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Docket No. ~~4~~

B-ND-4521

Date Authorization for Exam. Rec'd.

Oct 6, 1942

Date of Examination, incl

Nov 17-18 1942

Date of Report

1. Name and Address of Applicant

Name: Eureka Mining & Milling Co. Inc. (JL)

Address: P.O. Box 192, ~~Arizona~~  
Moguls, Arizona

Correspondent

A. T. Russell

P.O. Box 192

Moguls, Arizona

2. Character of Project

Development of lead-silver deposit.

3. Location of Mine

The mine is located in the Tyndall Mining district, Santa Cruz Co, Arizona. The property is a part of the Boca Flort an old Spanish <sup>land</sup> grant. The nearest rail point, Patagonia, <sup>Arizona</sup>, is 14 miles east by road from the mine. Five miles of this road is paved highway, with the balance being dirt and gravelled road with the last 1/2 miles of which is rough and quite steep. The nearest supply center is Moguls, <sup>Arizona</sup>, 27 miles south by road from the mine. Seventeen miles of this road is paved highway and the balance is dirt and gravel as noted above. The <sup>road to the</sup> mine is accessible at all seasons.

4. The applicant is a corporation composed of 6 stockholders living in Arizona and Texas. Mr. A.T. Russell is the General Manager of the corporation and the holder of 20% of the capital stock. Mr. Russell is an elderly man. As a young man he worked in the mines in Bisbee, Arizona, and later entered the oil business in Texas where ~~he~~ for many years he was a well drilling contractor. Several years ago he ~~is running intensively for many years~~ and ~~for the past several years~~ years he has resumed his interest in mining and <sup>since that time</sup> has been engaged in developing <sup>several</sup> mining properties in a small way. He has built several small ~~mining~~ <sup>mill</sup> plants. He ~~would be~~ <sup>is</sup> competent to handle a mining operation.

5. Loan Requested  
A Development Loan in the sum of \$1,000 is requested.

6. Description of Project  
A General Features

1. The applicant's mill is located upon a portion of the Boca Float land grant which is not included in the ~~the~~ <sup>mining</sup> claims held under lease. The ~~property~~ <sup>mill site</sup> is owned by the lessor of the mining claims, and permission for its use has been ~~given~~ granted to the lessee ~~of the~~ of the mining claims. The same situation obtains regarding the water in an old



shaft near the ~~side~~ mill. These agreements are verbal ~~but~~ only but because of old acquaintances with the lessor they are satisfactory to Mr. Russell. He states however that if necessary, written agreement can be obtained.

2. The applicant would comply with State compensation and safety-first statutes
3. There are no apparent legal discrepancies in the project.
4. There are no impeded right of way facilities.
5. There does not appear to be any likelihood of surface or subsurface trespass during the project. (However, see "6-A-1" above)

## B Existing Development

1. <sup>The</sup> mine is opened by tunnel, shafts and mine.
- a. Compass and tape survey was made of the accessible workings and ~~the hillside~~ <sup>the main</sup> vein cropping on the hillside
- b. Samples were cut across the vein with pick and maul and gathered in casseroles or caught in a box. Dump samples were random grabs from the tailings pile.
- c. The workings in general were in good condition except in the ~~hill tunnel~~ <sup>back of the</sup> ~~the~~ east end of the tunnel. The drift here ~~was~~ <sup>is</sup> dangerously caved and ~~was~~ blocked in the extreme end. The <sup>two</sup> shafts from the surface ~~are~~ inaccessible as well as



parts of the slopes.

#### d. General Features of the deposit etc.

The Baca Float is an old Spanish grant comprising some 9000 acres of land. The mineralization on the grant, as well as the right ~~to use~~, in connection with ~~the~~ ~~mineral development~~ exploitation, <sup>to use</sup> any necessary part of the surface and ~~the~~ water was purchased many years ago by the father of James E. Bouldin the present owner. Various tracts have been measured off into claims and groups of claims and ~~these~~ at these at times have been leased to individuals and companies for mining ~~development~~ purposes. Two such claims were leased to Mr. A.T. Russell <sup>(lease dated July 24th 1941)</sup> and Mr. Russell in turn ~~has~~ assigned his lease to the <sup>applicant company, the</sup> ~~Enrique~~ Mining and Milling Co. Inc. (Assignment of lease is dated January 27 1942). Copies of the lease and Assignment of ~~the~~ lease ~~are~~ accompany this report, which see.

