ag oz.	Se %	Pb %
83	Electric	8-in. vein	1.0	Tr.	7.12	0.010	3.2
84	Electric	15-in. vein	4.16	Tr.	51.50	Tr.	7.4
85	Electric	9-in. vein	5.94	Tr.	13.14	Tr.	7.9
86	Electric	12-in. vein	Tr.	Tr.	2.88	.....	.....
87	West Group	Grab sample, dump	10.93	None	20.84	.....	19.6
88	West Group	12-in. vein	2.52	Tr.	4.24	0.022	3.5
89	Jersey	4-in. vein	2.32	Tr.	34.64	.....	1.3
90	Jersey	6-in vein, 40 foot level	1.68	Tr.	58.40	.....	.....

Electric mine

Location—Sec. 21, T. 29 N., R. 32 E.
Ownership—U. S. Smelting and Refining Co.
Base map—USGS Oreana 15′ topographic quadrangle.

The Electric mine is 1,000 feet north of the Montezuma mine, and several hundred feet west of the Jersey mine. In 1929 and 1930, 834 tons of ore averaging approximately 17 percent antimony, 25 percent lead, and 0.1 ounce of gold per ton were shipped. Shipments also were made in 1944. The mine is developed by numerous shafts, adits, trenches, and open pits. Considerable stoping has been done.

Numerous veins are seen at the Electric mine (pl. 11); all trend north and dip 35°–70° E. They are slightly arcuate, and are offset a few feet in several places by cross faults. They vary in thickness from less than an inch to over 6 feet, averaging 8 to 12 inches, and are composed principally of quartz and gouge, with minor calcite. Plumbojarosite, bindheimite, and other antimony oxides are locally abundant. Unoxidized jamesonite occurs only rarely, but a few remnants are found on the lower levels, commonly surrounded by "woody splinters" of bindheimite and powdery antimony oxides.

Jaxrace Jewel prospect

Location—Sec. 21, T. 29 N., R. 32 E.
Ownership—Harry and J. H. Green, of Lovelock.
Production—None.
Base map—USGS Oreana 15′ topographic quadrangle.

The Jaxrace Jewel claims are in the wash less than a quarter of a mile west of the Jersey mine. The claims have been developed by a 25-foot shaft and several trenches. A vein 2 to 8 inches in width, striking N. 20° W. and dipping 45° E., is exposed. It is composed of brecciated quartz and oxides, estimated to contain 5 percent antimony.

Jersey mine

Location—Sec. 21, T. 29 N., R. 32 E.
Ownership—U. S. Smelting and Refining Co.
Base map—USGS Oreana 15′ topographic quadrangle.

The Jersey mine is on a single narrow claim 1,000 feet north of the Montezuma mine, and several hundred feet east of the Electric mine. It is developed by several inclined shafts, trenches, pits, an adit, and short drifts (pl. 12).

The vein, striking N. 25°–40° E. and dipping 35°–60° E., is 6 to 24 inches wide, and consists of quartz, pitchy bindheimite, and other antimony oxides. It is similar to the veins at the Electric mine. Knopf (1918, p. 254) mentioned that a post-mineral fault offsets the vein a few feet.

Montezuma mine

Location—Sec. 21, T. 29 N., R. 32 E.
Ownership—U. S. Smelting and Refining Co.
Base map—USGS Oreana 15′ topographic quadrangle.

The Montezuma mine is 4½ miles northwest of Oreana. It has been the chief producer in the Arabia district.

In 1865, a smelter, the first operated in Nevada, was built at Oreana to treat the ore from the mine; earlier attempts to reduce it in a stamp mill had been unsuccessful. At first only silver was recovered but when completion of the Central Pacific Railway lowered transportation costs, antimony and lead also were recovered and marketed profitably. An alloy of lead and antimony was

recovered from the shaft furnace, and sold without further treatment to Selby and Co. of San Francisco. Hague (1870, p. 308) described the old smelter and smelting methods in detail. The ore from the mine contained 40 to 50 percent lead and antimony, and 60 to 80 ounces of silver per ton. In 1917, the smelter slags, which averaged 7 percent lead, 5 percent antimony, and 2 ounces of silver per ton, were shipped to the smelter at Midvale, Utah. At the same time that the slag was being shipped, tailings from the old stamp mill were uncovered; according to Knopf (1918, p. 253) they averaged 18 percent antimony, 24.7 percent lead, and 17 ounces of silver per ton.

