MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE

Contract No. _____ Docket No. 6815

Application
- [x] Denied
- [ ] Withdrawn

Contract
- [ ] Terminated - Not Certified
- [ ] Terminated - Certified
- [ ] Cancelled
- [ ] Royalty Agreement

The records contained in this file are marked (x) and arranged in this order:

Folder No. 1:

Left Side

- [ ] Royalty Audits
- [ ] Certification of Discovery
- [ ] Closing Letter
- [ ] Cost Audits
- [ ] Termination Notice or Agreement
- [ ] Recision Notice
- [ ] Assignment of Contract
- [ ] Contract Amendments
- [ ] Contract with all exhibits and annexes
- [x] Owner's Consent to Lien and Subordination Agreement
- [x] Application and Attachments

Right Side

- [ ] Project Summary (final)
- [ ] Work Completed Analysis (final)

All other material filed in chronological order including the following reports if checked:

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Final Field Team Report (Tab)
- [ ] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [ ] Operator's monthly reports and all attachments
- [x] On-site Exam. Report (Tab) 9/70
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports

- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

- [ ] Field Team Semiannual Report for Certified Project
- [ ] Field Team Interim Reports
- [ ] Operator's Monthly Reports with Transmittal, Narrative and Maps

Folders No. _____: Maps (Use pocket folder or envelope)

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty Material

72195-65

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 200

COPY
O. M. E.
RECEIVED
APR 13 1970
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April 10, 1970

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III, OME

Subject: Application for financial assistance to explore for gold and silver in the Lincoln Mine, Yavapai County, Arizona.

Transmitted herewith is an application from Neaves Petroleum Developments to explore for gold and silver in the Lincoln Mine, Yavapai County, Arizona.

The applicant's geological consultant, Mr. James C. Marsh, delivered the application to this office and we discussed the various merits of the project in the light of our budget restrictions. Mr. Marsh was informed that the proposed continuance of the South Camp Tunnel for an additional 2,000 feet would not likely be recommended principally because of its high total cost, plus the high cost of an access road to the project area.

The company has included a second, or alternate program consisting of diamond drilling. Their estimated total cost of this project is $58,764.31. However, some of the costs listed appear out of line, especially for geology and supervision by Mr. March and a project engineer. The drilling program may be warranted with some changes in cost.

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

February 13, 1970

Office of Minerals Exploration
Field Office, Region III
U. S. Geological Survey
Denver Federal Center, Building 25
Denver, Colorado 80225

Attention: Mr. J. William Hasler

Gentlemen:

We are submitting herewith an application for an OME loan to conduct exploration at the Lincoln Mine, Yavapai County, Arizona. Complete geologic reports, maps, smelter returns, cost estimates and all other data as required by OME are enclosed.

It is our preference that the form of exploration consist of extending the South Camp Tunnel an additional 2,000 feet for the purpose of encountering the main ore shoot previously mined from the surface to a vertical depth of approximately 300 feet. The advantages of this procedure are fully described in the recommendation attached and made by James A. Marsh, who will supervise exploration work.

A second choice of exploration would consist of drilling four slant holes from the surface to explore the downward continuation of the main ore shoot below the proposed tunnel. If the drilling of these holes is successful in encountering the ore shoot at depth, it will then be necessary to extend the South Camp Tunnel which is our first preference. It would appear from all factual data that this drilling program is unrealistic and a waste of time and money.

Your prompt consideration of this application will be appreciated.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN:ds

MME Form 40
(Revised Nov. 68)

Budget Bureau No. 42-R1368
Approval expires Dec. 1971

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

Pursuant to Public Law 85—701 (72 Stat. 700; 30 U.S.C. 641)

NAME OF APPLICANT *(Full legal name and mailing address as they should appear on contract if one is executed.)*	APPLICANT DO NOT USE THIS BLOCK
JOS. R. NEAVES, JR., DBA: NEAVES PETROLEUM DEVELOPMENTS 239 South Beverly Drive Beverly Hills, California 90212	DOCKET NUMBER 6815 6815 DATE RECEIVED 4-13-70 REGION III DIVISION CODE

BUSINESS ORGANIZATION *(Check one)*	LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE NAME ADDRESS TITLE
INDIVIDUAL [X] CORPORATION [ ] PARTNERSHIP [ ] OTHER *(Specify)* [ ]	Not Applicable
STATE IN WHICH FIRM IS ORGANIZED California	

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE	PROPERTY NAME	LOCATION COUNTY	STATE
Gold and Silver	LINCOLN MINE,	YAVAPAI COUNTY,	ARIZONA
ESTIMATED COST OF PROJECT Drilling max. Tunnelling max. $293.593.65/ $58.764.31			

GENERAL INSTRUCTIONS

Before filling out this application, please read the *OME Regulations for Obtaining Federal Assistance in Financing Explorations for Mineral Reserves* (30 CFR Chap. II). To assure prompt action, your application must provide all applicable material and information specified on the back of this application form. Avoid unnecessary correspondence and delays by submitting complete and accurate information. *Please submit two copies of this application and all accompanying papers* except as otherwise noted. Place your name and address on each sheet. Each item of information, maps, and reports required as a part of this application is described on the back of this form. Identify each attached statement by the item number to which it applies. If an item does not apply to your application, show the item number on your statement and after it write "not applicable." Maps or sketches should be used to supplement narrative descriptions of the property location and boundaries in item 2, existing mine workings and geology in item 3, and the proposed exploration work in item 5. When this information is not too complex, all of it may be shown on one map or sketch. All documents and other attachments submitted as a part of this application, except those in item 3(g) which you mark to be returned, become the property of the Government and will not be returned to the applicant. Send true copies, *not originals*, of leases, contracts, and other documents which are an essential part of your business records. *File this application with the Department of the Interior, U.S. Geological Survey, Office of Minerals Exploration, Washington, D. C., 20242, or with the nearest OME Field Office.*

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief, and that he would not ordinarily undertake the proposed exploration under current conditions and circumstances at his sole expense.

February 10, 1970
DATED

BY *(Signature)*

TITLE

A wilfully false statement or certification to any Department or Agency of the United States Government is a criminal offense.
U. S. Code, Title 18, Sec. 1001.

INFORMATION REQUIRED WITH THIS APPLICATION

1. Financial Eligibility:

(a) Submit evidence of efforts made within 90 days preceding the filing of this application to obtain credit from your bank of account and at least one other banking institution or other private source of credit. Such evidence shall include (1) true copies of your letters to credit sources which show date of loan request, amount and terms requested, and proposed use of loan funds and (2) true copies of replies from credit sources. If the loan was offered under terms which you consider unreasonable, state why you consider them so.

(b) List names and addresses of affiliated, parent, or controlling companies or organizations and state extent and nature of their interest.

(c) State how you propose to furnish your share of the cost of the exploration work.

2. Applicant's Rights in Land:

(a) State your interest in the land and mineral rights, whether owner, lessee, purchaser under contract, or other. If you are not the owner, submit one true copy of the lease, contract, or other document (with address of owner) under which you control the property. Describe all liens, mortgages, or other encumbrances on the land and state book and page number and official place where recorded.

(b) State the legal description (section, township, and range; metes and bounds; patent number of claims) of the land upon which you wish to explore and all adjacent land which you own or control. Describe any part of the land or workings which should not be subject to Government royalty and liens. If the land consists of unpatented claims, state book and page number for each recorded location notice, including amended locations, and official place where recorded. State all the names by which you know the property.

(c) For all land or mineral rights encumbered or not owned, submit five copies of Lien and Subordination Agreements signed by owner on MME Form 52. If the agreements cannot be obtained, state reasons and whether you can furnish a performance bond.

3. Physical Description:

(a) Describe in detail and illustrate with maps or sketches all mining or exploration operations which you know have been or are being conducted upon the land. Include existing mine workings and all production facilities.

(b) State your interest, if any, in operations described in (a)

(c) State, if you know, the past and current production, supporting your statement with copies of settlement sheets, mine records, or published data if available.

(d) Describe known ore reserves, giving quantities and grades.

(e) Describe by narrative and maps or sketches the geologic features of the property, including ore minerals, geologic formations if known, and type of deposit (vein, bedded, etc.).

(f) If you have sampled the area you propose to explore, show where the samples were taken, describe sampling methods used, and provide copies of assay certificates. State your reasons for expecting to find ore.

(g) Send with your application at least *two* copies of all geologic or engineering reports, assay maps, or technologic information which you have, indicating whether you require their return.

4. Accessibility of Property:

(a) To aid the OME representative who may examine the property state name, address, and telephone number of person who will meet him; give directions for reaching the property; and describe accessibility of property and of any mine workings.

(b) Name the shipping and supply points and state the distances to the property.

5. Exploration Work:

(a) Describe fully the proposed exploration work giving individual footages and sizes of openings *for each item of work.* Use narrative, maps, plans, and sections as necessary. Show location of the proposed work as related to geologic features such as veins, ore-bearing beds, contacts of rock formations, etc. Show also the relation of the proposed work to any existing mine workings and to *land boundaries* or to the closest identifiable corner.

(b) If an access road must be built, show the proposed location on the property map and state the length, type and construction methods proposed.

(c) If an OME contract is executed, state how soon thereafter work would be started and finished. State your anticipated average daily or monthly rate of progress for each type of work.

6. Experience:

State your operating experience and background to conduct this exploration work and also that of the person who will supervise the work.

7. Estimate of Costs:

Furnish detailed estimates of the necessary costs for time and materials *for each item of the work proposed in 5(a)* under the headings listed below with a total for each heading and the estimated total cost of the work. Costs for any work to be performed by an independent contractor should be listed separately under category (a) below. Costs for any work that is not to be performed by an independent contractor should be listed under categories (b) through (g).

(a) Independent contracts. State the total cost of any proposed independent contract for all or any part of the work, and the number of units and the unit cost for each type of work, such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, or per cubic yard of material moved. Cost estimates should be supported by bids from three contractors if possible. (*Note*—If none of the work is to be contracted, write "none" after this item.)

(b) Personal services. The cost of supervision, engineering and geological services, outside consultants, and labor should be itemized by numbers and classes of employees; rates of wages, salaries or fees; and periods of employment. State whether these services are available.

(c) Operating materials and supplies. List items of material and supplies giving quantity and price of each. Include under this heading power, water, and fuel, and units of equipment and tools costing less than $50 each.

(d) Operating equipment. List items of equipment and tools costing $50 or more per unit. Give specifications and indicate how each item is to be acquired—i. e., rented, purchased or provided by the applicant. If rented or purchased, state the estimated rental or purchase price. If furnished by the applicant, state condition and present fair market value.

(e) Initial rehabilitation and repairs. Describe the type and the cost of *initial* rehabilitation or repair of existing buildings, fixtures, installations (exclusive of mine workings), and movable operating equipment now owned by the applicant which will be used in the exploration work.

(f) New buildings, fixtures, installations. Describe each building, fixed improvement, and installation to be purchased, constructed, or installed for the exploration work, stating specifications and cost including labor, materials, and supervision.

(g) Miscellaneous. Describe the type and estimate the cost of repairs and maintenance of the operating equipment listed in 7(d). Do not repeat initial repairs listed in 7(e). Show also the costs of analytical work, accounting, workmen's compensation and employees' liability insurance, payroll taxes, and other required costs that do not fall within the previous categories. [*Note*—The Government will not contribute to costs incurred before the date of the contract, or to costs of or incident to: (1) acquiring; using, or possessing land and any existing improvements, facilities, buildings, installations, and appurtenances, or the depreciation and depletion thereof; (2) general overhead, corporate management, interest and taxes (other than payroll and sales taxes); (3) insurance (other than employees' liability insurance); and (4) damages to persons or property (other than authorized repair to or replacement of equipment or other property used in the work).]

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

ANSWERS TO INFORMATION REQUIRED WITH APPLICATION

1. Financial Eligibility:

(a) (1) True copies of letters to two banking institutions attached.

(2) True copies of replies from above two credit sources attached.

(b) None.

(c) From my own funds, available and on hand.

2. Applicant's Rights in Land:

(a) Applicant is Lessee. One true copy of lease is attached.

(b) The property known as the Lincoln Mine is situated in the Pine Grove Mining District (better known as the Crown King District), Yavapai County, Arizona lying in portions of Sections 1, 2, 11 and 12 of Township 10 North, Range 1 West, consisting of those certain patented mining claims described as: "Rough Rider", "Yellow Jacket", "Quien Sabe", "Norma", "S.P. Carlin" and "Alene" patented lode mining claims and the "Admiral" and "Valley View" patented Millsite claims, designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, pages 535 - 545 inclusive, in the office of the Yavapai County Recorder; and "Watsonville" Lode Mining Claim in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof is of record in Book 77 of Deeds, page 523, of Yavapai County Recorder.

(c) Five copies of Lien and Subordination Agreement MME Form 52, signed by owner, are attached.

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239 South Beverly Drive
Beverly Hills, California

3. Physical Description:

(a) Exploration, development and mining at the Lincoln Mine commenced in 1905. During the first few years of operation, ore was treated in a two stamp mill and a little later a five stamp mill. The ore milled was an oxidized ore running entirely in gold having a value in excess of one ounce per ton. Recoveries are reported to have been poor, with several dollars going into the tailings. In the spring of 1906, the five stamp mill was dismantled and an up-to-date fifteen stamp mill put in, 1000 lb. stamps, two Wilfley-tables and three Fruevanners, which gave a very good concentration, and tailings from this mill run as a rule from $1.20 to $1.20 per ton. ?

The mine was closed down on the first of November, 1907, owing to the closing down of the Humbolt Smelter forty miles distant, which owed the company for the October shipments.

A limited amount of mining was conducted during 1910 - 1911 - 1912 and 1918.

(b) No interest in the above-described operation by Applicant.

(c) Summary of Production

1905

210.0 tons ore shipped @ $51.20	=	$10,764.00
87.1 tons concentrate shipped @ $58.40	=	5,445.00
Bullion shipped		4,589.00

1906

182.5 tons of ore @ $67.40	=	$12,320.00
126.2 tons concentrate @ $80.60	=	10,290.00
173.7 tons run of mine @ $26.00	=	4,517.00
Bullion		2,419.00

1907

265.4 tons of ore @ $101.20	=	$26,875.00
45.5 tons concentrate @ $99.80	=	4,535.00
Bullion		12,867.00

For Over The Three Years

657.9 tons of ore @ $75.90	=	$49,959.00
258.8 tons concentrate @ $78.10	=	20,270.00
173.7 tons run of mine @ $26.00	=	19,875.00

1090.4 tons shipped - Total Product $94,621.21

Values are gross per ton.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

3. (continued)

The shipments during 1910 are in all probability not complete and are therefore not detailed. It is probable that they amounted to about -- $9,000.00.

Over the period that a record of tonnage milled was recorded, as shown on bullion return sheets, shows that 1031 tons milled plated $6,961.54 and concentrates during the same period were $3,777.50, equivalent to:

saved per ton on plates	$6.75
saved per ton on concentrates	$3.66
total per ton milled	$10.40.

At a saving of 70% shows milling ore to have run $15.00 per ton.

This record is complete and covers all production during the time that the mine was operated except when Lincoln himself operated years before in a very small way.

For further details, tables 1 - 2 - 3 and 4 in the accompanying report. Also enclosed separate smelter sheets.

(d) Indicated ore reserves are estimated to be approximately 116,000 tons (see longitudinal section in accompanying report). Grade of ore is estimated to be approximately: Gold 2.0 oz; silver 20.00 oz., and copper 5%.

(e) The claims of the Lincoln group run about N. 25° E., for 6,000 ft. and cover the contact between Yavapai Schist on the west and the Bradshaw Granite on the east. In the vicinity of the Lincoln Mine there is a very well-defined northeasterly trend and parallelism of the schist-granite contact and intrusive dikes.