The history of the district is meagre. In the vicinity of the property of the applicant company a large number of parallel quartz veins cut a coarse granite country rock. ~~Some of them near the vein strike in~~ general almost due E-W and dip north at angles from  $50^\circ$  to nearly vertical. ~~The~~ veins ~~vary in width from~~ ~~of~~ ~~about~~ inches in width to broad band quartz reefs up to 10 or 12 feet wide. ~~The veins~~ are often traceable ~~for~~ ~~down~~ of several thousand feet. ~~and a shift 140~~

## Insert A

TP

A previous lessee in 1925 operated a 25 ton <sup>flotation</sup> mill for a short time on the property. Mrs. Russell did not have any data regarding production record or performance of this plant. A sample of the tailings in the canyon assayed:

| Sample No | Oz Ag | Zn Pb |
|-----------|-------|-------|
| No 21     | 3.1   | .20   |

(return to page 5)



Mr P

The veins are often traceable on the surface for distances of several thousand feet, and they vary in width from a few inches to broad ~~10 or 12 feet~~ hard quartz reefs 10 to 12 feet in width.

TP

Most of the development in the ~~district~~ <sup>immediately neighborhood</sup> has been performed upon the narrower veins and these appear to have contributed the major part of the past production. No record of this production was available.

Mr P

~~It is said that much of the~~ <sup>red</sup> surface work was done by Mexicans <sup>who had no</sup> without authority to work on the property. They gouged the cropping to shallow depths and it is said that much high grade silver ore containing appreciable amounts of lead was thus removed from the property. ~~A shaft near the site of the present mill of the applicant company was sunk to a depth of 440 and a considerable amount of underground work was done as attested by the dump at the shaft which contains upward of 6000 tons of material. Mr. Russell did not know of any production from this shaft and apparently little or none was made.~~

~~of the present workings of the applicant company. Despite a fairly extensive amount of development the district has not made any notable amount of production. From the district~~ <sup>However</sup> operations aimed at development of high grade silver ores and ~~not~~ <sup>only</sup> little or no attention was given to the lead and (less important) ~~the~~ copper content of the ore.

See SA

A

At the present time ~~the~~ the Jefferson mine located about 1000 ft north of the property ~~workings of~~ <sup>being</sup> of the applicant company is developed and occasional shipments of lead-silver ore are being made from a depth of 200 feet. Somewhat



further north a long crosscut tunnel is ~~now~~ being driven into a ridge to cut several veins which have been productive ~~and~~ near the surface ~~at this point~~.

The two claims held under lease by the applicant company contain 3 veins known as the Eureka, Trudy and South vein. The ~~main~~ workings, and the most recent <sup>work</sup> is on the Eureka vein. Workings on the Trudy vein are only superficial <sup>and</sup> a little ~~or~~ no production has been made from it. The workings are caved or sloughed in at the surface. The south vein has been recognized at several points on the surface and is cut by the main crosscut tunnel. It has made no production and is not considered important. Following is a description of the Eureka vein and its workings.

The Eureka <sup>vein</sup> is a true fissure in the granite. It varies from a few inches to 5 feet in width. The ~~foot~~ walls ~~are~~ generally firm and well defined. The foot wall is the most regular and in places is exposed as a smooth plane. Dip varies from  $50^{\circ}$  north to nearly vertical. The vein in the deeper part of the mine is generally steeper than above. ~~As~~ the mineral is principally galena accompanied by an ~~unimportant~~ amount of chalcopirite and sphalerite. ~~and~~ Pyrite is rare. ~~and~~ There is ~~within a few feet of the surface there is~~ no evidence of oxidation except within a few feet of the surface.

(see accompanying sketches)

The principal workings consist of a cross cut tunnel cutting the Eureka and South vein, some 600 feet drifting <sup>east</sup> on the <sup>Eureka</sup> vein, ~~two~~ <sup>that tunnel level</sup> shafts (unaccessibly) which connect <sup>with the surface</sup>, and a shallow mine with a level at the bottom. (partially accessible). In addition there is some stoping has been done on the vein at ~~as~~ both above the level and in the mine.

No 1 Stope was carried to a height of 52 feet above the level on a  $60^\circ$  slope and was stoped for an average thickness of 30" and a stope length of 33 feet. ~~Approximately~~ <sup>Practically</sup> ~~of ore was shipped from here~~ <sup>samples</sup> ~~9, 11 and 12 taken in the stope face show~~ <sup>a narrow width of ore assaying 8 to 9 oz Ag and approximately 8% Pb.</sup>

all of 2 ~~carloads~~ <sup>of ore</sup> were shipped from here the settlement sheets for which are included in the supporting data accompanying the application. The present stope faces show a narrow width of ore assaying 8 to 9 oz Ag and approximately 8% Pb.

Sample No 13 indicates that only poor values reach the level here.

Both east and west of No 13 the vein contains only low grade material.

No. 2 stope was mined almost entirely by a previous operator. No record is available of the amount or grade <sup>of ore removed from here</sup> though, judging from its size, it ~~probably~~ must have produced several times ~~as much as~~ <sup>as much as</sup> No 1 stope!

The present operators mined a few tons here part of which was included with the shipment from No 1 stope and part of which went to the mill. The stope was accessible only in part. Sample No 15 shows 15" of good ore in the face near the top of the



stope.