The main vein trends east-west and dips 45°–55° N. (pl. 12). It averages 6 feet in width at the surface but narrows downward to 1 to 2 feet. Hornfels is exposed on the 176-foot level; the other workings are in granodiorite. The main ore shoot appears to have been 90 feet long and up to 20 feet wide in the pit, but pinches out a short distance below the surface. Both to the east and west, the vein apparently ends against northeast-trending, steeply southeast-dipping faults (pl. 12).

The vein consists mainly of quartz and gouge, minor calcite, and locally abundant jamesonite and antimony oxides. Only a few small pods and blebs of the jamesonite remain, most of it having been oxidized. The antimony oxide, bindheimite, occurs as earthy to pitchy pods filling the entire vein. Other antimony oxides also occur as pods and powdery masses in the vein and adjacent wall rock. Arsenopyrite is relatively common, and in places has been oxidized to scorodite. Cerussite and gypsum are fairly common.

West Group

Location ..... Sec. 20, T. 29 N., R. 32 E.
Base map ..... USGS Oreana 15′ topographic quadrangle.

The West Group of prospects is about half a mile northwest of the Electric mine. Six major veins exposed in this area have been developed by numerous adits, shafts, open cuts, and considerable stoping (pl. 13).

The wall rock usually is sericitized granodiorite, but in places it is hard, dense, brown to gray hornfels. The veins generally strike N. 15° E. to N. 15° W. and dip 45°–60° E. Several cross faults slightly offset the veins. The veins are 1 to 24 inches thick and consist principally of brecciated wall rock and varying amounts of quartz. Some of the quartz has been brecciated and