The ore occurs in a vein which in general follows the schistosity of the enclosing rock but may cut across it in places. Throughout its length, the vein may be divided into three segments. In the first segment, through the S. P. Carlin Claim, the vein is accompanied by a narrow belt of light-colored sericite schist, which is flanked by massive, dark-colored hornblende rocks on either side. The soft disintegrated schist shows on the west side of mouth of the south camp tunnel for only two or three feet in width.

The second segment, which is the Quien Sabe Lode, shows a widening of the schist belt, a condition which is probably responsible for the Lincoln ore shoot.

The first three or four hundred feet of the third segment is about

3. (continued)

the same as the first; that is, eight or ten feet of decomposed, soft schist.

The Lincoln vein (main ore producer) is from six to fifteen feet wide, having a strike of about N. 25° E., and a dip of 65° to 70° N.W. The foot wall is well-defined and regular as it is the original fissure. Along the foot wall is the main deposition of quartz and sulfides and parallel to it, other and narrower bands of quartz separated by gouge or clayey material. The "paying" width of the vein was probably the width over-all, of the quartz part of it, and varied from a few inches to three or four feet, with the probability that in places the values extend still further toward the hanging wall side.

Mineralization of gold and silver values are carried in the quartz and were originally along with the sulfides, the complete oxidization of which gives the typical "iron ore" color and the vugy, porous structure of the quartz.

Ore minerals occurring within the fissure are pyrite, chalcopyrite and tetrahedrite. A considerable part of the value of the ore is in silver, which is probably carried by the tetrahedrite.

(f) All of the underground workings are caved and cannot be sampled; however, samples taken from dumps and ore piles near various workings showed very good values in gold, silver and copper.

(g) Two copies of geologic reports are enclosed. Return not required.

4. <u>Accessibility of Property</u>:

(a) The property is situated in the Pine Grove Mining District (better known as the Crown King District), Yavapai County, Arizona, It is approximately two-and-one-half miles from Crown King and is reached by a road which was constructed prior to 1905.

The South Camp Tunnel, proposed for extension, is about one-and-one-quarter miles from Crown King.

Mr. James A. Marsh will meet the OME representative. Mr. Marsh's office address is: 239 South Beverly Drive, Beverly Hills, California 90212, telephone Area Code 213 - 274-5275; his residence address is: 11005 Wrightwood Place, North Hollywood, California 91604, telephone Area Code 213 - 877-4777.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

4. (continued)

(b) Shipping and supply points: Mayer, Arizona, 30 miles; or Prescott, Arizona, 50 miles.

5. Exploration Work:

(a) First Choice:

George's recommendation (1927).

It is proposed to continue the South Camp Tunnel (shown on the accompanying longitudinal section) for an additional 2,000 feet along the vein which should encounter the downward continuation of the major ore shoot mined from the surface to a maximum depth of about 300 ft. The section shows this ore shoot to have a length of about 400 feet, and indications that it may be 600 feet long. Reports state that mining widths varied from 6 feet to 20 feet. This ore shoot was stoped out for the entire length, except for an intermediate section of 40 feet long which is also marked "ore" on the section. The ore shoot has a rake of about 45° N. and hence was not cut on the lower level until the drift had been extended about 160 feet from the shaft. It is then stoped overhead for a distance of 175 feet. The north face of this stope was probably the working face when work was stopped by the failure of the Humbolt Smelter.

The proposed South Camp Tunnel will cut the above-described ore shoot at a vertical depth of 200 feet, a point at which stoping terminated. However, this will give a stoping back of about 300 feet above the proposed tunnel.

Advantages of the proposed tunnel over shaft plan and/or drilling are as follows:

(1) The driving of this tunnel would explore at depth a distance of about 1800 feet, for other possible ore shoots, having maximum stoping backs of 400 feet. This could not be accomplished by a shaft, and drilling for these possible ore shoots would be most costly.

(2) One of these ore shoots has probably been encountered by the existing drift, and a sample of ore on the dump by the caved portal assayed 2.5 oz. Au., 8 oz. Ag., and 3% Cu.

(3) The lower cost of operating by way of tunnel and much lower cost of ore extraction.

(4) No hoisting of ore or waste.

(5) No cost of pumping water.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

5. (continued)

(a) Second Choice:

Second choice of exploration would consist of drilling four slant holes to explore for the downward continuation of the major ore shoot mined from the surface to a maximum depth of about 300 feet. However, if the drilling of these holes did ~~not~~ find the ore shoot at depth, it would then be necessary to drive the South Camp Tunnel a distance of 2,000 feet to extract this ore. Therefore, the drilling program would appear to be unrealistic and only a waste of time and money. and if they didn't?

On a two-shift basis, this drilling program can be completed in about three months.

Existing road to proposed drilling site is presently narrow and washed out in many places, and will require rebuilding in order to have proper access for water and service trucks, as well as the drilling equipment. About two-and-one-half miles of road would have to be rebuilt which would take about one month by using a D-9 Cat.

(b) Existing road to proposed tunnel location is presently too narrow and washed out in many places and will require rebuilding in order to have proper access for trucks, etc. Approximately one-and-one-quarter miles of road construction to tunnel site will be necessary, which can be accomplished by D-9 Cat.

(c) If an OME contract is executed, work can be started in a few days. To complete the road will require about 260 hours of D-9 Cat. work. On a two-shift basis, this can be completed in about 15 days. Driving 2,000 ft. of drift can be completed in about six months.

6. Experience:

The applicant, Jos. R. Neaves, Jr., doing business as Neaves Petroleum Developments, has operated in the exploration of natural resources, including oil and gas, continuously since 1950 in California, Nevada, Utah, Arizona, Texas, Nebraska, Wyoming and Montana.

The entire mining operation is under the direct supervision and control of nationally known economic geologist, Mr. James A. Marsh -- graduate Geologic Engineer, University of Utah; Masters Degree from Stanford University in Economic Geology and Mining Engineering -- Chief Executive Officer of Neaves Petroleum Developments, Mining Division. Mr. Marsh's mining backgound

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

6. (continued)

covers 22 years as Chief Geologist for Union Pacific Railroad Company (1946 - 1968); wartime service under leave of absence from Kennecott at U. S. Bureau of Mines, District Engineer for Utah and Wyoming (1942 - 1945); Chief Geologist for Kennecott Corp., Bingham, Utah (1928 - 1942).

Field personnel are under the supervision of William H. Berge, who has been my field superintendent continuously since 1952.

I own outright, without any encumbrances, two mining type drill rigs and all necessary field support equipment, including bulldozers, tractors, trucks, trailers, etc.

7. Estimates of Costs:

See attachments.

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

BOYLES BROS. DRILLING COMPANY

BID ON DRIVING A 6' x 8' DRIFT 2,000 FEET

LINCOLN MINE, YAVAPAI COUNTY, ARIZONA

SIX MONTHS TO COMPLETE

7. (a)

1 - Mobilization and Demobilization	$ 15,575.00	
2 - Excavate 2000' - 6' x 8' Drift-raw @ $109.44/Ft.	218,880.00	
3 - Drift - Sets - $403.75/MBF - (Est. 25% - 2000') 500' 82 Sets Timber @ $255.57/Set	21,298.00	
4 - Rock Bolts (Est. 500' - @ $2.34/L.F.)	1,170.00	
5 - Water Problems - (Est.)	1,000.00	
6 - Miscellaneous Labor	1,000.00	
7 - Miscellaneous Material	1,000.00	
Total		$259,923.00
Road Construction:		
Approximately one mile from Crown King to South Portal		10,455.78
GRAND TOTAL (Direct - with Road Construction)		$270,378.78
Total (Items 7. (b) to (g))		23.214.87
GRAND TOTAL - ENTIRE PROJECT		$293,593.65

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
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BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

7. (b) Personal Services:

Supervision - By J. A. Marsh - 6 Months @ $1000.00/Mo.	$6,000.00	1323#/mo.
J. A. Marsh - Hotel - Meals	650.00	
J. A. Marsh - Travel Expense	1,300.00	
Project Engineer - 6 Months @ $800.00/Mo.	4,800.00	
" " 6 Months Living Expense	2,800.00	1360#/mo
" " 6 Months Travel Expense	600.00	
Total Personal Services		$16,150.00

(c) Operating Materials and Supplies:

1000 Poly Sample Bags @ $0.12	$ 120.00	
8 Prospecting Picks @ $8.50	68.00	?
2 Underground Mining Lights - with Charging Units	456.00	
1 Brunton Compass and Case	63.75	?
4 Metallic Tapes @ $17.50	70.00	?
Miscellaneous Field Office Supplies - Drafting - etc.	500.00	
Total Operating Materials and Supplies		1,277.75

(d) Operating Equipment:

1 - Jeep Rental - 6 Months @ $300.00/Mo.	$1,800.00	1,800.00

(e) Initial Rehabilitation and Repairs: None

(f) New Buildings, Fixtures, Installations: None

(continued)

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

7. (g) Miscellaneous:

Assaying - 500 Samples for Au.-Ag.-Cu. @ $3.50	$1,750.00	
Freight on Samples to Union Assay, Salt Lake City	200.00	
Accounting - 6 Months @ $50.00/Mo.	300.00	
Payroll Taxes - 6 Months @ $153.62/Mo.	921.72	
Underground Workmen's Compensation - 6 Months @ $135.90/Mo.	815.40	
Total Miscellaneous		$ 3,987.12
GRAND TOTAL - Items 7. (b) to (g)		$23,214.87

NEAVES PETROLEUM DEVELOPMENTS

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CRestview 4-5275

McFARLAND AND HULLINGER

BID ON DRIVING A 6' x 8' DRIFT 2,000 FEET

LINCOLN MINE, YAVAPAI COUNTY, ARIZONA

SIX MONTHS TO COMPLETE

7. (a)

1 - Mobilization and Demobilization	$ 7,500.00	
2 - Rehabilitization - Present Drift	2,000.00	
3 - Excavate 2000' - 6' x 8' Drift - raw @ $90.00/Ft.	180,000.00	
4 - Rock Bolts (Est.)	1,100.70	
5 - Drift - Sets - @ $405.50/MBF (Est. 25% - 2000') 500' 82 Sets Timber @ $256.68/Set	21,048.00	
Total		$211,648.70
Road Construction:		
Approximately one mile from Crown King to South Portal		10,455.78
GRAND TOTAL (Direct - with Road Construction)		$222,104.48
Total (Items 7. (b) to (g))		23,214.87
GRAND TOTAL - ENTIRE PROJECT		$245,319.35

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

7. (b) Personal Services:

Supervision - By J. A. Marsh - 6 Months @ $1000.00/Mo.	$6,000.00	
J. A. Marsh - Hotel - Meals	650.00	
J. A. Marsh - Travel Expense	1,300.00	
Project Engineer - 6 Months @ $800.00/Mo.	4,800.00	
" " 6 Months Living Expense	2,800.00	
" " 6 Months Travel Expense	600.00	
Total Personal Services		$16,150.00

(c) Operating Materials and Supplies:

1000 Poly Sample Bags @ $0.12	$ 120.00	
8 Prospecting Picks @ $8.50	68.00	
2 Underground Mining Lights - with Charging Units	456.00	
1 Brunton Compass and Case	63.75	
4 Metallic Tapes @ $17.50	70.00	
Miscellaneous Field Office Supplies - Drafting - etc.	500.00	
Total Operating Materials and Supplies		1,277.75

(d) Operating Equipment:

1 - Jeep Rental - 6 Months @ $300.00/Mo.	$1,800.00	1,800.00

(e) Initial Rehabilitation and Repairs: None

(f) New Buildings, Fixtures, Installations: None

(continued)

7. (g) Miscellaneous:

Assaying - 500 Samples for Au.-Ag.-Cu. @ $3.50	$1,750.00	
Freight on Samples to Union Assay, Salt Lake City	200.00	
Accounting - 6 Months @ $50.00/Mo.	300.00	
Payroll Taxes - 6 Months @ $153.62/Mo.	921.72	
Underground Workmen's Compensation - 6 Months @ $135.90/Mo.	815.40	
Total Miscellaneous		$ 3,987.12
GRAND TOTAL - Items 7. (b) to (g)		$23,214.87

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

CENTENNIAL DEVELOPMENT COMPANY

BID ON DRIVING A 6' x 8'DRIFT 2,000 FEET

LINCOLN MINE, YAVAPAI COUNTY, ARIZONA

SIX MONTHS TO COMPLETE

7. (a)

1 - Mobilization and Demobilization	$ 25,000.00	
Portal Open Cut:		
Excavation - Dirt & Caved Rock 192 c.y. @ $5.00	960.00	
Excavation in Rock 50 c.y. @ $10.00	500.00	
Timber - 3 Sets @ 253.20/Set	759.60	
Existing Tunnel (467')		
Slabbing to Size Where Required - 80 c.y. @ $1.25	100.00	
Advance from Face:		
1 - Excavate 2000' 6' x 8' Drift - raw @ $70.00/Ft.	140,000.00	
2 - Rock Bolts (Est.)	1,140.00	
3 - Drift - Sets $400.00/MBF (Est. 25%-2000') 500' 82 Sets @ $253.20/Set	20,762.40	
Total		$189,222.00
Road Construction:		
Approximately one mile from Crown King to South Portal		10,455.78
GRAND TOTAL (Direct with Road Construction)		$199,677.78
Total (Itesm 7. (b) to (g))		23,214.87
GRAND TOTAL ENTIRE PROJECT		$222,892.65

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

7. (b) Personal Services:

Supervision - By J. A. Marsh - 6 Months @ $1000.00/Mo.	$6,000.00	
J. A. Marsh - Hotel - Meals	650.00	
J. A. Marsh - Travel Expense	1,300.00	
Project Engineer - 6 Months @ $800.00/Mo.	4,800.00	
" " 6 Months Living Expense	2,800.00	
" " 6 Months Travel Expense	600.00	
Total Personal Services		$16,150.00

(c) Operating Materials and Supplies:

1000 Poly Sample Bags @ $0.12	$ 120.00	
8 Prospecting Picks @ $8.50	68.00	
2 Underground Mining Lights - with Charging Units	456.00	
1 Brunton Compass and Case	63.75	
4 Metallic Tapes @ $17.50	70.00	
Miscellaneous Field Office Supplies - Drafting - etc.	500.00	
Total Operating Materials and Supplies		1,277.75

(d) Operating Equipment:

1 - Jeep Rental - 6 Months @ $300.00/Mo.	$1,800.00	1,800.00

(e) Initial Rehabilitation and Repairs: None

(f) New Buildings, Fixtures, Installations: None

(continued)

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

7. (g) Miscellaneous:

Assaying - 500 Samples for Au.-Ag.-Cu. @ $3.50	$1,750.00	
Freight on Samples to Union Assay, Salt Lake City	200.00	
Accounting - 6 Months @ $50.00/Mo.	300.00	
Payroll Taxes - 6 Months @ $153.62/Mo.	921.72	
Underground Workmen's Compensation - 6 Months @ $135.90/Mo.	815.40	
Total Miscellaneous		$ 3,987.12
GRAND TOTAL - Items 7. (b) to (g)		$23,214.87

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

BOYLES BROS. DRILLING COMPANY - BID

PROPOSED DRILLING PROGRAM

LINCOLN MINE, YAVAPAI COUNTY, ARIZONA

THREE MONTHS TO COMPLETE

FOUR HOLES -- 2800 FEET

7. (a)

1 - Mobilization and Demobilization	$ 300.00	
2 - Preparation 3 Drill Sites @ $300.00/Site	900.00	
40' NC or Collar Pipe @ $11.10/Ft.	444.00	
2760' NX @ $11.10/Ft.	30,636.00	
64 Hours Cementing (Est.) Plus Cement @ $32.00/Hr.	2,500.00	
Water Truck Rental @ $225.00/Mo. - Plus $0.20/Mile - 3 Months	1,400.00	
Cost of Water	500.00	
Road Construction to First Drill Site	8,600.00	
Total		$45,280.00