The drift was underhand stoped, <sup>practically continuously</sup> for some 200 feet <sup>east</sup> beyond a point some 20 feet west of the mine. The floor of the drift ~~was~~ is ~~covered with water and mud~~ now filled with material which was cleaned out of the drift when the present operators undertook to re-open the mine. Mr. Russell stated that the underhand stope was in places 12 to 15 feet deep but ~~with no~~ and could not be examined because it was filled with mud and water. The ground above the drift is broken out some 10 to 20 feet above the level and ~~is~~ was dangerously covered out <sup>with many</sup> <sup>lying on the floor of the drift</sup> big blocks. Apparently the ~~one~~ occurred here was that was removed here evidently occurred in lenses similar to those which were mined in Stopes Nos. 1 and 2.

Toward the end of the accessible part of the the drift an old <sup>(marked X on accompanying sketch)</sup> stope, was mined for a distance of approximately 60 feet above the level with a raise of indeterminate length rising <sup>in the vein</sup> from its top. The stope was in bad condition and only <sup>in part</sup> difficultly accessible. Samples No 17 and 18 indicate low lead content, and good silver value in No. 17. Apparently several hundred tons <sup>of ore</sup> were mined from here. This one was mined by the former ~~and the~~ operators of the property. The surface is <sup>at</sup> some 300 feet above the level at this point. The old shaft bottoms about on the level about 50 feet east of this stope. The ground is bad here and the shaft which is inaccessible could be seen ~~to be open~~ for a considerable



distance above the level. There is no record  
of ~~any~~ <sup>any</sup> workings in this shaft. 9

R The mine below the main level has been sunk to a  
depth approximately 65 feet. The level on both  
sides of the <sup>collar of the</sup> mine had been underhand stoped  
deeply ~~here~~ and the <sup>present</sup> operations did not <sup>at first</sup> recognize  
the opening here as a mine and filled it almost  
full before they realized their mistake. The  
mine is partially cleaned out and is accessible  
~~to~~ into a stope on the east end. Here a  
short length of ore is exposed in the back.  
Samples Nos. 1, 2 and 3 show  
~~showed~~ a good width of vein with however only  
a sparse sprinkling of galena in a hard  
cherty quartz. The balance of the opening  
~~samples show~~ - a little of 30 feet of  
ore assaying as follows:

| Sample | Width | Oz Ag                | % Pb              |
|--------|-------|----------------------|-------------------|
| No 4   | 37"   | 2.6                  | 3.81              |
| No 5   | 27"   | 17.5                 | 3.81              |
| No 6   | 22"   | 11.4                 | 6.40              |
| No 7   | 21"   | 26.6                 | 4.82              |
|        |       | <u>          </u>    | <u>          </u> |
| Avg    | 27"   | (weighted Avg) 12.88 | 4.54              |

The next portion of the lower part of the mine  
and is not accessible. It is said that a  
drift and stope exist west ~~of the~~ here exposing  
the ore of about the same as that which is  
presently exposed in the east end.

The cropping of the vein has been  
mined ~~along~~ continuously ~~for a depth of~~ for  
~~10 to 12 feet~~ - a length over 100 feet and a  
depth of 10 to 12 feet and a tunnel <sup>canal</sup> was  
driven ~~in~~ on the vein from one of these  
cuts. The material exposed here in the

vein and on the dumps is oxidized and occasional pieces show blue-green staining. The main shaft on top of the hill is open to 75 feet but inaccessible. The shallow shaft lower down the hill is open to the level but the collar is not caught up and there are no ladders in the shaft.

### c Proposed Development

1. The applicant-company proposes to complete cleaning out the mine, sink the mine 35 feet and drift on a new (100 ft) level, explore the vein by drifting on the new (100 ft) level.

# 2. The applicant has spent approximately \$16,000 on the property, most of which was expended ~~for~~ in erecting and in building a small grout concentrator. Also ~~also cleaned out~~ most of the main tunnel and the mine <sup>was cleaned out</sup> and ~~also~~ <sup>was done</sup> did a small amount of mining. The company suspended <sup>operations</sup> when the water supply proved inadequate to operate the mill and <sup>at the same time</sup> the company funds were ~~not~~ depleted.