recemented by later quartz. Jamesonite occurs as blebs and small pods, except in the deeper workings, where it has been converted to bindheimite and other antimony oxides. Some of the bindheimite is resinous and hard, and some is powdery with a woodlike structure. Arsenopyrite, yellow iron oxides, and jarosite are commonly associated with the ore. These veins are similar to the other veins of the Arabia district, but show less mineralization.

Several shallow shafts, prospect pits, trenches, and adits along the ridge a thousand feet to the east explore veins trending north and dipping steeply eastward. These are similar to the other veins of the district, but are only very weakly mineralized. The wall rock is sericitized granodiorite.

Other occurrences

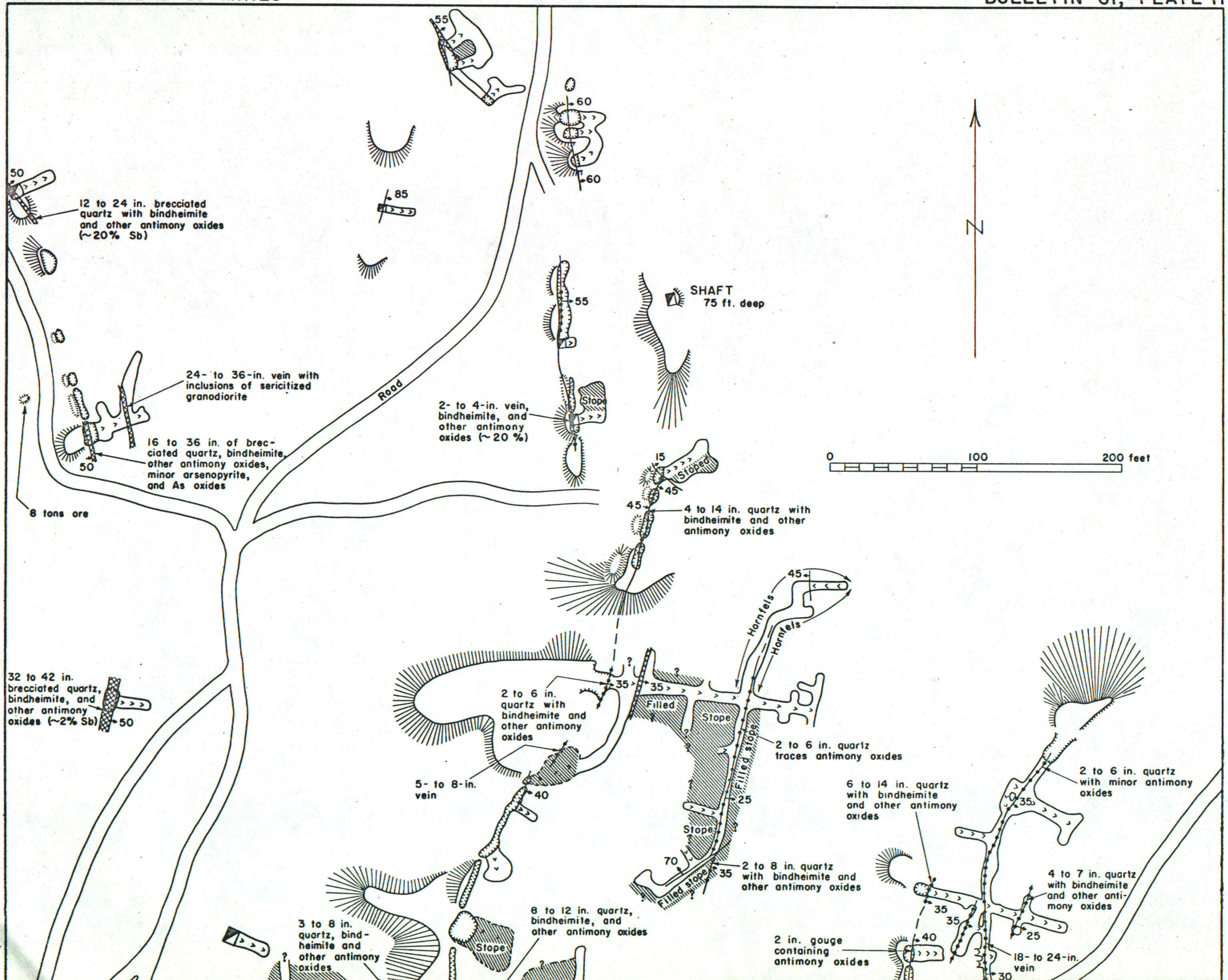
In 1917, T. E. Ludwick is reported to have mined some ore assaying 22 percent antimony, 27 percent lead, and 10 ounces of silver per ton; this was sold to P. W. Shelby of Chapman Smelting Co. In 1936, John Flynn and Al St. Clair mined 38 tons of ore averaging 15 percent antimony. In 1939, R. B. Whitman and S. E. Kimber produced five tons of ore containing 14 percent antimony. Also in 1939, Kenneth Dale and Richard Collins produced 14 tons of ore assaying 16 percent antimony. All of this production apparently was from the Arabia mining district. Whether it represents ore from mines described in the preceding section, or is from undescribed occurrences, is not known.