(b) Personal Services:

Supervision - By J. A. Marsh - 3 Months @ $1,000.00/Mo.	3,000.00	
" J. A. Marsh - Hotel - Meals	350.00	1267$/mo
" J. A. Marsh - Travel Expense	450.00	
Project Engineer - 3 Months @ $800.00/Mo.	2,400.00	
" " 3 Months Living Expense	1,500.00	
" " 3 Months Travel Expense	300.00	
Total Personal Expenses		8,000.00

(c) Operating Materials and Supplies:

500 Poly Sample Bags @ $0.12	$ 60.00	
350 Core Boxes @ $1.00/each	350.00	
2 - Prospecting Picks @ $8.50/each	17.00	
1 - Brunton Compass, with Case	63.75	
2 - Metallic Tapes @ $17.50/each	35.00	
1 - Hand Lense	10.00	
Miscellaneous Office Supplies, Drafting, etc.	300.00	
Total Operating Materials and Supplies		$ 835.75

(d) Operating Equipment:

1 - 4-Wheel Jeep (Rental) 3 Months @ $300.00/Mo.	900.00	900.00

(g) Miscellaneous:

Assaying - 700 Samples for Au.-Ag.-Cu. @ $3.50/Sample	2,450.00	
Freight on Samples to Union Assay, Salt Lake City	280.00	
Accounting - 3 Months @ $50.00/Mo.	150.00	
Payroll Taxes - 3 Months @ $153.62/Mo.	460.86	
Workmen's Compensation - 3 Months @ $135.90/Mo.	407.70	
Total Miscellaneous		3,748.56
GRAND TOTAL		$58,764.31

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

E. J. LONGYEAR COMPANY - BID

PROPOSED DRILLING PROGRAM

LINCOLN MINE, YAVAPAI COUNTY, ARIZONA

THREE MONTHS TO COMPLETE

FOUR HOLES -- 2800 FEET

7. (a)

1 - Mobilization and Demobilization	$ 525.00	
2 - Preparation 4 Drill Sites @ $300.00/Site	1,200.00	
40' 4⅛ - 4½" Collar Pipe @ $6.45/Ft.	258.00	
960 Feet ND @ $9.65/Ft.	9,264.00	
1000 Feet ND @ $9.95/Ft.	9,950.00	
800 Feet ND @ $10.45/Ft.	8,360.00	
64 Hours Cementing (Est.) Plus Cement @ $19.20/Hr.	1,700.00	
Water Truck Rental @ $275.00/Mo. - Plus $0.15/Mile - 3 Months	1,400.00	
Cost of Water	500.00	
Road Construction to Drill Area	8,600.00	
Total		$41,757.00

(b) Personal Services:

Supervision - By J. A. Marsh - 3 Months @ $1,000.00/Mo.	3,000.00	
" J. A. Marsh - Hotel - Meals	350.00	
" J. A. Marsh - Travel Expense	450.00	
Project Engineer - 3 Months @ $800.00/Mo.	2,400.00	
" " 3 Months Living Expense	1,500.00	
" " 3 Months Travel Expense	300.00	
Total Personal Expenses		8,000.00

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

(c) Operating Materials and Supplies:

500 Poly Sample Bags @ $0.12	$ 60.00	
350 Core Boxes @ $1.00/each	350.00	
2 - Prospecting Picks @ $8.50/each	17.00	
1 - Brunton Compass, with Case	63.75	
2 - Metallic Tapes @ $17.50/each	35.00	
1 - Hand Lense	10.00	
Miscellaneous Office Supplies, Drafting, etc.	300.00	
Total Operating Materials and Supplies		$ 835.75

(d) Operating Equipment:

1 - 4-Wheel Jeep (Rental) 3 Months @ $300.00/Mo.	900.00	900.00

(g) Miscellaneous:

Assaying - 700 Samples for Au.-Ag.-Cu. @ $3.50/Sample	2,450.00	
Freight on Samples to Union Assay, Salt Lake City	280.00	
Accounting - 3 Months @ $50.00/Mo.	150.00	
Payroll Taxes - 3 Months @ $153.62/Mo.	460.86	
Workmen's Compensation - 3 Months @ $135.90/Mo.	407.70	
Total Miscellaneous		3,748.56
GRAND TOTAL		$55,241.31

1. (a) (1)

California Texas

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

February 6, 1970

United California Bank
9601 Wilshire Boulevard
Beverly Hills, California 90210

Attention: Mr. Frank Miller, Vice President

Gentlemen:

I hold by lease sixteen patented mining claims and patented mill site in Yavapai County, Arizona, known as the Lincoln Mine, on which I have sufficient professional data that indicates the prospect of a possible commercial ore property.

It is planned to explore this property by approximately 2,000 feet of tunnelling, the cost of which is estimated to be approximately $335,000.00.

After reviewing available data on this prospect and my acceptance of its worthiness, I respectfully request your bank to consider loaning me the sum of $335,000.00, without endorsement, so that I may continue further exploration work on this prospect. I request the terms of this loan to be essentially those under the Exploration Assistance Program of the United States Department of The Interior, Geological Survey, Office of Minerals Exploration, of which I assume your office has detailed information.

Sincerely,

NEAVES PETROLEUM DEVELOPMENTS

Jos R Neaves Jr

JOS. R. NEAVES, JR.

JRN:ds

OIL PROPERTIES

LEASED DRILLED OPERATED

California Texas

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

February 6, 1970

Cathay Bank of Los Angeles
777 North Broadway
Los Angeles, California 90012

Attention: Mr. G. A. Schnieders

Gentlemen:

I hold by lease sixteen patented mining claims and patented mill site in Yavapai County, Arizona, known as the Lincoln Mine, on which I have sufficient professional data that indicates the prospect of a possible commercial ore property.

It is planned to explore this property by approximately 2,000 feet of tunnelling, the cost of which is estimated to be approximately $335,000.00.

After reviewing available data on this prospect and my acceptance of its worthiness, I respectfully request your bank to consider loaning me the sum of $335,000.00, without endorsement, so that I may continue further exploration work on this prospect. I request the terms of this loan to be essentially those under the Exploration Assistance Program of the United States Department of The Interior, Geological Survey, Office of Minerals Exploration, of which I assume your office has detailed information.

Sincerely,

NEAVES PETROLEUM DEVELOPMENTS

Jos. R. Neaves Jr.

JOS. R. NEAVES, JR.

JRN:ds

1. (a) (2)

UNITED CALIFORNIA BANK

BEVERLY HILLS OFFICE · BEVERLY HILLS, CALIFORNIA 90213

FRANK C. MILLER VICE PRESIDENT

February 10, 1970

Mr. Joseph R. Neaves, Jr.
Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Dear Mr. Neaves:

This will acknowledge receipt of your application for a loan of $335,000 for cost of exploring your property known as the Lincoln Mine in Yavapai County, Arizona.

Due to present money market conditions we will not be in a position to provide the credit which you have requested.

Sincerely,

Frank C. Miller

Frank C. Miller
Vice President

1. (a) (2)

CATHAY BANK OF LOS ANGELES
777 NORTH BROADWAY
LOS ANGELES, CALIFORNIA 90012

GILBERT A. SCHNIEDERS
EXECUTIVE VICE PRESIDENT

February 10th. 1970

Neaves Petroleum Developments
Chamber of Commerce Building
239 South Beverly Drive
Beverly Hills, California 90212

Gentlemen:

This is in reply to your letter of February 6th. 1970 requesting a loan of $335,000.00 to be made in accordance with the Exploration Assistance Program of the U. S. Department of Interior.

Your request has been considered by our Loan Committee and I have been instructed to inform you of our decision to decline the loan. Our bank is not in a position to extend such a credit.

We appreciate having had the opportunity to consider your application and we wish you every success in the venture.

Sincerely,

G A Schnieders

G. A. Schnieders

GAS/jc

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS 1/

To the United States of America:

That certain land in the County of Yavapai, State of Arizona, described as follows: 2/ The ROUGH RIDER, YELLOW JACKET, QUIEN SABE, NORMA, S. P. CARLIN and ALENE patented lode mining claims and the ADMIRAL and VALLEY VIEW patented millsite claims, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, Pages 535-545, inclusive, in the office of the Yavapai County Recorder. WATSONVILLE lode mining claim, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof, is recorded in Book 77 of Deeds, Pages 523, in the office of Yavapai County Recorder.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Neaves Petroleum Developments 3/

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same. 4/

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

A Quiet Title Action is pending which is in the final, Interrogatory, stage.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 29th day of January, 1970.

Charles J. George (Seal)	16912 Bedford Lane	(Street)
	Huntington Beach,	(City &)
	California 92647	(State)
Charles J. George, President Lincoln Mines, Inc. (Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)

I, Marlyn O. George (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Charles J. George (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Marlyn O. George
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS 1/

To the United States of America:

That certain land in the County of Yavapai, State of Arizona, described as follows: 2/ The ROUGH RIDER, YELLOW JACKET, QUIEN SABE, NORMA, S. P. CARLIN and ALENE patented lode mining claims and the ADMIRAL and VALLEY VIEW patented millsite claims, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, Pages 535-545, inclusive, in the office of the Yavapai County Recorder. WATSONVILLE lode mining claim, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof, is recorded in Book 77 of Deeds, Pages 523, in the office of Yavapai County Recorder.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Neaves Petroleum Developments 3/

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same. 4/

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

A Quiet Title Action is pending which is in the final, Interrogatory, stage.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 29th day of January, 1970.

Charles J. George (Seal)	16912 Bedford Lane	(Street)
	Huntington Beach,	(City &)
	California 92647	(State)
Charles J. George, President Lincoln Mines, Inc. (Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)
(Seal)		(Street)
		(City &)
		(State)

I, Marlyn O. George (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Charles J. George (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Marlyn O. George
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Yavapai, State of Arizona, described as follows:[2] The ROUGH RIDER, YELLOW JACKET, QUIEN SABE, NORMA, S. P. CARLIN and ALENE patented lode mining claims and the ADMIRAL and VALLEY VIEW patented millsite claims, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, Pages 535-545, inclusive, in the office of the Yavapai County Recorder. WATSONVILLE lode mining claim, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof, is recorded in Book 77 of Deeds, Pages 523, in the office of Yavapai County Recorder.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Neaves Petroleum Developments[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

A Quiet Title Action is pending which is in the final, Interrogatory, stage.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

3/ Insert name exactly as it appears in the Application MME Form 40.

4/ Subparagraph 1(a) does not apply to the holder of a claim, lien, or encumbrance.

4. Undertakes and agrees (a) neither to commit any act nor assert any claim in conflict with the provisions of this Agreement; and (b) to give advance notice of the Government's rights under this agreement to any subsequent transferee, mortgagee, encumbrancer, or lessee of any of the undersigned's right, title, claim, or interest in or against the land or any production therefrom, furnishing the Government with two true copies of such notice; and

5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 29th day of January, 1970.

Charles J. George, President Lincoln Mines, Inc. (Seal)	16912 Bedford Lane (Street) Huntington Beach, (City &) California 92647 (State)	
(Seal)	(Street) (City &) (State)	
(Seal)	(Street) (City &) (State)	
(Seal)	(Street) (City &) (State)	
(Seal)	(Street) (City &) (State)	
(Seal)	(Street) (City &) (State)	

I, Marlyn O. George (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Charles J. George (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Marlyn O. George
(Corporate Seal)

INT.-COP. RES., WASH., D.C. 21103

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
Docket No. OME –
Contract No. 14-23-090 –
Contract Date

LIEN AND SUBORDINATION AGREEMENTS[1]

To the United States of America:

That certain land in the County of Yavapai, State of Arizona, described as follows:[2] The ROUGH RIDER, YELLOW JACKET, QUIEN SABE, NORMA, S. P. CARLIN and ALENE patented lode mining claims and the ADMIRAL and VALLEY VIEW patented millsite claims, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, Pages 535-545, inclusive, in the office of the Yavapai County Recorder. WATSONVILLE lode mining claim, situate in the Pine Grove Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof, is recorded in Book 77 of Deeds, Pages 523, in the office of Yavapai County Recorder.

hereinafter called the "land", is the subject of a proposed exploration contract, hereinafter called the "Contract", between the United States of America, hereinafter called the "Government" and

Neaves Petroleum Developments[3]

hereinafter called the "Operator". In consideration for and as an inducement to the Government executing the Contract, the undersigned:

1. (a) Being the owner of an interest in the land, hereby grants to the Government a lien upon all of his right, title, and interest in the land and upon any production of minerals therefrom to secure the payment to the Government of the royalty on production provided for by the Contract, and agrees if the Operator's interest should be surrendered or terminated at any time prior to the expiration of the rights of the United States under said Contract to pay royalty to the Government according to the terms of said Contract; or

(b) Being the holder of a claim, lien, or encumbrance against the land, hereby subordinates his claim, lien, or encumbrance in or against the land and in any production therefrom to the rights of the Government under the Contract with respect to royalty on production and liens to secure same.[4]

2. Undertakes and agrees that property in which the Government may acquire an interest or equity under the Contract may be dismantled, severed from the land, and removed as may be provided in the Contract; and the Government's interest and equity in such property shall be prior and superior to any adverse right or claim of the undersigned.

3. Represents and undertakes that there is no claim, lien, or encumbrance upon the undersigned's right, title, claim, or interest in or against the land other than the following: (If "none" insert the word "none". Do not leave blank.)

A Quiet Title Action is pending which is in the final, Interrogatory, stage.

1/ Production from the land is not required, and in the absence of production there is no obligation to pay royalty to the Government.

2/ Either (a) insert the legal description of the land, or (b) strike out the words "as follows" and insert "in a lease /or contract, deed, or other document/ dated _____, and recorded in Book _____, Page ____, official records of said county". If (b) is used, the book and page of recordation must be inserted above. If the space provided is insufficient, use an Annex and refer to the Annex in the space.

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5. Consents to all amendments (including an agreement of termination) and assignments of the Contract without notice thereof, and undertakes and agrees that this agreement shall extend and apply thereto.

6. Added provisions None (State "None" or "See Annex No.____".)

Dated this 29th day of January, 1970.

Charles J. George (Seal)	16912 Bedford Lane	(Street)
	Huntington Beach,	(City &)
	California 92647	(State)
Charles J. George, President Lincoln Mines, Inc. (Seal)		(Street)
		(City &) (State)
(Seal)		(Street)
		(City &) (State)
(Seal)		(Street)
		(City &) (State)
(Seal)		(Street)
		(City &) (State)
(Seal)		(Street)
		(City &) (State)

I, Marlyn O. George (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Charles J. George (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Marlyn O. George
(Corporate Seal)

MME Form 52
Jan. 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION

FOR GOVERNMENT USE ONLY
Operator
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Neaves Petroleum Developments[3]

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6. Added provisions None (State "None" or "See Annex No. ____".)

Dated this 29th day of January, 19 70.

Charles J. George (Seal) — 16912 Bedford Lane (Street), Huntington Beach, California 92647 (City & State)

Charles J. George,
President
Lincoln Mines, Inc. (Seal) — (Street) (City & State)

(Seal) — (Street) (City & State)

(Seal) — (Street) (City & State)

(Seal) — (Street) (City & State)

(Seal) — (Street) (City & State)

I, Marlyn O. George (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Charles J. George (Name), who signed this agreement was then President (Title—Pres., Vice-Pres., etc.) of said corporation; that said agreement was duly signed for and in behalf of said corporation by authority of its governing body, and was within the scope of its corporate powers.