~~3. The applicant-company has installed a small grout concentrating mill on the property. Capacity of the plant is estimated at 50 tons per 24 hours. The mill was not operated for a sufficient length~~

### 3 Expected Capacity of operations

of satisfactory results from  
3a. In the event that the proposed development it is ~~planned~~ to hoped



- that sufficient ore will be blocked out to justify completing the partially constructed mill on which is now on the property. This mill is  $3\frac{1}{2}$  miles by road from the mine. Capacity of the mill is estimated at 50 tons per 24 hours and since some sorting appears to be practical a mining rate somewhat in excess of this amount per day would be required. b.c.d. It is estimated that drift, crosscut and raise development, <sup>mill</sup> be advanced at a rate of 3 feet per 8 hour shift.

e. Mill capacity is estimated at 50 tons per day.

f.g. The mill was run for only a few hours because of quick exhaustion of the supply of water from a shallow shaft and ~~the data~~ <sup>figures</sup> on mill performance are incomplete. Mr. Russell presents assay certificates showing table concentrates assays from 37.5 to 64.5% Pb. Assays of jig concentrates and mill tails also are shown. No ~~lead~~ mill feed assays are given nor tonnage estimation ~~figures~~ and therefore the figures are meaningless. It should be noted however that the ore is quite simple one to concentrate by gravity. The gangue ~~in the ore~~ is generally quite coarse and there is practically no iron sulphide, and copper and zinc occur in <sup>only</sup> small amounts. The gangue is a hard quartz with little or no clayey material.

of  
No Pb sample from the tailing, assay:  
Sample on as % Pb  
None

i. Wage scale <sup>in the district</sup> is <sup>below</sup> variable. ~~work~~ <sup>paid</sup> to date in the mine has been ~~done~~ on a contract basis and it is proposed to carry the proposed development forward ~~on~~ in this manner. ~~Then~~ Daily wage men <sup>(miners)</sup> would be paid



12

about \$6.10 per 8 hour shift.

## D. Equipment

- ① Equipment on the property at the present time is as follows:

### Mine Camp

1 - 220 Cu Ft. Ingersoll Rand Portable  
Compressor

Pipe and rail is installed in the  
present workings and sufficient  
additional amount is present to  
handle all the proposed work

Tools and forge and sharpening equipment.

1 - 16 cu ft. Oil Can

1 - Small injector type pump (in mine)

1 - Small reciprocating type single  
drum air hoist

1 - Shop Bldg.

1 - 12x20 Cottage

1 - Chevrolet 1937 Pick-Up truck

1 - Pump Jack w/rods, pipe and 3" cylinder

1 - 6 HP Type 2 Fairbanks-Morse gasoline engine

### Mill

1 - 550 gal Fuel Tank

1 - 2000 gal Water Tank

1 - 500 gal circulating water tank

2 - 7'x10' Jaw Crushers - one with broken  
toggle

1 - 1/4" Vibrating screen

1 - Set 10" x 16" McFarlane Rolls

1 - 1/2 ton Feed Hopper

2 - 24" Southwestern Hydraulic jigs

1 - Plato Full size Concentration Table

1 - 55 H.P. Primus oil Engine with clutch

5 HP

- 1 - Fairbanks Morse ~~4~~ upright gasoline engine
- 1 - small compressor and tank for starting large oil engine
- 1 - Disc feeder - not installed.
- 1 - 14" Conveyor belt <sup>From</sup> (rolls to hopper above jig).
- Line shaft, pulleys and belt <sup>to drive</sup> ~~to drive~~ above equipment.

The mill which crushes and grinds dry ~~The mill~~ is rather crudely put together and ~~would need considerable~~ <sup>a number of</sup> changes and additions would be <sup>to put it in operating condition:</sup> required. <sup>Feed</sup> aprons between units crushing and grinding units is too flat to feed by gravity, there is no fine ore bin, etc. As noted above under 6-C-3-a the mill was not run for a sufficient length of time to determine capacity, recovery, etc. No mill test has been made on the ore and it is ~~questionable~~ not ~~whether a mill or~~ certain that a roll product of plus  $1/4"$  would be sufficiently fine to free to satisfactorily free the galena. As noted above the ore appears to be one which would concentrate readily at a comparatively coarse grind and if a mill test confirms this fact the ore could be handled quite cheaply, ~~and~~ ~~and~~ only a comparatively small expenditure would be required ~~to~~ <sup>satisfactorily</sup> put the mill in ~~operating~~ condition. The present project ~~does not~~ however concerns only mine development and further consideration of the milling problem would be



## Invent B

Water

The mine makes practically no water and such water as gathers in the mine apparently comes from surface drainage during rainstorms.

The present mill on the property had counted upon a shaft on the hill near the mill for its water supply. The ~~shaft~~ <sup>water</sup> in this shaft which is 160 feet deep was exhausted after several hours mill run.

It is stated that a near-by <sup>deep</sup> shaft will provide an <sup>adequate</sup> ~~plentiful~~ supply of water for mill <sup>purposes</sup> and in support of this statement it is pointed out that ~~the~~ earlier operators <sup>of</sup> operated on the property pumped water from this shaft ~~on~~ 2 miles over a ridge to their mill and that when this same mill was moved to another property in the district the pipe line was relaid and the shaft water was again used <sup>for</sup> for milling. The shaft is 440 feet deep and contains considerable underground workings as indicated by the size of dump which is estimated to contain upwards of 6000 tons of material. Incidentally, Mr. Russell did not know of any production having been made from this shaft.