Antelope Springs Mining District

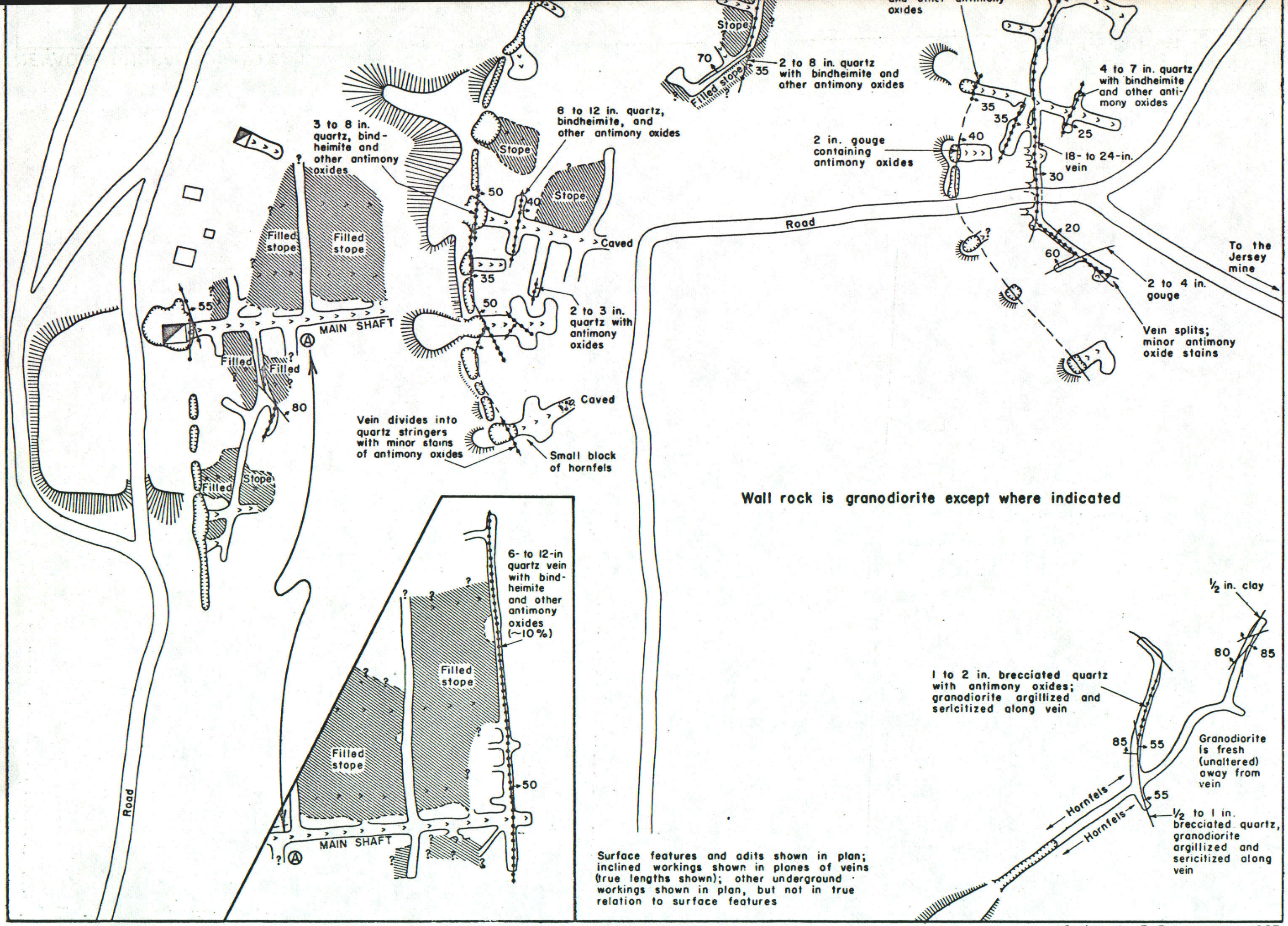
Stibnite, bindheimite, and other antimony oxides occur in several of the mercury mines of the Antelope Springs mining district in T. 26 N., R. 34 E. (see USGS Buffalo Mountain 15′ topographic quadrangle). Upper Triassic shale, siltstone, sandstone, limestone, phyllite, and slate are overlain by basalt flows and intruded by diabase dikes and volcanic plugs. The geology has been described in some detail by Wallace and others (1959), and the mines have been described by Bailey and Phoenix (1944, p. 159).