Marlyn O. George
(Corporate Seal)

INT.-COP. SES., WASH., D.C. 21103

21063

STATE OF ARIZONA, County of Yavapai—ss.
I do hereby certify that the within instrument was filed and recorded at the request of Neaves Petroleum Devs.
on Oct. 2 A.D., 1969 at 8:00 o'clock a M. Book 569 Official Records
Page 67-76 incl. Records of Yavapai County, Arizona.
WITNESS my hand and official seal the day and year first above written.
NORMA R. MARQUART, County Recorder
By Beverly N. Hume Deputy

INDEXED MICROFILMED

2. (a)

MINING LEASE

THIS LEASE is entered into effective as of June 1, 1969, by and between LINCOLN MINES, INC., an Arizona Corporation (hereinafter called "Lessor") and JOS. R. NEAVES, JR., an individual DBA: NEAVES PETROLEUM DEVELOPMENTS, of Beverly Hills, California (hereinafter called "Lessee").

Lessor is the owner of seven patented mining claims and two patented mill sites situated in the County of Yavapai, State of Arizona, more particularly described in Exhibit "A" attached hereto and by this reference made a part hereof (hereinafter referred to as the "Claims").

Lessor is willing to lease the Claims to Lessee upon the terms, provisions and conditions hereinafter set forth.

NOW, THEREFORE, the parties agree as follows:

1. PREMISES

Lessor hereby leases and lets to Lessee, and the Lessee hereby leases from the Lessor, the Claims together with all minerals, ores, or valuable materials, and all stockpiles located on or underlying the Claims (hereinafter collectively referred to as "Leased Substances") and all structures and improvements, and Lessor hereby grants to Lessee all mining rights and privileges pertaining to the Claims, including, but not limited to:

A. The sole and exclusive right to explore, develop, and mine the Claims by any method and to remove, beneficiate, concentrate, or otherwise treat and to ship any Leased Substances or ores produced from other property.

B. The right to construct, to maintain, and to remove any and all buildings, structures, machinery, excavations, openings, tunnels, ditches, drains, water pipes, railroads, roads, tramways and such other improvements, property and fixtures as may be reasonably necessary, convenient or suitable for exploring and developing the Claims and for mining, removing, beneficiating, concentrating or otherwise treating or shipping any Leased Substances or concentrated products thereof or for any activity incidental thereto.

2. (a)

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

C. All rights, privileges and easements on, across, and under the Claims necessary or advisable for conducting mining operations on the Claims (to the extent that Lessor's interest in the Claims permits it to grant such right and authority), including, but not limited to, all mining rights, water rights, interests, and estates now owned or hereafter acquired by Lessor in and to the lands and premises comprising the Claims, and all right and estate of Lessor in and to all easements, licenses, rights-of-way, dips, spurs and angles.

D. The right (to the extent that Lessor's interest in the Claims permits it to grant such right and authority) to sink wells, to divert streams, pools or lakes into or from the Claims, to construct new channels or beds therefor, to use the waters thereof, to remove lateral and subjacent support, to cave, to subside or to destroy the surface or any part thereof, to stockpile Leased Substances or ores produced from other property, to dump earth, rocks, waste, lean ores and materials on any part of such surface where it will not interfere with mining, and to commit waste to the extent necessary, usual or customary in the carrying out of any or all of such purposes, rights, or privileges.

2. TERM

The term of this lease shall be for fifteen (15) years commencing June 1, 1969, and so long thereafter as commercial ore is being continually and profitably produced by Lessee from the Claims, unless sooner terminated as hereinafter provided.

3. MINIMUM EXPLORATION

If Lessee does not terminate this lease prior to June 1, 1970, Lessee shall on or before that date commence construction of a road to the property and mark and survey its boundaries. Commencing on September 1, 1970, Lessee agrees to perform a minimum of two-hundred forty (240) man shifts annually on the Claims.

4. CONDUCT OF OPERATIONS

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NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

All operations of Lessee hereunder which involve the mining, removal or beneficiation of any ores or minerals from the Claims shall be conducted in a good and minerlike manner and in accordance with good engineering and mining practices.

Insofar as practicable, any material stockpiled or deposited by Lessee on the Claims shall be stockpiled or deposited in such places and in such manner as will not unreasonably interfere with any subsequent mining operation on the Claims.

In the conduct of any mining or beneficiating operations on the Claims, Lessee shall observe all applicable laws, including the Arizona Workmen's Compensation Laws, but Lessee shall have and hereby reserve the right to contest the validity of any such law or any regulation thereunder, and, if any proceedings are required to be carried on in the name of the Lessor, the consent of the Lessor shall not be unreasonably withheld. Lessee shall indemnify and hold Lessor harmless from and against any costs, expenses, or damages arising from such proceedings.

5. DEFINITIONS

For the purpose of determining royalties payable under this lease, the following definitions shall apply:

"Net smelter returns" shall mean the amount of payments received by Lessee from the smelter to which any Leased Substances or concentrates derived from such Leased Substances are delivered for treatment and sale after deduction has been made for all smelter penalties (based on ore quality) and charges, freight costs of transportation and haulage from the Claims and the mill to the smelter.

"Net mill returns" shall mean the amount of payments received by Lessee from the mill for any ores delivered for treatment and sale after deductions have been made for all milling costs, freight, cost of transportation and haulage from the Claims to the mill.

"Net mint returns" shall mean the amount of the payments received by Lessee from the United States Mint or other authorized bullion purchaser after deduction has been made for all postage,

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NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

express insurance, and other handling charges incurred in connection with the shipment of such bullion from the mill to the purchaser.

"Gold and silver value" shall mean the average gold and silver values in the crude ores, mined by open pit methods and mined by underground methods from the leased Claims, entering the mill, smelter or other concentrating plants during each calendar month of the term of this lease.

6. ROYALTY PAYMENTS

Lessee shall pay Lessor, on or before the 20th day of January, April, July, and October of each year during the term of this lease, a royalty in the following percentages of the net smelter returns, net mill returns and net mint returns received by Lessee from the sale of Leased Substances produced and sold from the Claims during the three months preceding the first day of the month in which payment is to be made. Royalties will be paid on the following sliding scale:

On values $00.00 to $20.00 - Royalty of 5%
On values $20.01 to $25.00 - Royalty of 6%
On values $25.01 to $30.00 - Royalty of 7%
On values $30.01 to $35.00 - Royalty of 8%
On values $35.01 to $40.00 - Royalty of 9%
On values $40.01 to $45.00 - Royalty of 10%
On values $45.01 to $50.00 - Royalty of 11%
On values $50.01 to $52.00 - Royalty of 12%
On values $52.01 to $53.00 - Royalty of 13%
On values $53.01 to $54.00 - Royalty of 14%
On values $54.01 to $55.00 - Royalty of 15%
On values $55.01 and up - Royalty of 16%

No royalties shall be payable to Lessor by reason of the milling or concentrating of any ores or minerals other than Leased Substances in any plant located on the Claims, but Lessor shall be informed at all times of

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NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

the origin of such ores or minerals.

7. INSPECTION

Lessor or its representatives may enter the Claims during normal business hours to inspect Lessee's mining operations, workings, mill, and other structures, and to examine Lessee's assays and samples; provided, however, that such entry and inspection shall not interfere with Lessee's mining operations, and Lessor's entry and presence upon the Claims shall be at its sole risk.

8. TAXES

Lessee shall pay promptly before delinquency all taxes, general and specific, ordinary and extraordinary, that may be levied or assessed during the term of this lease (except as in the next succeeding paragraph provided) upon or against the Claims, improvements, mining equipment, and personal property located on the Claims and any Leased Substances or their concentrates, beginning with those taxes payable on July 1, 1970. In addition, Lessee shall pay all occupational taxes and any and all taxes assessed on account of the Lessee's mining or other operations in or on the Claims, including severance taxes; provided, however, that Lessee shall not be required to pay any income or other taxes imposed on the Lessor by reason of the receipt of royalties from the Lessee on account of such mining operations. If this lease is terminated, Lessee shall pay its pro rata share, as of the date of termination, of all taxes levied or assessed against the Claims for the taxable year and shall pay the full amount of all taxes levied and assessed for such year against all ores and concentrates thereof, mined and produced from the Claims, which shall have been shipped prior to the termination of this lease.

Lessee shall have the right to contest the validity or amount of any such taxes and assessments in case it shall deem the same unlawful, unjust, unequal or excessive, or to take such other steps or proceedings as it may deem necessary to secure a cancellation, reduction, readjustment or equalization thereof, before it shall be required to pay the same; but the Lessee shall not permit the Claims or any other property or any part thereof to be sold at any time for any such taxes or assessments. Lessee shall, upon

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NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

request, furnish the Lessor duplicate receipts or other satisfactory evidence of payment of all such taxes and assessments when paid.

9. LESSE'S RECORDS

Lesse shall:

A. Furnish to Lessor, upon written request from Lessor, copies of drillhole logs, mill tests and other exploration and metallurgical data that Lessor may from time to time request of Lessee.

B. Furnish to Lessor, upon written request from Lessor, copies of all mining maps prepared by Lessee.

C. Keep true books and accounts showing the production and distribution of all Leased Substances from the Claims and all other data necessary or proper for the settlement of royalties to be paid under this lease. The books and records shall be opened to Lessor for the purpose of inspection and copying at Lessee's office.

10. EXCUSE FOR NONPERFORMANCE

If the time for performance of any act to be performed by Lessee under this lease, other than the payment of money or the performance of the annual assessment work, is hindered, prevented or delayed by any fact or circumstance beyond the reasonable control of Lessee and could not have been avoided by the use of due diligence, then the time for the performance of any such act shall be extended for the period equal to the period that such performance was hindered, prevented or delayed.

11. NOTICE OF DEFAULT

If, in the opinion of Lessor, Lessee shall have failed to perform any term or condition on their part to be performed, Lessor may give Lessee notice in writing specifying the nature of such failure, and Lessee shall have ninety (90) days thereafter to perform or commence performance of the term or condition or to give Lessor written notice that in Lessee's opinion it has not failed to perform; provided, however, that if the alleged failure pertains to the payment of money or to annual assessment work, Lessee's time within which to act shall be ten (10) days. If Lessee does not perform, commence performance, or give notice denying failure to perform within the

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

ninety day period, Lessor may, by notice, terminate this lease. If Lessee gives notice denying failure of performance and if Lessor still is of the opinion that Lessee has failed to perform, Lessor may pursue any legal remedy it may have; provided, however, that this lease shall not terminate until the rights of the parties have been finally adjudicated. If a judgment is entered in any lawsuit arising out of an alleged breach of a term or condition of this lease, the prevailing party shall be entitled to recover, in addition to any other damages to which it may be entitled, all the costs and expenses, including reasonable attorneys' fees incurred by it as a result of the litigation.

12. TERMINATION

Lessee, if not in default, may terminate this lease at any time by giving to Lessor written notice of such termination or surrender not less than thirty (30) days prior to the effective date thereof. Lessee shall pay to Lessor, prior to such date, all sums that shall then have accrued or have become payable to Lessor hereunder, and shall perform all the terms and conditions hereof on the part of the Lessee to be performed up to the date of such termination. Upon termination, all rights, duties, obligations and liabilities of the parties hereto shall cease and terminate except the obligation of Lessee to pay any taxes payable by them hereunder which cannot be paid until after the date of termination.

13. REMOVAL OF IMPROVEMENTS

Upon the termination of this lease, the Lessee shall have six (6) months in which to remove all engines, dredges, tools, machinery, railway tracks, buildings, dwellings, or structures and all other property of every nature and description (except ores, concentrates, lean ore materials, tailings or rejects) erected or placed by Lessee upon the Claims; provided that supports placed in any shafts, drifts or openings upon the Claims, or any timber or frame work necessary to the use and maintenance of dams or tramways upon the Claims, or necessary to the use or maintenance of shafts or approaches thereon, as well as any and all water lines, vent pipes, air lines, rails and ties, shall not be removed by the Lessee; provided further

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

that none of said property may be removed unless all terms and conditions hereof to be performed by the Lessee shall have been performed. Lessee shal leave the Claims in a reasonably safe and clean condition.

14. RETURN OF PREMISES

If this Lease is terminated, Lessee shall peaceably surrender to Lessor the Claims and all improvements and ores, concentrates, lean ore materials, tailings or rejects pursuant to Section 13, and all water rights acquired from Lessor, and shall execute and deliver to Lessor a recordable instrument evidencing such surrender, if requested by Lessor.

15. LESSOR'S TITLE

Lessor warrants its title to the subject Claims as of January 1, 1970; and Lessor also warrants that it has not caused any lien or encumbrance to be placed on the Claims, that it has the right to lease the Claims, and that if Lessee performs each of the terms and conditions to be performed by Lessee, Lessor shall defend Lessee's quiet and peaceful possession of the Claims for the uses and purposes herein provided against all persons claiming any interest in the Claims.

16. NOTICES

Any and all notices shall be in writing and all notices and delivery of documents or payments provided for by this lease to be given to either of the parties shall be deemed to have been given when actually delivered to such party in person or when deposited in the United States mail, certified or registered, with postage fully prepaid and addressed to the respective parties at the addresses set forth on the signature page of this lease. Each party by written notice to the other party shall be privileged any time to change its address, which changed address shall be such party's correct address for all purposes hereof.

17. SUCCESSORS IN INTEREST

This lease shall be binding upon and shall inure to the benefit of the parties and their heirs, successors, assigns, and personal representatives. Each party has executed this lease in triplicate on the date set forth opposite its name.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

EXHIBIT "A"

COPY

All those certain patented mining claims in the PINE GROVE Mining District, described as follows:

"ROUGH RIDER", "YELLOW JACKET", "QUIEN SABE", "NORMA", "S.P. CARLIN", "ALENE", "ADMIRAL" MILLSITE, AND "VALLEY VIEW" MILLSITE.

Designated by the Surveyor General as Survey No. 1599, the United States Patent whereof is of record in Book 69 of Deeds, pages 535-545, and

"WATSONVILLE" Lode Mining Claim in the PINE GROVE Mining District, designated by the Surveyor General as Survey No. 2106, the United States Patent whereof is of record in Book 77 of Deeds, page 523.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

STATE OF CALIFORNIA)
) SS.
COUNTY OF LOS ANGELES)

On this 19th day of September, 1969, before me, the undersigned, a Notary Public in and for said State, personally appeared Charles J. George, known to me to be the President of Lincoln Mines, Inc., the Corporation that executed the within Instrument, and known to be to be the person who executed the the within Instrument on behalf of the Corporation there in named, and acknowledged to me that such Corporation executed the within Instrument pursuant to its By-Laws or a resolution of its Board of Directors.

WITNESS my hand and official seal.

MARIA E. OVERSTREET
NOTARY PUBLIC - CALIFORNIA
PRINCIPAL OFFICE IN
LOS ANGELES COUNTY

Notary Public in and for said State.

MARIA E. OVERSTREET, Notary Public
In and for the State of California
My Commission Expires October 3, 1970

SIGNATURE PAGE

(LESSOR)

Date: Sept. 19, 1969

LINCOLN MINES, INC.

Address: 16912 Bedford Lane

By _____
President

Huntington Beach, Calif. 92647

By Marilyn O. Gomez
Secretary

SEAL:

(LESSEE)

Date: August 7 1969

JOS. R. NEAVES, JR.
DBA: NEAVES PETROLEUM DEVELOPMENTS

Address: 239 South Beverly Drive

Joseph R. Neaves Jr.

Beverly Hills, Calif. 90212

By Gordon Neaves
His Attorney-in-Fact

STATE OF CALIFORNIA)
) SS.
COUNTY OF LOS ANGELES)

On this 7th day of August, 1969, before me, the undersigned, a Notary Public in and for said State, personally appeared Gordon Neaves, known to me to be the person whose name is subscribed to the within Instrument as attorney in fact of Joseph R. Neaves, Jr., and acknowledged to me that he subscribed the name of Joseph R. Neaves, Jr. thereto as principal, and his own name as attorney in fact.