NOTE: There are no ladders or timber in the shaft but it open and in fairly good condition to a depth of 100 feet where a bullhead is placed. Water level is not known but is said to stand a short distance below the bullhead.

(return to page 14)



contingent upon <sup>the</sup> development of sufficient  
one to justify it. 14

3. Not Applicable

4. Equipment required at the mine  
would be as follows:

- 2 Rock Drills and mounting
- Drill Steel
- 2 Ore Buckets
- Misc. Tools.

5. No mill equipment <sup>is</sup> recommended under  
the present project.

6. Shop and tool house at present located  
at the portal of the ~~main~~ <sup>main</sup> tunnel  
is adequate. No other mine  
housing facilities would be required.

7. Housing for several men is available  
at the camp near the mill. This is  
on property of the ~~lessor~~ belonging to  
the lessor but not included in the  
applicant-company lease. A  
small <sup>one-room</sup> cottage is located at the  
portal of the main tunnel and  
another ~~should~~ would be required  
here.

8. ~~Applicant can~~ No other equip-  
ment expenditures would be re-  
quired

E Cost Estimates

a. ~~Mining Cost is estimated at 50¢ per~~  
~~ton.~~ There is no performance  
record upon which to base

see 14A  
insert  
B

a mining cost estimate. The vein is narrow and the ore shoots are ~~likely~~ to be small and disconnected. Some light sorting out of cherty barren fragments will be ~~practical~~ <sup>possible</sup> it is not possible to ~~estimate the~~ <sup>estimate the</sup> ~~the~~ <sup>the</sup> ~~quora ratio~~ <sup>of such sorting</sup> ~~can be~~ <sup>at the</sup> present time. Probably ~~the~~ cost for ~~mining and~~ ~~developing~~ ~~per ton of ore~~ ~~milled or shipped~~ would be around \$ ~~2.00~~ per ton of ore milled or shipped.

b.c.d. Cost of drifting, crosscutting and raising is estimated at \$1.50 per foot

e. Cost for sinking ~~the~~ the 1 1/2 compartment winze an additional 35 feet is estimated at \$25.00 per foot.

f. See ~~also~~ "e" above.

g. Milling cost is estimated at 1.50 per ton.

h. Trucking cost to railroad at Patagonia is estimated at \$1.50 per ton

i. Freight rate from Patagonia to smelter at El Paso is \$2.65 per ton for ore not exceeding \$20.00 per ton in value. Rate for concentrates will ~~be~~ <sup>be</sup> several dollars ~~considerably~~ higher depending upon the value and ~~weight~~ <sup>value</sup> of the concentrates, unknown at present.

j. Smelter Treatment charge for treatment is 3.50 per ton ~~less with a 10~~ for ore not exceeding 15.00 per ton <sup>in value</sup> and increases at 10% of the value in excess of \$15.00 per ton to a maximum charge of 5.00 per ton.



K. Royalty is 15% of net smelter for crude ore shipped and 10% of net proceeds for ore milled on the property or sold to custom ~~plants~~ milling plants.

L The mine will not require timber for stoping, except for an occasion stull for platforms, and for chutes. Oregon Pine costs approximately \$70 per ton delivered at the mine in small lots.

M. Total Mining cost is estimated at 3.00 per ton  
 Development 1.00  
 Milling 1.50  
 General .50

M. ~~small operating~~ Total costs <sup>per ton</sup> cannot be estimated closely in the present state of development of the property. They would probably be about as follows:

|             |      |
|-------------|------|
| Mining      | 3.00 |
| Development | 1.00 |
| Milling     | 1.50 |
| General     | .50  |
| Total       | 6.00 |

3 Approximate monthly premium on Pay Roll for State compensation is estimated at \$200.00

F Ore Reserves

1. The condition of the mine together with the lack of information regarding past operations makes <sup>an</sup> estimate of probable ore in the various blocks difficult. In Block A (see section) the surface was

stopping

2. One of the above grade realized a smelter net of \$11.20 or, crediting lead bonus, \$14.12 net per ton to the shipper. ~~Profit per ton would be as follows: be as follows~~
3. Profit per ton would be about as follows



Net Value at Rail head \$ 14.20

|      |                               |             |      |
|------|-------------------------------|-------------|------|
| Less | Royalty 15%                   | 2.10        |      |
|      | Mining, development & general | 4.50        |      |
|      | Trucking                      | 1.50        |      |
|      |                               | <u>8.10</u> | 8.10 |
|      | Profit                        |             | 6.10 |

~~If milled on the property the profits per ton would work out about as follows: 85% recovery of silver and lead in a 60% lead concentrate is considered a reasonable assumption.~~