Antimony Star mine

Other names	Eagle claim.
Location	Secs. 4 and 5, T. 26 N., R. 34 E.
Ownership	George H. Johnson, Lovelock (1957).
Production	None.
Base map	USGS Buffalo Mountain 15′ topographic quadrangle.

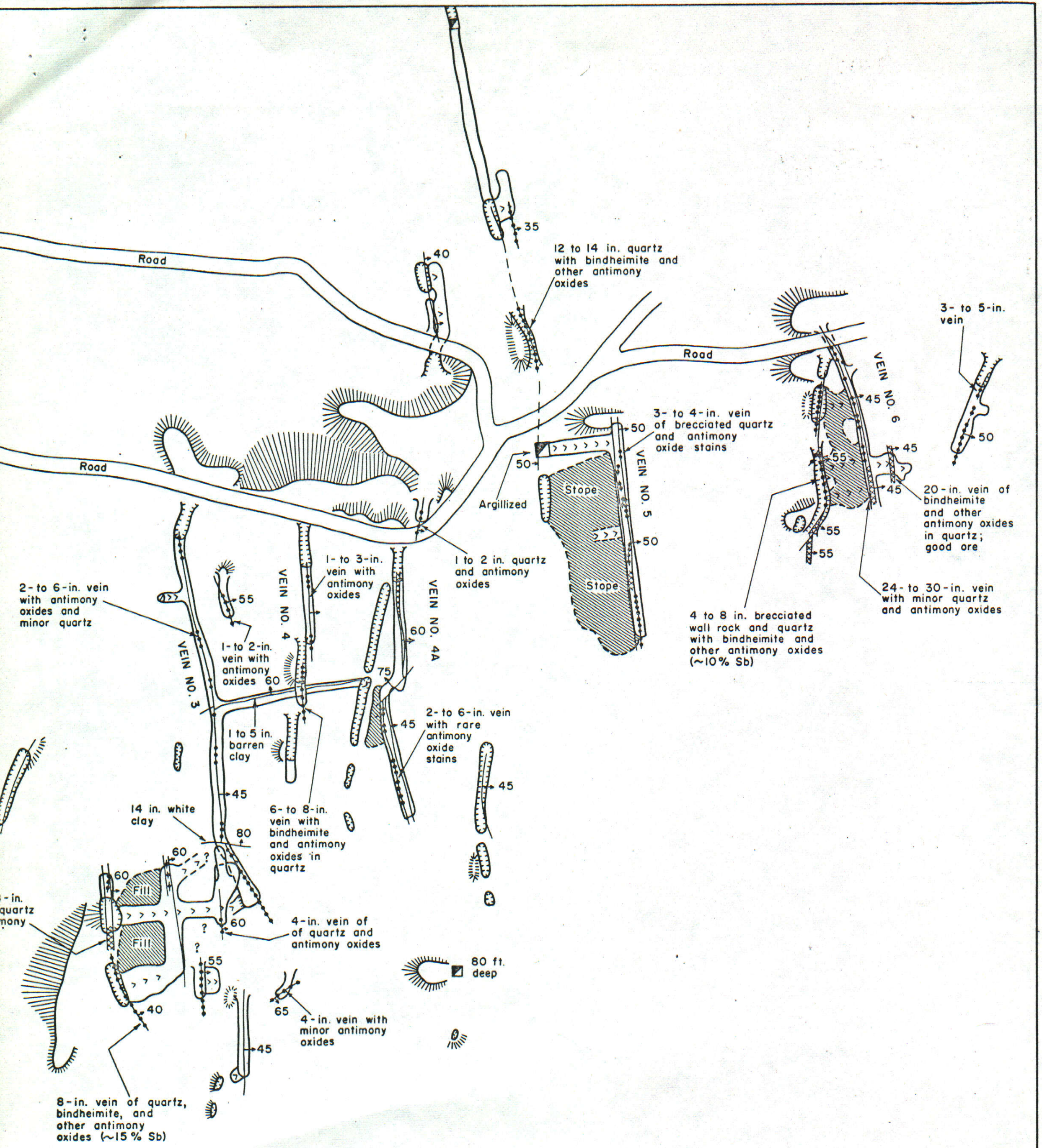

55
60
60
50
12 to 24 in. brecciated quartz with bindheimite and other antimony oxides (~20% Sb)
85
55
SHAFT
75 ft. deep
24- to 36-in. vein with inclusions of sericitized granodiorite
Road
2- to 4-in. vein, bindheimite, and other antimony oxides (~20 %)
Stope
16 to 36 in. of brecciated quartz, bindheimite, other antimony oxides, minor arsenopyrite, and As oxides
50
8 tons ore
15
Stoped
45
45
4 to 14 in. quartz with bindheimite and other antimony oxides
0
100
200 feet
N
45
Hornfels
Hornfels
32 to 42 in. brecciated quartz, bindheimite, and other antimony oxides (~2% Sb)
50
2 to 6 in. quartz with bindheimite and other antimony oxides
35
35
Filled
Stope
2 to 6 in. quartz traces antimony oxides
Filled stope
5- to 8-in. vein
40
25
Stope
70
35
2 to 8 in. quartz with bindheimite and other antimony oxides
Filled stope
6 to 14 in. quartz with bindheimite and other antimony oxides
2 to 6 in. quartz with minor antimony oxides
35
3 to 8 in. quartz, bindheimite and other antimony oxides
Stope
8 to 12 in. quartz, bindheimite, and other antimony oxides
35
35
4 to 7 in. quartz with bindheimite and other antimony oxides
25
2 in. gouge containing antimony oxides
40
18- to 24-in. vein
30

GEOLOGIC MAP OF THE ELECTRIC MINE
ARABIA MINING DISTRICT
PERSHING COUNTY, NEVADA



Surface features and adits shown in plan; inclined workings shown in planes of veins (true lengths shown); other underground workings shown in plan, but not in true relation to surface features