WITNESS my hand and official seal.

OFFICIAL SEAL
LOIS M. NYGREN
NOTARY PUBLIC - CALIFORNIA
LOS ANGELES COUNTY
My Commission Expires Mar. 17, 1971

Lois M. Nygren

Notary Public in and for said State

STATE OF CALIFORNIA)
) SS.
COUNTY OF Orange)

On this 15th day of Sept, 1969, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, known to me to be the President, and Marilyn O. Gomez, known to me to be the Secretary, of Lincoln Mines, Inc., the Corporation that executed the within Instrument, and known to me to be the persons who executed the within Instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the within Instrument pursuant to its By-Laws or a resolution of its Board of Directors.

WITNESS my hand and official seal.

OFFICIAL SEAL
JOAN M. BROWN
NOTARY PUBLIC, CALIFORNIA
PRINCIPAL OFFICE IN
ORANGE COUNTY
My Commission Expires June 10, 1973

Joan M. Brown

Notary Public in and for said State

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
TUNNEL DRIVING
MINE PLANT DESIGN
AND FABRICATION

Boyles Bros. DRILLING COMPANY

CONTRACTORS-ENGINEERS-GEOLOGISTS
P.O. Box 9578
10801 North 21st Avenue
PHOENIX, ARIZONA 85020
Phones: Office (602) 944-2741
Res. (602) 948-2009

General Offices and Plant
1624 Pioneer Road P. O. Box 58
SALT LAKE CITY, UTAH 84110
Phone (801) 487-3671
BRANCH OFFICES
ARIZONA (PHOENIX)
CALIFORNIA (AUBURN)
COLORADO (GOLDEN)
KENTUCKY (LOUISVILLE)
NEVADA (SPARKS)
OKLAHOMA (NORMAN)
WASHINGTON (SPOKANE)
CHILE (SANTIAGO)
CABLE: BOYLESBROS
MEXICO, D.F.
PERU (LIMA)
CABLE: BOYLESCOP

December 9, 1969

Mr. Jim Marsh, Geologist
Neaves Petroleum Developments
Chamber of Commerce Bldg.
239 South Beverly Drive
Beverly Hills, California 90210

Dear Mr. Marsh:

For drilling on the property known as the Lincoln Mine approximately three miles from Crown King, Arizona, we submit the following prices.

To put in a suitable road from Crown King to the first drill site the charge will be $ 8,600.00. For each additional drill site the charge will be $ 300.00.

Core Drilling

1. Mobilization --- $ 300.00

2. Drilling

	BXWL	- NXWL	NC or Collar Pipe
0 to 500'	10.10	10.60	11.10
500 to 1000'	10.60	11.0	

3. Cementing, if necessary, $ 16.00 per hour, plus cost of cement or cement substitutes including drilling mud and additives.

4. Water truck rental of $ 225.00 per month, plus 20 cents a mile. Water to be hauled from your source of supply.

5. Casing lost or left in hole at your request, to be charged for at list price F.O.B. jobsite.

Thanks for asking for our prices.

Sincerely,

BOYLES BROS. DRILLING CO.

J E Roberts

J. E. Roberts,
District Manager

JER/jwh

12

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
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Boyles Bros.
DRILLING COMPANY

CONTRACTORS-ENGINEERS-GEOLOGISTS

General Offices and Plant
1624 Pioneer Road P. O. Box 58 Phone 487-3671 [redacted]
SALT LAKE CITY, UTAH 84110

BRANCH OFFICES
PHOENIX
RENO
SPOKANE
DENVER
SACRAMENTO
SANTIAGO, CHILE
LIMA, PERU

F. E. PETERS
Manager—Mining Division

December 10, 1969

Neaves Petroleum Developments
Chamber of Commerce Building
Beverly Hills, California

Attention: Mr. James A. Marsh

Subject: Lincoln Mine Property

Gentlemen:

The following is our bid on driving a 6 ft. x 8 ft. drift 2,000 ft. with 20 lb. rail, 4 in. x 6 in. x 42" ties, 4" air line (light weight), 1" water line, and 20" vent line. The track, pipe, and vent line will be left in place.

1. Mobilization and demobilization $15,575.00

2. Excavate 2,000 ft. 6 x 8 ft. drift raw @ $109.44/ft. 218,880.00

3. Install drift sets 403.75/MBF

4. Install rock bolts 2.34/LF

5. Any water above 15 GPM to be pumped or ground that needs spiling would be on a cost plus basis.

6. All labor is cost plus 15%

7. Material cost includes freight 15%

8. Boyles will repair road as necessary to get men and equipment in. No changes will be made on property line and grade from a point approximately one mile from Crown King to the south portal and up to Lincoln Mine for a lump sum of $10,455.78

Neaves Petroleum will be responsible for any permits needed from the government - forest or water permits.

If you have any questions, please give us a call.

Very truly yours,

BOYLES BROS. DRILLING COMPANY

Frank E Peters

Frank E. Peters
Manager - Mining Division

FEP/jsk

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

F. G. McFARLAND
TOOELE, UTAH
Phone – Tooele 882-1243

S. R. HULLINGER
TOOELE, UTAH
Phone – Tooele 882-1344

McFARLAND AND HULLINGER

MINING • ORE HAULING • CONTRACTING
PHONE 882-0103
P. O. BOX 238
TOOELE, UTAH 84074

December 10, 1969

Neaves Petroleum Development
Chamber of Commerce Bldg.
Beverly Hills, Calif.
Attn: Mr. James A. Marsh

Re: Lincoln Mine property near
Crown Kine Mine-Arizona

Gentlemen:

Enclosed is an estimate of cost to drive a 6' x 8' drift in the clear using 20# mine rail, 4" x 6" x 42" ties, 3' centers, 4" air line, 1" water line, and 18" vent line. Track, pipe, and vent line will be left in place. Cost - $ 90.00 per lineal foot of completed drift. Rehabilitation of present drift, cost plus 20%. Any timbering necessary, $ 405.50 per 1,000 board feet. Install rock bolts at cost plus 20%. Bad ground requiring spiling to be cost plus 20%. Move in and move out - $ 7500.00.

The above conditions are with the understanding that the road to the drift site will be readily accessible for transportation of materials, equipment, and man power.

Very truly yours,

McFarland & Hullinger

S. R. Hullinger
Partner

SRH/mh

Longyear

E. J. LONGYEAR COMPANY
308 EAST PIMA STREET
PHOENIX, ARIZONA 85004
PHONE 258-6543
GEN. OFFICE - MINNEAPOLIS, MINN.

January 23, 1970

Neaves Petroleum Developments
239 South Beverly Drive
Chamber of Commerce Bldg.
Beverly Hills, California

Attention: Mr. James A. Marsh,
Chief Executive, Mining

SUBJECT: PROPOSAL COVERING YOUR PLANNED O.M.E. PARTICIPATION DRILLING PROGRAM, VICINITY CROWN KING, ARIZONA

Gentlemen:

1. In response to your request last November and after inspecting your proposed drilling program, we are pleased to set forth our price schedule below.

2. It is our understanding that your program will consist of approximately 2,800 linear feet of NQ or BQ size core drilling in a series of minus 40 degree to 50 degree angle holes of which no one hole is expected to exceed 700 feet in total depth or length.

The formation to be core drilled consists mainly of granitic and schist rock types.

Water for drilling purposes may have to be obtained from an old mine shaft which exists near Crown King and is approximately three miles distance one way from any proposed drill site.

Living facilities are limited in the area and will require the establishment of house trailers or similar type facilities for the crew.

Existing roads in the area are presently too narrow and washed out and will require rebuilding in order to have proper access for water and service trucks as well as the drilling equipment.

3. For the program as outlined above, we propose to furnish one Longyear skid drilling machine of suitable capacity together with all the required accessory equipment including water and service vehicles.

We would expect to carry out the program operating one shift per day on a six day per week basis.

4. We will carry public liability insurance covering personal injury and property damage, and Workmen's Compensation insurance and also all-risk insurance on the drilling equipment protecting against loss by theft, fire, flood, landslides and other similar hazards. Certificates showing the coverage referred to will be furnished upon request.

5. Based upon conditions which we expect may prevail on this work, we are pleased to submit the following price schedule:

a) Mobilization and demobilization of personnel and drilling equipment.....$525.00 lump sum/rig

b) Overburden drilling - Alluvial material or soft, eroded ledge rocks where rotary type bits are applicable -

	4-1/4"-4-1/2"
0 to 50 feet in depth.....	$6.45 per foot

c) Diamond core drilling - Angle holes minus 40 degrees or steeper as measured from the horizontal -

	NQ WL	BQ WL
0 to 250 feet in depth.....	$9.65/ft.	$9.40/ft.
250 to 500 feet in depth.....	$9.95/ft.	$9.70/ft.
500 to 750 feet in depth.....	$10.45/ft.	$10.20/ft.

d) Reaming for casing, if required and where applicable -

NX hole for NX casing.....$4.75 per foot
BX hole for BX casing.....$4.50 per foot

NOTE: In preparing this proposal, we have assumed that the diamond bit expense will average $1.50 per foot drilled or reamed. In the event actual conditions should produce diamond bit expense in excess of the $1.50 per foot allowance, it is understood and agreed that Neaves Petroleum will be invoiced for 50% of the amount of the overage.

Diamond bit expense will be computed as follows:

Diamonds consumed will be priced at $12.50 per carat plus the setting charges for the size and type of diamond set item used divided by the footage drilled.

NEAVES PETROLEUM DEVELOPMENTS,
239 South Beverly Drive
Beverly Hills, California

e) Time spent by crews performing cementing activity, installing or pulling casing or performing other necessary hole stabilizing or loss circulation plugging activity will be invoiced at.....$19.20 per hour with 2-man drill crew.

f) Standby time or delays for your convenience or for which you are responsible will be invoiced at.....$17.50 per hour for each 2-man drill crew.

g) Cement, drill mud, additives or other hole stabilizing or hole plugging material consumed in the project will be invoiced at Longyear jobsite cost, plus a 10% markup charge.

h) Casing lost or left in holes at your request will be invoiced at Longyear Company replacement cost, jobsite basis.

i) Water truck service -

1) Truck rental - $275.00 per month plus 15 cents per mile traveled while engaged in water hauling activity.

2) A source of water will be provided by you at no charge to the Longyear Company.

3) A separate, full time water truck driver, if required, will be furnished for $5.00 per hour. If the water hauling activity can be carried out while using the drill helper as the water truck driver and without subjecting the drilling to delays, no charge will be made for his driving service.

j) Core boxes, cardboard type, capacity ten feet of core in either NX or BX size will be furnished by Longyear for.....$1.00 each

k) It is understood that Neaves Petroleum Developments will construct and maintain the necessary access roads that will permit servicing by standard 2-wheel drive vehicles. It is further understood that you will construct the necessary drill sites including mud pits.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

In the event Longyear will be required to obtain the necessary tractor service for the construction of the necessary roads and drill sites, the cost incurred in obtaining such service will be invoiced at Longyear cost plus a 10% markup charge.

6. Cores and/or samples obtained in the drilling will be turned over to your representative at the drill site in containers furnished by you or by the Longyear Company as outlined above.

7. If this proposal is acceptable to Neaves Petroleum Developments, it is understood that they will furnish all necessary financial information to our Credit Department in Minneapolis, Minnesota for its use in determining the type of financing that will be required to cover the work.

It is further understood that this proposal is subject to the condition that you secure written approval of your arrangement for payment for the work to be performed before it is commenced. Written approval can only be given by a corporate officer of the Longyear Company by separate letter. Also such approval can be withheld in his sole discretion.

8. Invoices covering the work performed will be prepared as promptly as possible after the fifteenth and last day of each month and payment shall be due within twenty days from your receipt of invoice.

9. We appreciate the opportunity to make our drilling service available to you for this project. If selected to carry out this work and dependent upon the availability of equipment at that time, we would expect to get the work underway as quickly as possible to conform with your work schedule.

This proposal is valid for a period of 60 days from its date. If additional time is required by you for the purpose of comparing bids and making a decision for award, we request that you contact us for a further extension.

Sincerely,

E. J. LONGYEAR COMPANY

J. R. Miller

Manager, Southwestern Zone
Contract Drilling Division

J.R.Miller:jag

ACCEPTED:
Company_____

By_____

Date_____

WEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

HAROLD B. SPENCER, PRESIDENT
JAMES QUIGLEY, VICE-PRESIDENT
FRANCIS W. McCABE, SEC'Y-TREASURER

P. O. BOX 290
TELEPHONE 433-6876
AREA CODE 801

CENTENNIAL DEVELOPMENT COMPANY

MINING ENGINEERS AND CONTRACTORS

EUREKA, UTAH 84628

December 6, 1969

Neaves Petroleum Development Co.
239 South Beverly Drive
Beverly Hills, California

Att'n: James Marsh, Chief Exec.

Gentlemen:

In accordance with your request we are pleased to offer to drive the tunnel at your Crown King property under the following conditions and for the following firm prices:

Present situation at the Tunnel

Portal is caved connected by passable road $1\frac{1}{2}$ miles from Crown King. Tunnel is probably 6'x8' in cross section with no pipe or rail.

Specifications

Portal is to be cleaned up and timbered to 6'x8' cross section, 8"x8" timber, 3" lagging.

Tunnel is to be carried 6'x8' in cross section, rock bolted where necessary and timbered with 8'x8' or heavier timber where required. Tunnel is to be equiped with 20# rail laid on 42", 4"x6" ties on 24" gauge, and a 4" L.W. steel air line, 1" water line and 20" vent line. All pipe, rail timber to be left in tunnel.

Neaves to Furnish

Clean up road to portal and all engineering and geological services for line and direction.

Centennial to Furnish

All supervision, labor, equipment, permanent materials and operating supplies, including all payroll taxes, fringe benefits and insurance to save Neaves harmless from any liability arising out of the contractors performance of the work.

334,000

CENTENNIAL DEVELOPMENT COMPANY

Firm Prices

Mobilization		25,000.00	
Portal Open Cut			
Excavation in dirt and caved rock	per C. Y.	5.00	1400.00
Timber	per M. B. F.	350.00	1000.00
Excavation in rock	per C. Y.	10.00	500.00
Existing Tunnel			
Slabbing to size where required	per C. F.	1.25	500
Furnishing & Laying Track & Pipe		9.50	5700
Advance from Face			
Tunnel including rail & Pipe	per L. F.	70.00	14000.00
Rock bolts 6' long	each	12.00	500.00
Timber including extra excavation	per M. B. F.	400.00	500.00

We can hold to this proposal for 6 months at which time we would have to review the conditions and our situation. We are licensed contractors in Arizona and are familiar with conditions there. We appreciate the opportunity of making this proposal and trust you will call on us for other work in this field.