If milled on the property a recovery of 85% of the silver and lead in a 60% lead concentrate would seem to be a reasonable assumption (Note comments above under "G-C-3 e.f.g.") and profit per ton would work out about as follows:

|                           |   |           |
|---------------------------|---|-----------|
| Value of lead Concentrate |   | \$ 75     |
| Lead -                    | $(60\% - 1.5) \times 2000 \times 90 \times (6.5¢ - 1.5¢) =$ | 53.75     |
| Silver Bonus              | $1053 \text{ lb.} @ 2.75¢ =$                                | 28.96     |
| Silver                    | $76 \times 85 \times 9.4 \times .95 \times 69¢ =$           | 84.55     |
|                           | Smelter payment for metals                                  | 167.26    |
| Less:                     | Treatment 5.00  |           |
|                           | Freight 4.50 (est)  |           |
|                           | Trucking <u>1.50</u>  | 11.00     |
|                           | Net Value at Mine   | \$ 156.26 |

Value per ton of ore:  $\frac{156.26}{9.4 \text{ (Return ore)}} = \$ 16.62$

Less

Mining Development and general

#

4.50

Miller

1.10

6.00

Estimated Profit per ton \$10.62

4. The sinking of the mine ~~an~~ additional 35 ft and drifting 250 ft ~~to a new level~~ from the bottom would expose a block of ground 250 in length by 100 ft in height less a small amount <sup>which has been</sup> of underhand stopes on the main level. The ~~small area~~ previous stoping distribution in the mine with ~~some ore~~ now in sight as represented by samples Nos. 4, 5, 6, and 7 together with the fact of the underhand stoping in the drift main drift <sup>above</sup> suggests that the block will furnish a fair amount of ore. Because of the irregular occurrence of the ore in small shoots, and the impossibility of taking samples in the ~~last drift floor~~ underhand stopes on the drift floor and in the ~~last~~ drift <sup>next from</sup> at the present bottom of the mine it is not possible to calculate the tonnage of ore ~~now grading~~ which would be made available by the proposed work. However, 1000 tons, possibly more would ~~not~~ seem to be ~~an~~ a reasonable expectation. Grade and width ought to be at least equal to that shown by the samples noted above or: (average)

|       |                               |      |
|-------|-------------------------------|------|
| width | O <sub>2</sub> O <sub>2</sub> | % Pb |
| 27"   | 12.88                         | 4.53 |

In appraising anticipated ~~ore~~ values, it should be noted that work in the past was hampered by lack of working capital and



consequently there was a tendency to mine the zones to a pinch ~~or~~ to leaner ore, or both. It is possible therefore that <sup>upon resumption of work</sup> over-all values might be somewhat higher than those shown by the sampling.

## 7. Employment

- A. Work has been suspended upon the property because of lack of funds.
- B. The project contemplates employing a crew of 8 men as follows:
  - 1 Boss
  - 2 Miners
  - 2 Muckers
  - 2 Hoist
  - 1 Tram

---

 Total 8
- C. The project contemplates working 2 shifts 6 days per week

## 8. Objections to Project

- A. There are no local or regional objections to the project.
- B. Project would produce an appreciable amount of lead, rate of output <sup>not</sup> at present calculable.

## 9. Time Schedule

- A. Project should be completed within 6 months time.
- B. Operations would be carried on the year-round.
- C. With favorable results from the proposed development the project ought to repay the loan within 18 months.

10. Estimated Cost of Project

## A. Development

|   |             |
|---|-------------|
| Recondition and clean out mine              | 1000        |
| Sink mine 35 feet @ $25^{\text{00}}$ per ft | 875         |
| Drift 250 feet @ $15^{\text{00}}$ per foot  | 3750        |
| Raise 100 feet @ $12^{\text{00}}$ per foot  | <u>1200</u> |

6825

## B. Equipment

|                                 |           |
|---------------------------------|-----------|
| 2 Rock Drills                   | \$400     |
| Rock Drill Mountings, hose etc. | 300       |
| Drill Steel                     | 50        |
| 2 Ore Buckets                   | <u>50</u> |

800

## C. Construction

1 Cottage at mine

300

## D. General Expense

|   |         |
|---|---------|
| 1. Supervision 6 mos @ $200^{\text{00}}$ per mt.  | 1200    |
| 2 Insurance                                       | 100 100 |
| 3 Compensation - included in development cost     |         |
| 4 Interest during project<br>\$10,000, 6 mos @ 6% | 300     |

## E. Contingencies

Freight, auto expense, engineering, unforeseen

475

10,000

## 11. Nature and Sources of Revenue

A. 1. Property would become selfsustaining during <sup>the</sup> project if development results favorably.

2. Second (Class A) loan is not contemplated

3. Property should be self sustaining



the  
at end of 18 months.