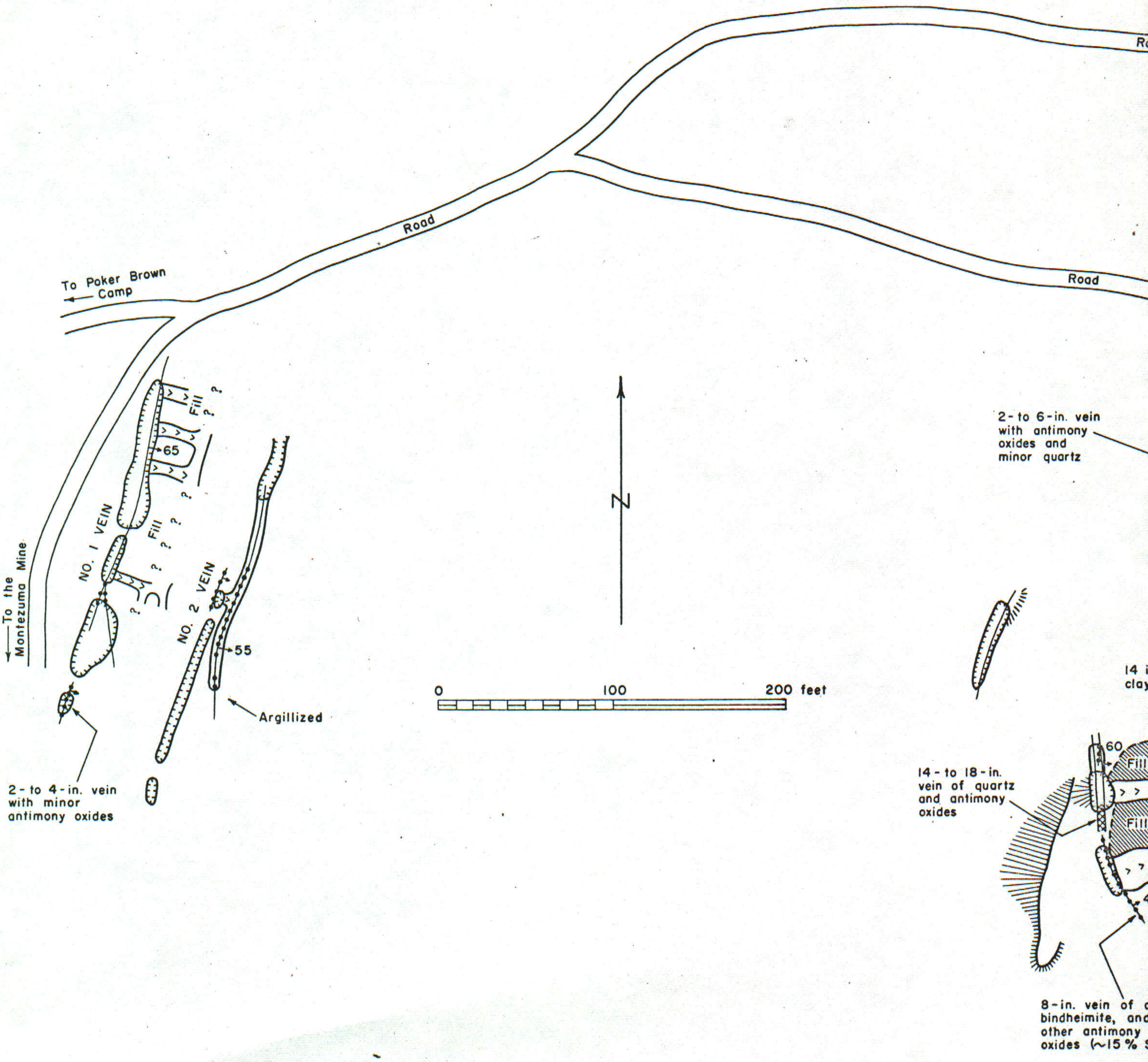
Geology by E. F. Lawrence, 1957



Geology by E. F. Lawrence, 1957

THE WEST GROUP OF WORKINGS
A MINING DISTRICT

Wall rock is granodiorite



Surface features and adits shown in plan; inclined workings shown in planes of the veins (true length shown); other workings shown in plan, but not in true relation to surface features

GEOLOGIC MAP OF THE WEST
ARABIA MINING

JKD

'P-30

Notes on Trinity District
~~Montezuma~~ / Arabia Dist.

~~T-1 Just~~

GIANELLA (1941) T-1 - Just says that jamesonite, idocrase & opal are present in Trinity Mts.

T-2 - Area is about 5 mi S of claims. Contact Meta Dept. Intensive garnetization & alteration. Some Cu present, & although scheelite wasn't visible in the rock, some was present in crushed samples

HESS, F.L. & LARSON, E.S., USGS Bull 725D 1921, p292

T-3 Describes district around Oreana known as the Montezuma Dist (Ag-Sb-Fe) ~~which is South of our claims~~. Also mentions similar ore bodies nearby in Arabia Dist.