Very truly yours,

CENTENNIAL DEVELOPMENT COMPANY

James Quigley

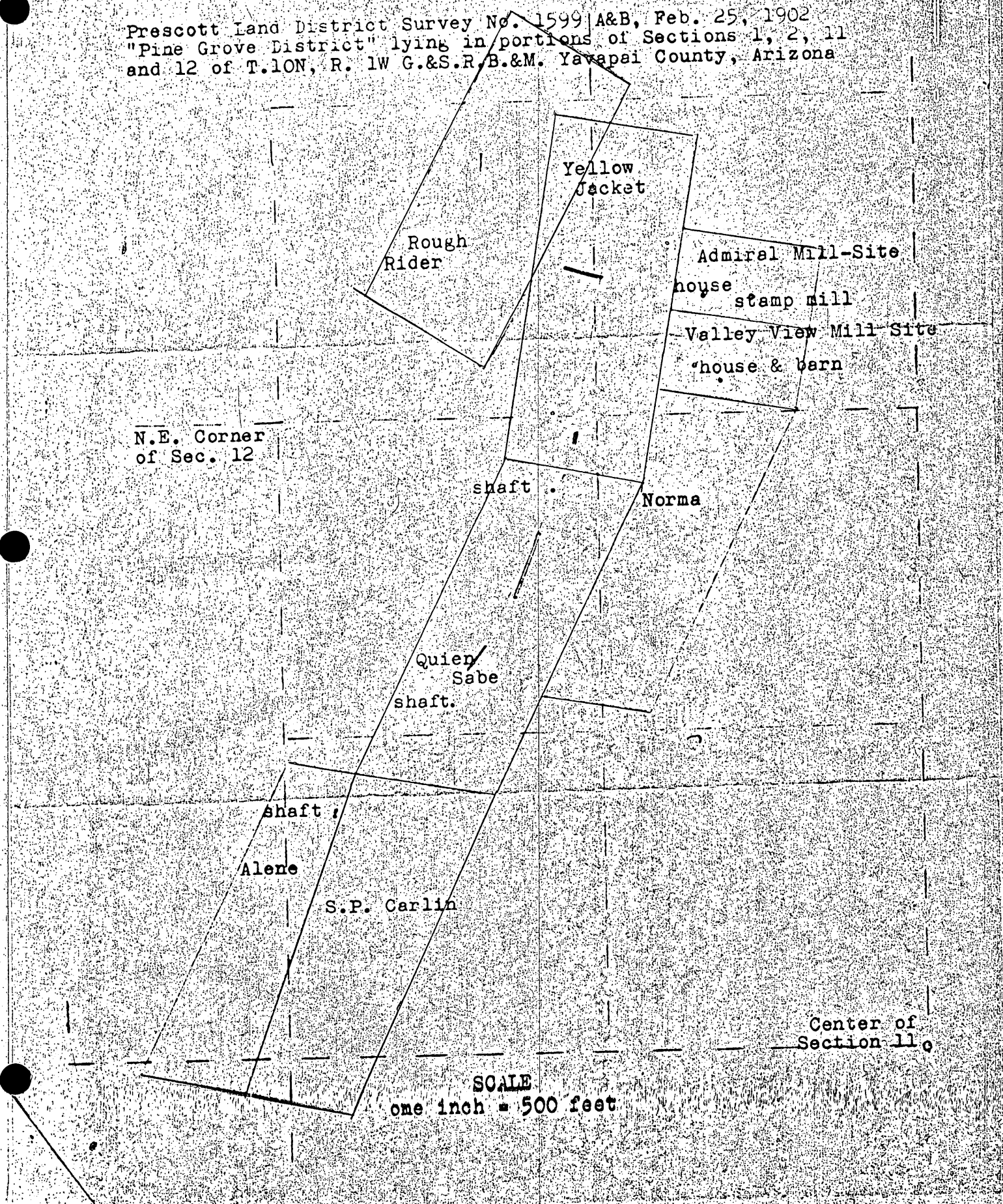
James Quigley

JQ/sj

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Protraction Diagram of "The Lincoln Gold Mining-Milling Co."

Prescott Land District Survey No. 1599 A&B, Feb. 25, 1902
"Pine Grove District" lying in portions of Sections 1, 2, 11
and 12 of T.10N, R. 1W G.&S.R.B.&M. Yavapai County, Arizona



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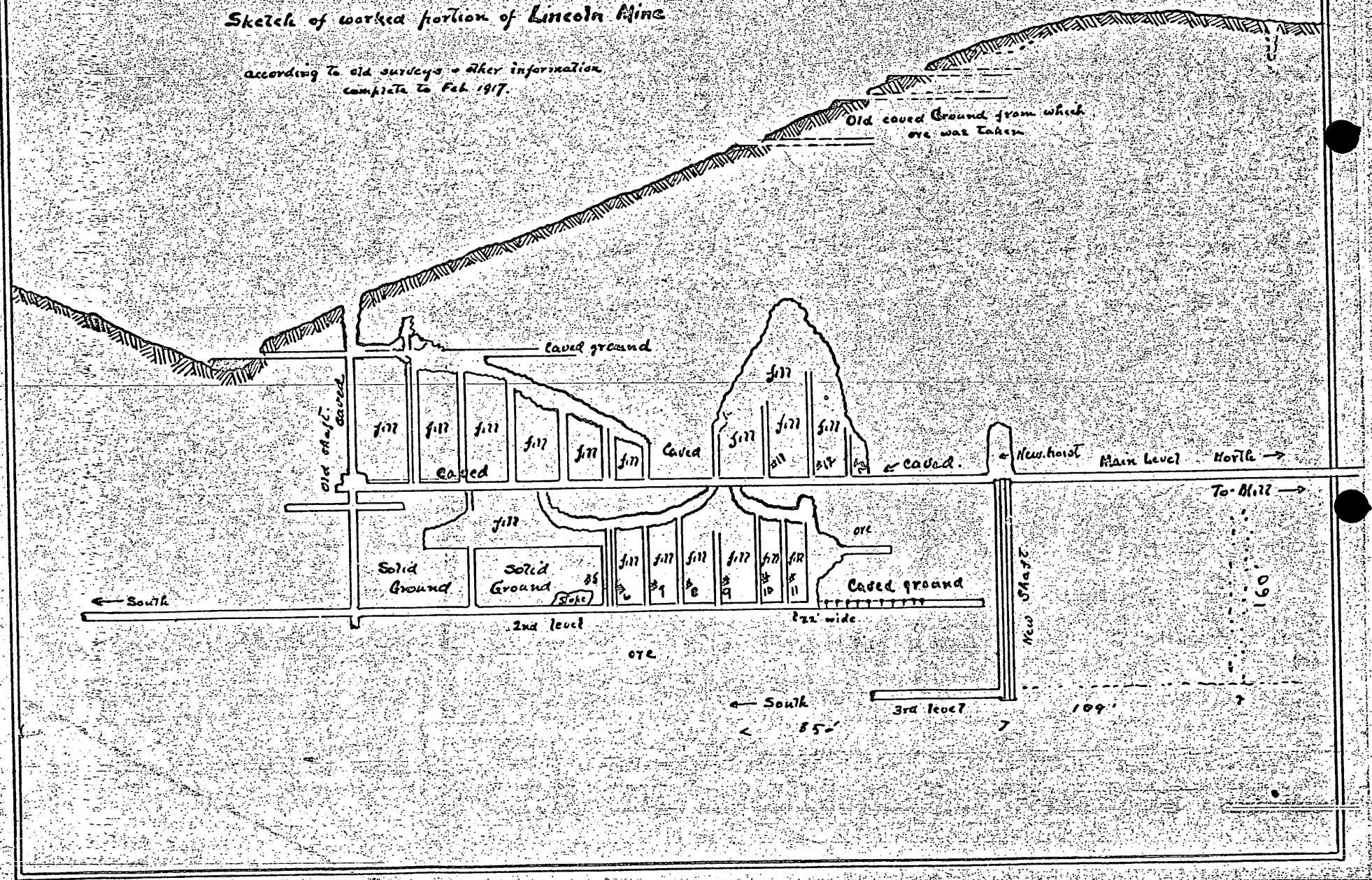
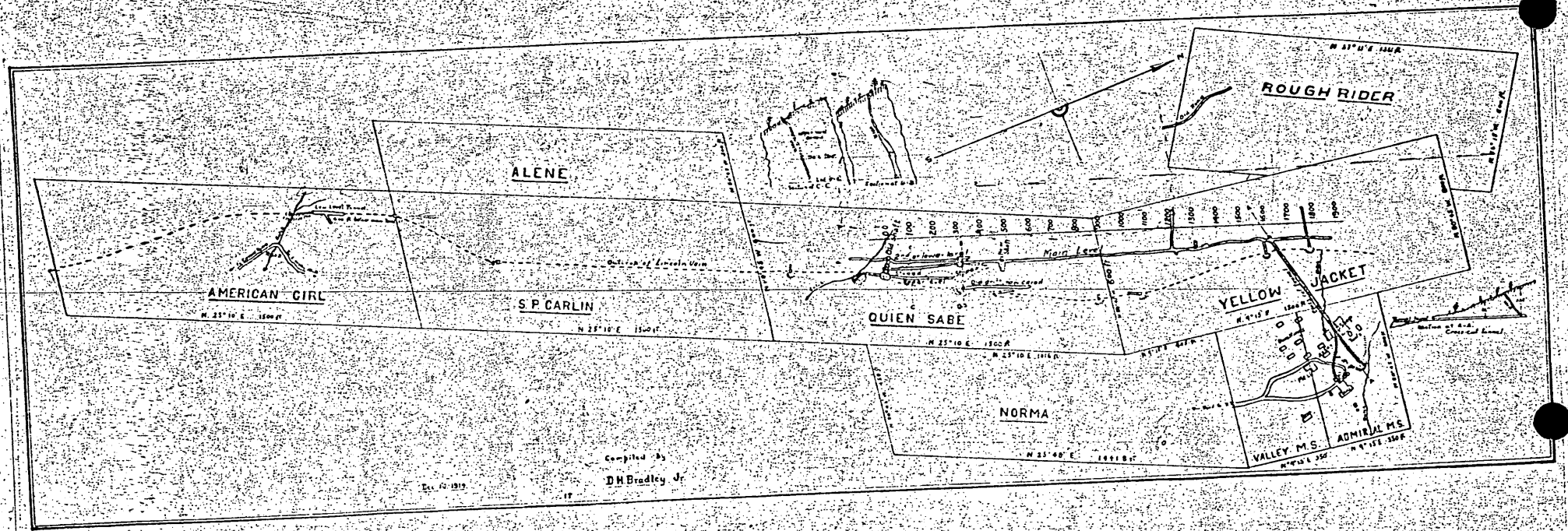
239 South Beverly Drive
Beverly Hills, California


Sketch of worked portion of Lincoln Mine
according to old surveys & other information
complete to Feb 1917.
Old caved Ground from which
ore was taken
caved ground
old shaft caved
fill
Caved
Caved.
New hoist
Main level
North →
To Mill →
ore
Solid Ground
Solid Ground
Stope
Caved ground
← South
2nd level
22' wide
New Shaft
ore
← South
3rd level
85'
109'
60'

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California


ROUGH RIDER
ALENE
AMERICAN GIRL
S.P. CARLIN
QUIEN SABE
NORMA
YELLOW JACKET
VALLEY M.S.
ADMIRAL M.S.
Main Level
Compiled by
D.H. Bradley Jr.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Was work done by "eastern group"?
— Not after 1932.

DEVELOPMENT
EXAMINATIONS
VALUATION
REPORTS

TELEPHONE
MUTUAL 8258

ALVIN B. CARPENTER
CONSULTING MINING ENGINEER
1211 PACIFIC MUTUAL BUILDING
LOS ANGELES
MUTUAL 8258

September 14, 1932

Mr. Melvin F. George

Dear Sir:

At your request I made a visit to the Lincoln Mine near Crown King in Yavapai County, Arizona, on September 11, 1932, and in the following pages I give you a resumé of what I found there, including the present condition of the workings, the equipment, housing, and roads. I also include a statement of the present condition of tax payments as shown on September 10th on the books of the Treasurer of Yavapai County, in Prescott. The following is the information obtained from observation and from Pat O'Hagan, the sole employee at present on the property.

My general understanding is that there is now a lease and bond on the property executed by Mr. Chas. C. Miller, Jr. as Trustee to a Mr. Christenson and others in the name of the CALINCOLN MINES INC.

During 1931 this corporation proceeded to actively work the property. Preliminary to actual mine work, all of the cabins at the mine camp were rehabilitated and put in first-class condition, the outsides painted and the inner

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

walls neatly lined with straw board. One new cabin was erected by the company and one cottage erected at the personal expense of the President of the Company.

The roof truss in the lower part of the old mill that was broken had been replaced and the mill building appeared to be in good condition. No work has been attempted in rehabilitating the mill and it is doubtful if such would be worth the necessary expense, as the best ore possibilities in the mine are below the long tunnel that leads to the mill, and should be developed and worked from the continuation of the lower tunnel on the S. P. Carlin claim which should be extended into the Quien Sabe claim to the downward extension of the ore shoots exploited in the old upper workings of the property.

A new change house was erected and the compressor house was put in shape.

A timber shed and smith shop were also erected and a large amount of heavy timber, salvaged from an old railway bridge on the old railway to Crown King, was hauled to the mine.

A new Gardner-Denver compound air compressor of more than 600 cu. ft. air capacity, driven by a 75 H.P. Westinghouse motor, all of latest design, was set up at the mine.

The long tunnel with its portal near the old mill was cleaned out to a short distance beyond the "Bradley" winze. A larger station was made at the top of this winze and

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

an electric hoist installed.

The Bradley winze was cleaned out and retimbered where necessary.

This winze had reached a depth of 168 feet below the long tunnel when operations by Bradley were discontinued. The Calincoln Company carried this winze down about 40 feet to the 200-foot level below the tunnel and drove drifts both north and south. The north drift was run 75 feet to ore and crosscut 10 feet to the footwall. The south drift was run a distance of 158 feet at which point ore was struck on the footwall.

The vein at this level is characteristic of the vein in the upper levels. It is about 15 feet in width between the true hanging and foot walls. The ~~Gouge~~ gangue is schist with some soft bands of decomposed greenstone and the ore occurs as quartz lenzes in the schist, sometimes on the footwall, sometimes near the center, and again on the hanging wall of the vein. These quartz lenzes run from 2 feet to 4 feet in width, the very high grade in thin seams, while the full width of the lenzes should make a mill ore of a reasonable value, from $5.00 to $15.00 grade, altho while the shoots have been more or less defined in some places, further crosscutting should be necessary to give an accurate value with sampling.

From the actual mining work done in 1931 I understand three cars of ore were shipped to the smelter, that

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

just about covered the expense of its extraction, and clearly showed that to make a real mine and a commercial proposition it will be necessary to thoroughly develop the mine in depth.

For such development, the S. P. Carlin tunnel should be driven 1000 feet from its present face and Pat O'Hagan stated that this development was now contemplated. He inferred that the present Calincoln Mines Inc. had arranged to turn over their lease to a well financed New York group who expect to begin this development in October.

The Carlin tunnel will cut the main ore shoots at about 175 feet below the bottom of the Bradley winze, and there is a very good chance of its cutting other ore shoots between its present face and where it would intersect the downward extension of the old ore shoots.

O'Hagan also stated that even a more ambitious program was contemplated by the Eastern people and that there was a probability that a crosscut tunnel may be started from the level of the first old railway switchback below the mine, which would have to be driven about 2000 feet to the vein. This tunnel would cut the vein some 800 feet below the present workings, would save thousands of dollars in transportation costs to the mine, and, if a fair grade of mill ore was encountered in depth, would develop a tonnage that would permit most economical operations for many years to come.

Should the result of the mine development through the S. P. Carlin tunnel show good values in the ore shoots

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

that it may encounter, the contemplated development at lower depths would certainly be justified, and it is hoped that the Eastern people who contemplate taking over the present lease may have both the financial ability and the patience to undertake this work. I understand that this Eastern group have had several engineers examine the property and that such reports have been satisfactory to them.

TAXES

The only information I obtained derogatory to the present leasing company was an apparently temporary oversight in keeping up the taxes on the patented claims of the property.

The taxes due December 1931 and June 1932 had not been paid on September 10, 1932. Total taxes assessed against the Rough Rider, Yellow Jacket, Quien Sabe (less 150' x 1500'), Norman, Alone, S. P. Carlin, and the Admiral and Valley View mill sites, originally amounted to $188.70, but are at this date increased with penalties to $212.21.