22  
This page not finished

4. General Remarks see  
See below

### Comments of Supervising Engineer

The vein is narrow. The ore shoots are small and irregularly placed and the ore is of only medium grade. Success of the enterprise would depend upon the frequency of occurrence of shoots or lenses of ore in the area to be developed. Offsetting an admittedly uncertain outlook in this regard is the fact that a certain production of lead is assured from a number of ~~for~~ present faces in the mine. Without financial help of some sort this lead will not reach the market. It is with this latter thought in mind and, further, the belief that the chances for developing an appreciable tonnage of <sup>lead</sup> ore are reasonably good that this engineer recommends that a development loan be granted.

It seems probable that milling of the ore, probably at intermittent intervals depending upon the rate of supply of ore, and water, would be practical.

Mr. P. The quantity of water available in the <sup>old</sup> shaft <sup>near the mill</sup> is not known but, judging from the fact that it supported small milling operations in the past, it ~~ought to be~~ <sup>is</sup> sufficient for continuous milling on a small ~~scale~~ <sup>scale</sup>, or on a larger scale at intermittent intervals. Intermittent milling (providing mill test supports the belief that the mill now on the property will make a satisfactory recovery) is practical in view of the simple nature of the flow sheet and the type of the ore, i.e. ~~coarse dry grinding of a non-slurrying material containing a single sulphide - galena - in coarse form.~~

coarse dry grinding and gravity concentration of a non-slurrying material containing a single sulphide, bulk sulphide (galena) in coarse form.



DOCKET B-ND-4321

EUREKA MINE

Santa Cruz Co., Arizona

Scale: 1" = 50'