T-4 - THESE Claims in Humbolt Co.
Covers about same ground in T-3 only in more detail. Was a smelter at Oreana (1865). Ores were almost entirely bindheimite (hyd. NH4 of Pb) Dist is 4 mi west of Oreana.
Dist predom. granodiorite w/ irregular masses of contact-metamorphosed sed rx, (hornfels)
Rhyolite caps grano & ore depts in places
Grano often altered "aplite" rock
Alt is so widespread that rock could be Qtz diorite
Sed rx chiefly meta shales
← Some hornfels blocks are burried within grano intrusive

JKD

Notes on Trinity District

T-2 40th // Surv, called Trin Mts-Montezumas Contact Metamorphic scheelite depts near Toz (St Anthony Claims)
Black Cy - (Comes out a couple of mi S. of our claims. ~~G~~ - NE 1/4 sec 17, T29N, R31E) 50 ft shaft & many pits. Sed block is 300 ft × 50-60 ft. & is highly altered.

T-3 Montezuma Mine Vein or lode Trends N 88°E & dips ≈ 40-45° N

King, C
40th // Surv.
1870, p 297-300

Vein 20' wide in places
Vein varied in quality but was free from gangue
~~&~~ Kaolinitization present
120 ft Shaft - ore pinches out at 60 ft
Ore is often hard & massive in character although sometimes friable & fiberous
Ore ≈ bindheimite
Reserves estimated at 10,000T (1870)
The Arabia dist. deposits are similar but lower grade
~~Veins~~ Numerous veins occurr //
Jersey most promising & should intersect Montezuma

T-4 Bindheimite - 2 char forms in the district; (A) deep yellowish-brown amorphous var w/ brilliant vitreous luster. (B) yellow compact earthy var. w/ divergent columnar struct & is pseudomorphic. (often contains small fibers of jamsonite)

Knopf, Adolph
USGS Bull 660
1918, p 249-55

Ore Analysis from Montezuma Mine

Sb_2O_5	51.94
PbO	40.89
Ag	.33 = 105.6 oz. Ag
Fe_2O_3	.60
Insol Res	1.66
H_2O	4.58

2KO

P-30

Notes on Trinity Dist

T-4 - Plumbojarosite, scorodite, cerussite, & gypsum also occur.
- According to R.W. Raymond in "Min Res of the States & Terr W. of the Rocky Mts for 1868 the ore contained 80 oz Ag/T & 50% Pb & Sb. Ore in Electric & Jersey (remaining ore) mines = 10% Pb & 10% Sb & 15 oz Ag & .1 oz Au / Ton
- In 1868 (Raymond) Montezuma had produced 1500 T & had 1,200 Reserv.
- In 1917 some old tailing from an unsuccessful mill were re-worked which cont. 18% Sb, 24.7% Pb & 17 oz Ag/T.
- Montezuma Mine - Pit 90' x 20 ft. w/ sump 20' below surface. Incline sunk on vein (120 ft) but ~~be~~ passed out of ore at 60 ft.
- a drift at 60 ft was run westward ~~&~~ 80-100 ft in good ore.
- In ~~19~~ 1917 working were inaccesible below 35 ft (below sump of pit.)
- Main ore body was 14 ft x 90 ft at level of pit.
- ~~Blow~~ Blout pit vein avg. 6' thick
- Yellow jasper contains considerable plumbojarosite.

Electric Vein incline 350 ft long w/ 4 levels going to a vert depth of 210 ft.
- Vein has been stoped but in 1917 1,000 T of Sb-Ag-Pb ore remained.
- Vein ranges from 1-3 ft. Mine goes into hornfels in lower levels.
- Big fault in lower levels prob only has a few feet of displ.

Jersey vein is 200 ft E of Elect & // Opened by a # of inclines & main one is 150 ft & goes 71 ft deep

JKD

P-30

TRINITY DIST

T-4 Ore occurs in bodies in this mine South of fault which occurs in pockets up to 1/4 ft in dia.
- Hornfels has been highly unfavorable for vein formation
  Author considers granodiorite favorable for exploration.
- Oxidized ore may extend to depths of 400-500 ft or to level of Humboldt River H2O table
- Prob that ~~Sulf~~ Pb & Sb sulfides will contain as much ~~Sb~~ Pb & Sb as oxide ores
- Reasonable to expect that the silver which was liberated by sulfuric acid during oxidation may be re-deposited in a "rich" enrichment zone just above level of primary sulfides.
- Because of presence of Lamprophyre ore is prob high temp (also Tourmaline)
- Some stronger veins may continue at depth.

MINING & SCI PRESS (1918) v116: 127, "Sb in Humb Co." Just says that the deepest exploration of the area is (was) 200 ft & since no sulfides had been discovered at that depth the district was worthy of further exploration.