The taxes on the Watsonville claim and westerly 150' x 1500' of Quien Sabe stand as follows: the first installment, December 7, 1931, was paid by Chas. C. Miller, Jr. for M. F. George but the second installment due June 1932 has not been paid.

Regarding the American Girl claim which is held by location, I found Proofs of Labor had been filed and recorded for years 1927, 1928, 1929 to July 1930. No Proof had

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

been filed for the year from July 1930 to July 1931 but as the Calincoln Company was operating during that period, the cost of road work necessary to maintain the road to the properties could be allocated to such Proof of Labor necessary to protect this claim. There was no assessment work required for the year ending July 1932.

CONCLUSION

The present leasers now have the property in very much better shape than when I visited it in 1928, and have apparently expended about $50,000.00 in rehabilitation and maintenance. They have done very little actual mining or development which, unless it had been carried on in the Carlin tunnel, would not have been to any great advantage to the owner company, for work below the old long tunnel level would be difficult to maintain and only at a constant pumping expense.

The power line is up and paid for and there only lacks the transformer to start the electrical equipment.

The most important thing to know is who the Eastern people are, with whom the Calincoln Mines Inc. has arranged to finance and develop the property, and what are their plans.

This information is undoubtedly in the hands of Mr. Chas. C.Miller, Jr. Trustee, 601 West Adams Street, Phoenix, Arizona.

I would suggest you write Mr. Miller that he have the Calincoln Mines Inc. immediately cover the taxes that are

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

past due, and that he give you all information he may have regarding the personnel and financial standing of the Eastern group that expect to take over the lease.

I beg to remain,

Very truly yours,

Alex B Carpenter

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Table No-1

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Record taken from original Smelter return sheets, ore and concentrates.

----------00000----------

	Date	Pounds Weight	Kind	oz. Gold	oz. Silv.	% Cu.	Gross pr ton	Net per ton	Total payment	Freight
	July 31, 1905	45,432	conc	1.60	26.6	5.70	$58.28	$42.92	$ 905.22	$ 95.80
	Aug 3	50,350	conc	1.70	30.0	3.90	58.25	41.80	1026.19	95.36
	" 8	44,328	ore	1.00	16.5	3.10	35.30	17.10	373.32	83.06
	Sept. 25	52,735	conc	1.75	33.8	6.00	67.86	61.15	1563.97	125.00
	Oct. 19	38,750	ore	1.70	27.0	7.30	65.62	57.56	1104.06	264.50
	" 30	48,000	"	1.76	27.6	7.30	62.71	54.31	1256.44	39.60
	Nov. 4	25,775	conc	1.70	29.5	7.00	67.32	60.23	737.46	149.21
	" 4	14,450	ore	2.30	31.8	6.80	97.11	70.10	501.43	103.79
	" 18	52,040	"	1.19	22.0	4.80	44.49	34.23	879.99	57.50
	" 23	74,330	"	1.35	19.9	5.01	51.08	41.42	1523.97	139.37
	Dec. 19	60,0000	"	1.60	19.6	5.30	56.46	47.02	1356.99	75.00
	" 19	44,000	"	1.14	15.7	3.50	40.59	30.33	645.90	50.60
	" 22	44,000	"	1.30	23.3	6.39	54.60	54.30	971.68	39.95
	Jan. 11, 1906	31,300	"	2.42	35.2	6.66	87.92	78.27	1210.21	55.00
	" 12	50,000	"	1.80	21.9	5.677	65.84	56.27	1378.61	75.00
	" 21	53,720	"	1.35	28.7	6.30	62.68	53.18	1398.42	80.60
	Feb. 12	47,220	"	1.25	33.2	6.21	63.12	52.87	1218.28	75.20
	Mar. 21	55,350	"	0.20	9.6	4.68	21.79	11.48	298.07	45.67
	Apr. 2	50,556	"	0.15	8.7	3.87	19.51	9.32	221.47	41.70
	" 17	50,920	"	0.19	9.2	3.18	18.72	6.14	202.26	42.00
	May 8	55,220	"	0.26	13.8	5.62	30.17	20.95	560.50	63.85
New Mill	" 29	53,720	conc	2.19	29.0	7.92	86.60	78.42	1925.21	80.60
	June 1	44,820	ore	0.24	13.4	6.02	30.93	21.67	461.20	42.90
	" 12	49,220	"	0.46	15.3	6.35	37.61	26.45	678.45	56.60
	" 12	51,300	conc	1.66	23.2	7.59	71.94	63.41	1485.69	76.95
	July 2	49,060	"	1.57	24.4	8.64	72.90	64.90	1458.24	75.00
	" 18	42,120	ore	0.32	10.0	4.86	26.51	17.51	362.12	48.75
	Aug. 17	49,930	conc	2.30	26.2	7.66	85.32	77.38	1840.87	75.00
	Oct. 5	36,080	conc	1.97	25.8	6.64	77.87	69.04	1124.66	66.00
	" 25	43,320	ore	2.32	19.1	4.68	75.36	64.15	1297.75	66.00
	Nov. 13	54,820	"	2.61	34.8	5.72	94.96	84.18	2242.72	90.00
	Dec. 1 1	36,060	"	0.90	15.5	4.04	43.10	31.42	539.86	
	" 1	16,160	conc	2.34	36.8	10.54	110.79	102.39	782.57	78.35
	" 28	49,620	ore	1.76	20.5	4.46	65.12	53.74	1258.50	74.45
	Jan 17 1907	62,090	"	3.58	27.0	4.56	106.43	95.36	2860.85	122.60
	Feb. 11	59,300	"	3.41	24.0	3.87	98.51	87.21	2430.60	90.00
	Mar. 19	77,120	"	3.21	23.7	4.32	96.76	86.27	3130.30	115.70

Table No 2.

BULLION FROM MILL.

Copied from original mint return sheets.

	Date of rec't at mint.	Gross wt amalgam ozs.	Value of gold	Value of silver	Charges.	Net am't paid.	
Old Mill Five Stamps	June 17 1905	92.40	$895.09	$19.05	$4.38	$ 909.76	
	July 21	96.35	1154.34	18.29	4.70	1167.93	
	Aug. 4	70.00	897.25	10.58	3.63	904.20	
	" 31	64.55	838.13	11.77	3.59	841.31	
	Sept 13	40.40	455.27	9.20	2.62	461.85	
	Oct. 9	30.00	298.35	8.06	2.18	304.23	
New Mill	June 2 1906	33.64	406.33	7.32	2.36	411.29	
	July 19	32.20	353.71	7.24	2.27	358.68	
	Aug. 20	59.40	527.29	16.53	2.17	541.65	
	Sept. 14	62.05	410.55	20.14	2.01	428.50	Said
	Oct. 11	50.43	406.20	15.92	2.19	420.11	to be
	Nov. 2	26.86	251.87	8.25	1.54	258.38	from
	Apr. 26 1907	-----	Mint record lost		-----	501.85	
	May 10	-----	" "	"	-----	1160.77	310 tons
	" 22	56.08	735.13	10.80	3.22	742.71	
	June 7	75.35	883.39	14.98	3.83	894.54	142 "
	June 20th	71.58	859.52	14.52	3.70	870.34	145 "
	July 10	81.34	949.69	16.91	4.060	332.54	128 "
	" 19	51.61	587.11	11.42	2.89	575.64	92 "
	Aug 5	49.16	570.79	9.241	2.75	577.28	95 "
	" 21	31.45	349.71	7.15	2.17	354.79	57 "
	Sept 7	33.48	363.48	7.74	2.22	368.98	62 "
	" 25	26.48	316.09	6.61	2.05	320.65	
	Oct. 5	39.95	448.09	8.57	2.48	854.18	
	One liquidation appears lost.						
	Nov 6	57.90	548.37	12.14	2.99	557.52	
	" 21	56.16	475.22	7.82	2.54	48.50	
	Dec. 10	23.56	262.95	3.91	1.84	265.03	
	Apr. 29 1908	46.35	478.11	9.75	2.86	485.00	78 "
	May 7	43.60	471.79	7.89	2.71	476.97	70 "
	Feb. 10 1910 to June 2nd, according to Bank record					2951.95	

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Table No 3

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Date	Pounds weight		Oz. Gold	Oz. Silv	% Cu	Gross per ton	Net per ton	Total payment	Freight
Jan. 17, 1907	62,090	ore	3.58	27.0	4.56	$106.43	$ 95.36	$2860.33	$122.60
Feb. 11	59,300	"	3.41	24.0	3.87	98.51	87.21	2430.60	90.00
Mar. 19	77,120	"	3.21	23.7	4.32	96.76	86.27	3130.30	115.70
Apr. 11	68,000	"	4.29	26.0	4.41	118.51	108.20	3520.61	132.60
May 10	59,460	"	3.26	28.9	5.31	103.73	92.68	2719.50	117.00
May 16	29,720	Conc	3.00	25.4	5.76	100.00	91.33	1209.20	55.70
June 19	18,652	"	not off original			82.70		684.20	
July 6	47,400	Ore	1.83	22.2	4.11	65.69	53.96	1230.20	102.35
" 12	20,860	Conc	3.34	22.9	4.23	97.42	88.42	839.00	104.50
" "	48,800	Ore	3.28	24.2	3.96	94.17	83.27	1970.80	
Aug. 15	21,720	Conc	4.06	27.5	5.22	115.79	106.34	1045.10	126.15
" "	42,960	Ore	3.73	37.6	7.36	121.25	110.82	2301.85	
Sept. 13	64,740	"	3.21	39.6	6.39	106.30	95.92	2990.00	126.25
Oct. 17	54,000	conc	(Oct.						
" "	-------	ore	(not off original, none made)					3370.00	Smelter failed loaned by Bank on the shipment
Feb. 1, 1910	16,740	Conc	1.61	30.2	8.60	61.28	56.24	423.15	Prepaid
Mar. 8	21,681	"	1.84	20.7	5.55	55.74	50.74	503.29	24.94
Apr. 12	15,119	"	2.23	20.3	4.32	61.06	55.79	385.90	20.51
May 10	15,456	"	1.82	16.3	4.90	51.78	45.77	341.67	
" "	12,513	ore	.71	13.4	5.40	28.35	19.09	117.29	25.40
" 24	8,548	conc	1.68	18.8	7.40	53.18	50.00	203.00	9.82

Table No-4

SUMMARY OF PRODUCTION

1905.

210.0 tons of ore shipped	@	$51.20	equals	$10,764
87.1 " " conc "	@	58.40	"	5,445
Bullion "				4,589

1906.

182.5 tons of ore	@	$67.40	"	12,320
126.2 " Conc	@	80.60	"	10,290
173.7 " run of mine	@	26.00	"	4,517
Bullion				2,419

1907.

265.4 tons of ore	@	$101.20	"	26,875
45.5 " " conc	@	99.80	"	4,535
B ullion				12,867

For over the three years

657.9 tons of ore	@	$ 75.90	"	49.959
258.8 tons of concentrate	@	78.10	"	20,270
173.7 tons run of mine	@	26.00	"	4,517
Bullion				19.875

1090.4 tons shipped Total product $94,621.21

(Note-- @ means averaged.)
Values are gross per ton.

The shipments during 1910 are in all probability not complete and are therefor not detailed. It is probable that they amounted to about # 9,000.00

--------o--------

Over the period that a record of tonnage milled was recorded as shown on bullion return sheets, shows that

1031 tons milled plated $6,961.54 and concentrates during the same period were $ 3,777.50, equivalent to

	$6.75
Saved per ton on plates	
Saved per ton in concentrates	3.65
Total per ton milled	$10.40

At a saving of 70% shows milling ore to have run $15.00 per ton.

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This record is complete and covers all production during the time that the mine was operated except when Lincoln himself operated years before in a very small way.

O.W. Israel Jr.

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REPORT ON THE LINCOLN MINE

Made to M. F. George

The property known as the Lincoln Mine originally consisted of a group of six lode claims, Quien Sabe, Yellow Jacket, Rough Rider, S. P. Carlin, Norma and Alene, and two Mill Sites, the Admiral and Valley View, patented under Sur. No. 1599 A & B; the patent acreage being 112.56 acres.

There are also two unsurveyed claims, the American Girl, which is the Southerly extension of the S. P. Carlin lode, and the Rough Rider Fraction, located Oct. 2, 1927, covering a fractional piece of ground between the Rough Rider and the Yellow Jacket and the Watsonville.

The recent acquisition of the Watsonville lode, Sur. No. 2106 adds 11.965 acres to the acreage of the group, making at this time a total of 124.52 acres patented and approximately 30 acres of unsurveyed ground. The title at this time rests in the name of Charles C. Miller, Jr., Trustee.

There was another location in the group at one-time known as the Juniper lode, which was the Northerly extension of the Yellow Jacket lode, this claim was abandoned by the Company some years ago.

The property is situated in the Pine Grove Mining District, (better known as the Crown King District) Yavapai County, Arizona. The mill and surrounding buildings which have been the center of operation on the property is situated about two and a half miles from Crown King P. O. and is reached by a road which was constructed by the Lincoln Gold M. & M. Company prior to 1905. The building of the road would be considered quite an extensive operation even at the present time. Apparently it followed a surveyed grade and has some heavy rock cuts.

I doubt if it could be duplicated for $25,000.00 ~~at this time~~. There are some short steep pitches and at this time the surface material has been washed away, making it more difficult to negotiate than if it were in good repair and every-day use. The grade of necessity must be steep as the Lincoln mill is nearly 1,000 ft. higher than Crown King.

The Southern end of the property later referred to as the South Camp is at approximately the half way point on the road to the mill, and only a little over a mile from Crown King.

Until the first of this year the Crown King district has been served by a branch of the A. T. & S. F. R. R. running from Prescott, through Mayer, thence to Middleton and on up to Crown King, with several switch-backs between Middleton and Crown King.

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The portion from Middleton to Crown King, about 12 miles in length, has recently been abandoned, the rails removed and the roadbed turned over to the County for a highway. The roadbed is excellent and the grades easy, with a maximum of 4% for a short distance only.

The railroad still maintains twice a week passenger and freight service to Middleton, which is the nearest railroad shipping point to Crown King at the present time.

This is not as much of a drawback as it may seem, as ore or concentrates loaded at the Lincoln mill, for instance, can be hauled down-grade to Middleton for little more than it would cost to Crown King.

TOPOGRAPHY

The surface of the Lincoln groupe, in common with the entire district, is covered with a dense growth of oak and manzineta brush as well as some larger timber, and observations of formation have to be made from the trails leading to or from the different prospect holes. The harder, silicious strata being more resistant to erosion form the observable outcrops, whereas the more easily oxidized and decomposed strata are hidden by the underbrush and not visible unless cut by a trail or road.

The Crown King district as a whole is noted for its rugged topography. With its high points at an elevation of around 7,000 ft., the run-off from winter snown and torrential rains of summer have cut deep and steep sided canons, which are separated by sharp ridges. Fortunately, the erosion has been greatly retarded by the dense undergrowth.

At the North end of the Lincoln group one of these ridges divides the drainage between Muldoon Canon on the North and Poland Gulch on the South and East. The claims in a Southerly direction being cut by smaller gulches running Easterly into Poland Gulch.

GEOLOGY

The claims of the Lincoln group run about N. 25 deg. E. for 6,000 ft. and cover the contact between Yavapai Schist on the West and the Bradshaw granite on the East. A glance at the geol. sheet of the Bradshaw Quadrangle report shows in the vicinity of the Lincoln mine the marked northeasterly trend and parallelism of the schist-granite contact, the principal intrusive dikes and the larger gulches. The schist belt West of the Lincoln mine is only about a mile wide and the granite on the East only one half to three quarters of a mile wide, being separated from the main mass of granite intrusive by another and still narrower belt of schist.