Dec. 3, 1942

VERTICAL SECTION

EUREKA VEIN

Samples: ☐

Stoped: ☐

Ore: ☐

Proposed Work: ☐

surface workings  
surface workings

Block A

A-Stop

No. 2 Stope  
No. 2 Stope

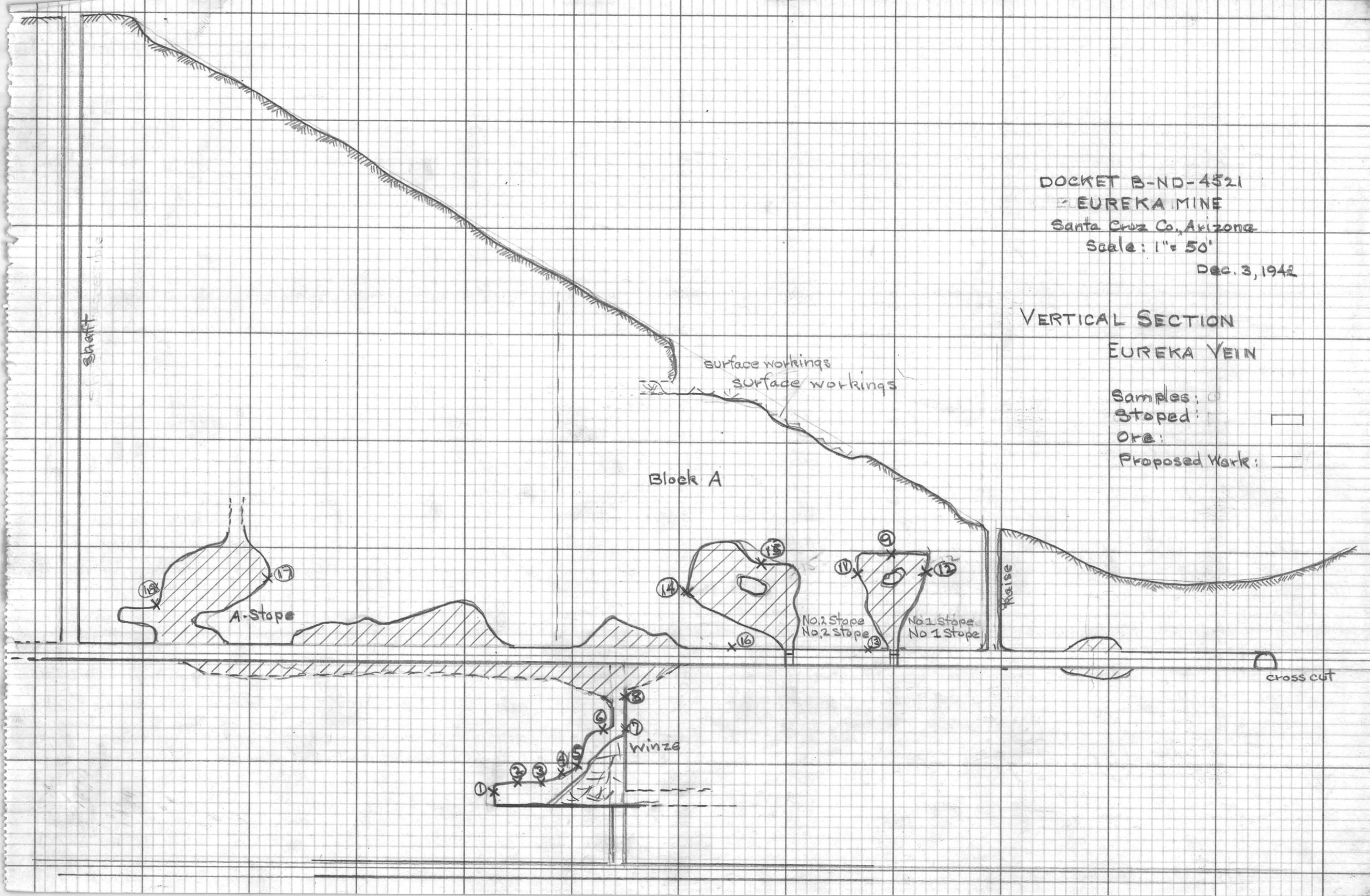
No. 1 Stope  
No. 1 Stope

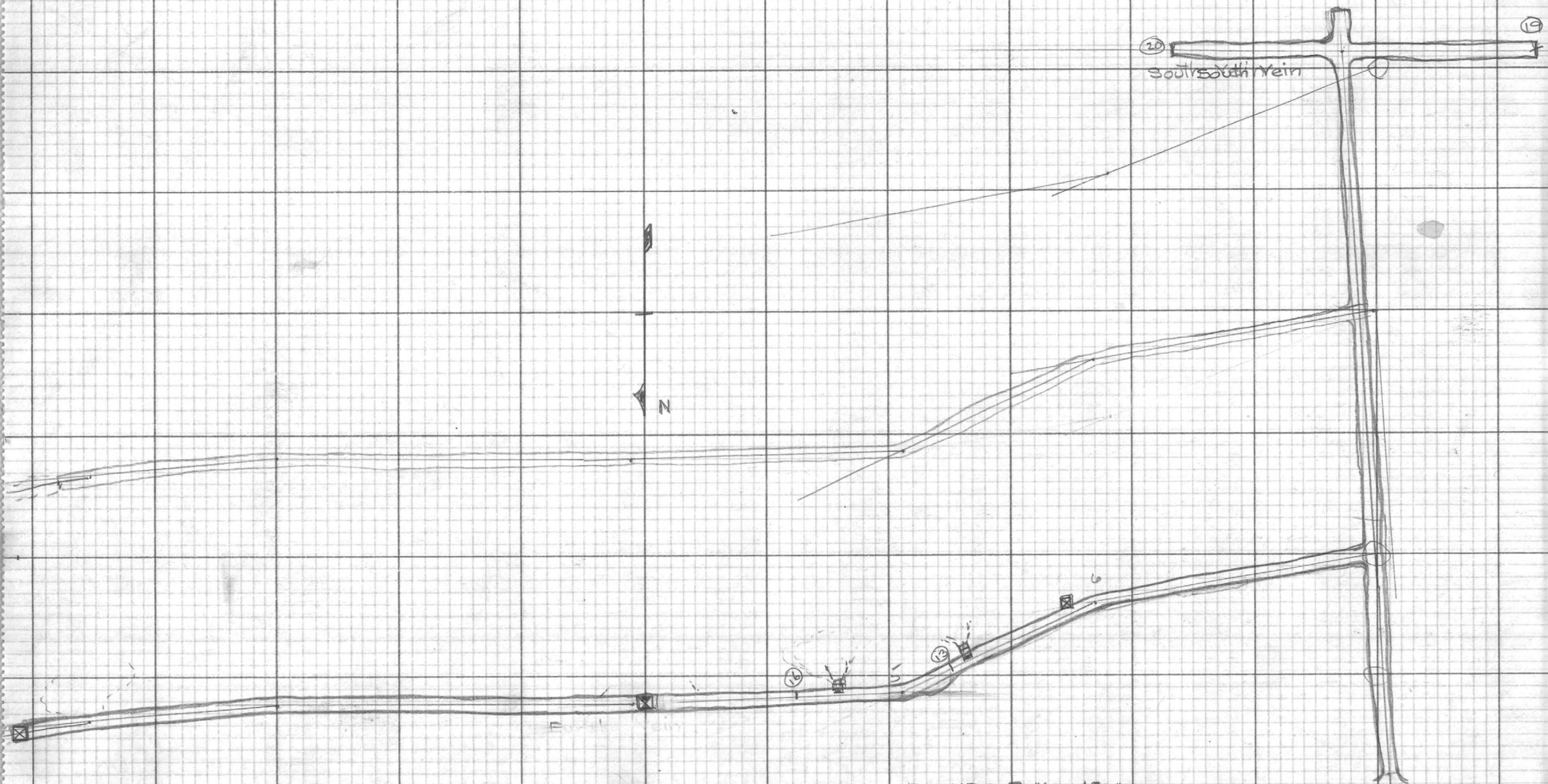
Winze

cross cut

shaft

Raise





DOCKET B-ND-4521  
PLAN - TUNNEL LEVEL  
Scale: 1" = 50'  
Vein  
Sample ③