P30

20

1907 LESTER

CAPITAL

1879

ELECTRIC

49

JEPSON

LAST CHANCE

EL VICTOR

MONTEZUMA

1794

HOODLUM

AJAX

4742

AZTEX

4742

CLIPPER

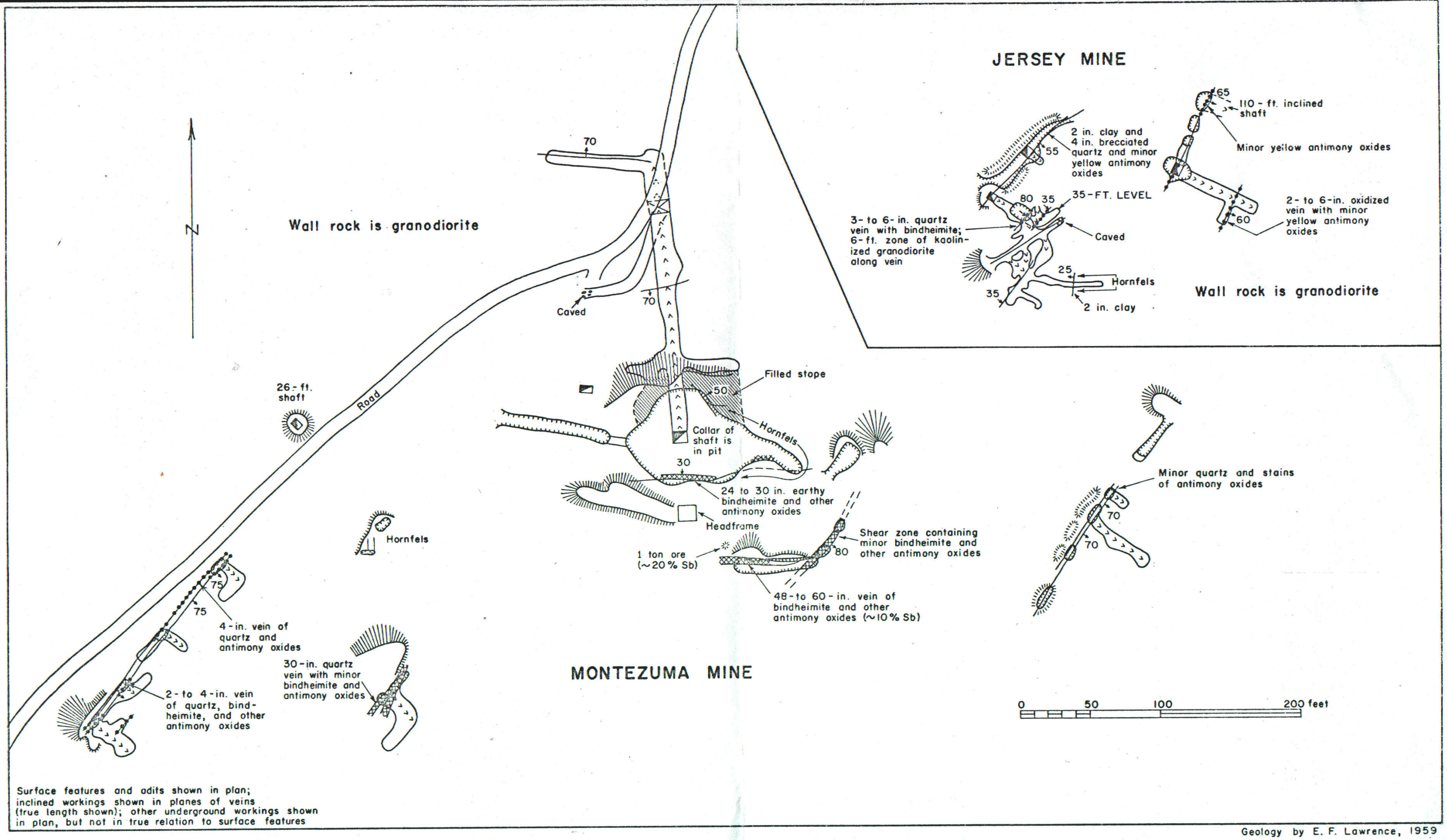
1794

1794

N

TRINITY MINING DISTRICT
PERSING COUNTY
NEVADA

T 29 N, R 32 E



Surface features and adits shown in plan; inclined workings shown in planes of veins (true length shown); other underground workings shown in plan, but not in true relation to surface features

Geology by E. F. Lawrence, 1959

GEOLOGIC MAP OF THE MONTEZUMA AND JERSEY MINES
ARABIA MINING DISTRICT
PERSHING COUNTY, NEVADA