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One of the maps (Plate 1) accompanying this report shows the relation of the schist-granite contact to the Lincoln group.

Throughout the length of the contact as shown I found the granite adjacent to the schist to be fine grained, with very little mica and having a marked shearing parallel to the contact. This condition prevailed for a width of 100 ft. or more beyond which the granite has its normal coarse texture with rounded outcrops. I do not know whether the sheared granite belt is a contact phase of the main mass or whether it is a later intrusion of similar granitic material.

The Yavapai schists in the vicinity of the Lincoln mine are silicious and dark-colored from the predominance of ferro-magnesian minerals. Their strike is uniformly Northeast and Southwest with a dip of 65 to 70 degrees to the Northwest. In a few places I noted lenses of fissle sericitic schist, but they were of small extent except in the immediate vicinity of the Lincoln vein, which will be mentioned later. In following trails over the surface and examining the numerous shallow shafts and cuts one might be led to remark that the old prospector always chose a soft place to do his digging. It will be noted, however, that he was usually digging on a vein of quartz or ore; the conclusion being that the veins and stringers of quartz followed, or were in some way a product of the softer schistose beds and are not found in the hard outcrops which form the backbone of the ridges throughout the district.

Considerable prominence has been given in previous reports to the so-called "iron dike", which is said to lie about 150 ft. West of the Lincoln vein and parallel to it. It shows a great deal of quartz in wavy bands and bunches with intermediate strata of rusty mica / r chlorite and hematite. Some of the fragments carry a large percent of iron. I take it to belong to the Yavapai schist formation and it may have been a bed of conglomerate or a series of overlapping lenses. It is comformable with the schistosity and outcrops prominently on account of its hardness.

Intrusive Rocks

The oldest intrusive I noticed is a dike of dark green diorite having a width of 50 or 60 ft. and cutting diagonally across the Yellow Jacket claim. It cuts across the schists and is in turn cut by the Lincoln vein. I did not have time to trace its relation to the granite contact on the East. Its position as far as noted is shown on the accompanying plat.

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Light Colored Dikes

These dikes are the latest intrusions. Presumably they are rhyolite porphyry and similar to others in the district which are mentioned by Dr. Lindgren and other geologists. Generally speaking, they follow the schistosity but may cut across it at acute angles. Some of them are entirely barren of mineral; for example, the one 50 ft. or more in width, which shows on the trail above the S. W. Cor. of the Quien Sabe claim. Others bear an intimate relation to the veins and cannot be disassociated from them.

The surface geology of the Yellow Jacket and Rough Rider claims is indicative of rather different conditions than are found in the Southern part of the group.

The Rough Rider runs Northerly along the summit, which divides the drainage between Peck Canyon and Poland Creek. The top of the ridge shows more of the light colored silicious rocks with numerous stringers and some prominent outcrops of quartz. Small areas of schisted diorite were noted and a strong rhyolite dike. The North end of the Yellow Jacket also has some large quartz outcrops.

I have mentioned elsewhere the wide cropping of quartz in the vicinity of the Lincoln vein at about the center of the Yellow Jacket claim. Prominent quartz outcrops are entirely lacking in the Southern claims of the group.

The dump of the old patent tunnel on the Yellow Jacket shows black schists of hornblende, iron and chlorite. If the surface of these claims could be stripped of its soil and vegetation it might prove very interesting.

The association of outcrops of quartz, diorite dike and chlorite schists is suggestive of possible copper mineralization at depth. The reported 40 oz. silver ore in the North winze of the tunnel also indicates a change in the predominant gold mineralization of the Lincoln vein.

VEINS

The Lincoln vein probably originated as a simple fissure which in general follows the schistosity of the enclosing rock but may cut across it in places. The later deposition of quartz and minerals was influenced largely by the structure and composition of the rocks forming the walls of the fissure. Throughout its length the vein may be divided into three segments for convenience and description. In the South segment, through the S. P. Carlin claim, the vein is accompanied by a narrow belt of light colored sericite schist, which is flanked by massive, dark colored hornblende rocks on either side. The soft, disintegrated schist shows on the West side of the mouth of the

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South Camp tunnel for only two or three feet in width. Assuming the tunnel was run in similar material, the total width of schist would be only seven or eight feet.

Practically the same condition exists throughout the length of the S. P. Carlin claim, with a possible widening of the schist lense in the vicinity of the old discovery cut, which is 400 ft. from the South end of the claim.

The second segment, which is the Quien Sabe lode, shows a widening of the schist belt, a condition which is probably responsible for the Lincoln ore shoot. At the 75 ft. shaft, which is 130 ft. from the South end of the Quien Sabe, the soft schist shows a width of 40 ft. on the West side of the shaft and from the appearance of the soil, an equal width on the East, making a total width at this point of 80 ft. 350 Ft. further North at the mouth of the Quien Sabe tunnel the schist belt is narrow West of the tunnel, but has widened to 150 ft. on the East. It gradually narrows going North to a width of 100 ft. at the upper caved tunnel. At the North end line of the Quien Sabe it has narrowed down to about as it was through the S. P. Carlin lode.

The first three or four hundred feet of the third segment is about the same as the first; that is, eight or ten feet of decomposed, soft schist. A little further North there are some wide quartz outcrops, but I have not had an opportunity of studying their relation to the vein, and am leaving the North end of the property for further examination.

Throughout the length of the vein the West or hanging wall side consists of the dark colored, silicious and hornblendic members of the Yavapai formation. The same may be said of the East wall except through the Quien Sabe claim, where the sericite schist lense attains its unusual width.

I had little opportunity to study the structure of the vein at the surface as the old cuts and shaft are completely caved and I could only see it a few inches below grass roots. The discovery cut and one or two other holes on the S. P. Carlin showed a few inches of milky porous quartz with limonite stained vugs. Some of the larger fragments on the dump indicated a quartz width of ten inches.

The following paragraph in my former report was based on observations of the vein in the long drift of the Yellow Jacket tunnel:

"Using the term "vein" in its broad sense, I would say that the Lincoln vein was from six to fifteen feet wide and has a Westerly dip of 65 to 70 degrees. The foot wall being fairly well defined and regular as it is the original fissure. Along the foot wall is the main deposition of quartz and sulfides and parallel to it other and narrower bands of quartz separated by

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gouge or clayey material. The "paying" width of vein was probably the width over all, of the quartz part of it and varied from a few inches to three or four feet, with the probability that in places the values extend still further toward the hanging wall side. I presume that the mineralization and silicification originated along the foot wall fissure and proceeded toward the hanging wall side a distance depending on the permeability of the vein material and the pressure of the mineralizing solutions.

Apparently the vein is accompanied throughout the greater part of its length by a porphyry dike, which is difficult to distinguish in the surface openings from the narrow belt of schist, both are light colored and disintegrate completely to a sandy-kaolin mass.

CHARACTER OF THE ORE

I have been able to study the oxidized surface ores from the small piles left on the dumps of the numerous workings along the apex of the vein. Apparently the gold and silver values are carried in the quartz and were originally along with the sulfides, the complete oxidation of which gives the typical "iron ore" color and the vugy, porous structure of the quartz.

As to the unoxidized ores from the lower levels, the only opportunity I had to study them was from a pile of a few tons which had been sorted out or had spilled over at the mill ore bin. This pile was made up of chunks of quartz from a foot across to a small fragment. They showed sulfides in plenty, of pyrite and chalcopyrite a less amount of a gray sulfide, which was probably tetrahedrite. A considerable part of the value of the ore is in silver, which is probably carried by the gray sulfide, before referred to. I took a seven or eight pound sample from this pile of ore which assayed .64 oz. gold and 7.08 oz. silver, having a market value of $17.26 per ton, in addition to the copper, which was not determined. This pile of ore was at the mill bin and I suppose was intended for mill ore. One of the Engineers reports that the high-grade part of the vein was "solid sulfides" in places.

DEVELOPMENT AND PRODUCTION

The principal sources of information concerning the development and operation of the Lincoln Mine are the reports of Geo. Kislingbury, dated Oct. 5, 1905, and Bernard P. Miller, not dated but made subsequent to Jan. 1908. I have also had access to the letter files of the late Chas. T. Joslin, which have supplied considerable information lacking in the reports referred to.

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At the time of survey of this group of claims for patent in 1901 one of the improvements shown on the patent plat is a tunnel about 200 ft. long on the center line of the Quien Sabe lode. Ore was mined from the back of the tunnel and packed on burros to a two stamp mill located at the present mill site. Subsequent developments have shown the tunnel to be in the main ore shoot.

The owners must have soon realized there was little profit to be made by packing ore on burros to the mill and a new tunnel was run from the camp and mill site. In order to cut the vein the tunnel was run across the formation a distance of 395 ft. from the mouth and then southerly along the vein a distance of 1,627 ft. at which point it intersected a shaft, which had been sunk from the discovery tunnel before referred to.

This project must have cost considerable money, and in fact, very little development work has been done on the property since its completion prior to 1905.

The report of Kislingbury in Oct. 1905 states that ore was being stopped from above the tunnel, and that a five stamp mill had replaced the original two stamps. Also that the shaft in the ore body had been sunk 100 ft. below the tunnel level, and about 100 ft. of drifting both Northerly and Southerly from the shaft along the vein.

Smelter returns up to the date of the Kislingbury report indicated that about $8,000 had been received from the shipment of 1 car of $18 ore, 3 cars of concentrates running $40 to $60 per ton and six shipments of bullion netting $5,000. It appears from these figures that they were saving a large part of their values on the plates as might be expected in treating a thoroughly oxidized ore.

As far as I know this is the earliest record of production we have and it must represent only a small part of the ore mined from 1886 to 1905 of which we have no record. At this time they had the vein opened for a length of 200 ft. on the tunnel level and a small stope 50 ft. long and 50 ft. high the width of the best ore being about 30 inches. He mades an estimate of the ore in sight at about 1,200 tons of $33 ore and 1,200 tons of $9.50 mill ore. It should be remembered, however, that later developments showed the ore shoot to be 400 ft. long instead of 200 ft., and that it extended up to the level of the old Quien Sabe tunnel.

At that date, while the shaft was down 100 ft. below the tunnel level, no ore had been opened up, as the drift had not been extended far enough North.

The report and statement of Bernard P. Miller covers very fully the operation of the mine from Oct. 1905 to Oct. 1907.

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The following extracts are taken from his statement, many of the paragraphs being copied in full:

"The present owners during the first few years of development had a two stamp mill and a little later a five stamp mill, and milled ore from the grass roots down"...."the ore milled was an oxidized ore running entirely in gold used to plate from half an ounce to one ounce per ton, with several dollars going into the tailing dump. In the spring of 1906 the little five stamp mill was dismantled and an up-to-date fifteen stamp mill was put in, 1,000 lb. stamps, two Wilfley tables and three Fruevanners, which gave us a perfect concentration, and our tailings from this mill have run as a rule from $1.20 to $1.50."

"The mine was closed down on the first of Nov. 1907 owing to the closing down of the Humboldt Smelting plant forty miles distant, which owed the company for the October shipments."

"The mine has been operated to great disadvantage owing to the fact that the small hoisting plant would not do the work, and not more than ten or twelve miners have worked during the past few years, half of them in the stopes and the balance on keeping up the development work. The payrolls have run from $2,000 to $2,500 per month, which includes supplies, and the ore shipments and returns from mill have generally run in excess of these figures."

Mr. Miller gives a detailed statement of the smelter returns by carlots, of which the following is a summary:

Oct.30,1905 to Dec.23,1905	6 cars-190.8	tons	$31.25	ton	$ 5931.31
Jan.31,1906 to Nov. 1906	7 cars-135	"	45.00	"	5141.75
Jan.11,1906 to Dec.28,1906	21 cars-462	"	45.00	"	20728.70
Jan.17,1907 to Oct. 7,1907	14 cars-523	"	90.00	"	29041.41
	Total ore and concentrates				$60843.17
	Bullion shipments				16095.23
	Total receipts				$76938.40

1310.8 tons

Mr. Miller has the following to say in regard to the shipments during the year 1906.

"The above ore and concentrates shipments to the Arizona Smelting Co. during the year 1906 amounted to the above figures ($20,728.70). The freight and treatment charges averaged about $12 per ton and the entire shipments for the year averaged $45 per ton net. This would have been considerably more had it not been for the fact that the Sup't. shipped seven cars of ore of such value that it should have gone to the mill instead of the smelter. It was in the rainy season when there was no way of sorting the ore. Had it not been for these shipments, the balance of the ore shipped would have averaged around $65 per ton net. This ore was taken part from the stopes above the tunnel and the balance below the tunnel level."

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In regard to the production during 1907 he has the following to say:

"The above ore and concentrates shipped to the Arizona Smelting Co. from Jan. 17, 1907 covering a period of nine months, amounted to the above figures ($29,041.41). This ore was taken from the stopes below the tunnel level. The highest value was from the stopes below the tunnel level. The highest value was $121.25 gross and the lowest was $65.69. The freight and treatment charges averaged about $14 and the net value of the ore from the entire nine months averaged a little better than $96.00 per ton. (I make it $90.00 per ton.)"

"The metallic content of the ore is in gold, silver, copper and iron; the greatest value lies in the gold and silver and the ore is free from antimony, arsenic and zinc. Between 40% and 60% of the gold is free, the copper occurs in chalcopyrite."

"As to the values within this shoot, it is interesting to note the value of the ore shipped to the smelter during the years 1905, 1906 and 1907, when the ore averaged $31.00, $35,00 and $95.00 per ton net. It will be seen that at greater depth the value of the ore has increased considerably; the stopes from the bottom level to the main tunnel have yielded remarkably rich ore." oxidized ore

"The most remarkable feature of the mine in this state of development is unquestionably the aspect of the ore body at the bottom level and in this case the indications are exceptionally encouraging."

"In the South drift of the lower level a new ore shoot seems to make its appearance and development in that direction may lead to the discovery of another important ore shoot."

The shut-down in 1907 to which Mr. Miller refers, marked the end of active production.

(Mr. M. F. George relates that according to his recollection the Smelter owed about $6,000 for ore shipments and that the mine closed down about two months later owing $5,000 or $6,000 which was made up personally by the owners.)

During the following years the property appeared to have been operated intermittently, but I have been unable to get a connected history. The following disconnected facts may be of later interest:

In 1911 about 42 tons of ore were shipped, which averaged $45 per ton. Presumably the ore came from the back of the main tunnel, North of the Quien Sabe stopes. In 1912 a cross-cut was run from the main tunnel level toward the "iron dike", a distance of 150 ft. It was reported that the ground was very hard and the dike had not been cut when work was stopped.

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In Nov. 1912 some work was started in the vicinity of the South Camp tunnel by a syndicate who raised $7,000 or $8,000 for the purpose. The work was in charge of J. H. Jones. From his correspondence I judge the work to have been trenching and open cuts, following stringers of ore which went off into the granite near the South end of the S. P. Carlin. It may have been that the South Camp Tunnel was started at this time.

During the latter part of 1915 and 1916 the main tunnel was cleaned out and retimbered and a shaft sunk to a depth of 175 ft. This work was in charge of D. H. Bradley, who in 1917 made a lengthy report on the property and advised sinking the shaft deeper. He states that the shaft was sunk close to the hanging wall, where the ground stood better. This shaft, now known as the "Bradley winze" is shown on the plan map Plate 2 and reference will be made to it later.

In 1918 some ore was mined from above the main tunnel in what is known as the Matheney stope, which is shown on the map. I have been told the ore taken out ran $35.00 but have not learned the amount shipped.

The foregoing portion of this report is largely a compilation of facts and opinions taken from reports of engineers and operators who were familiar with the mine during its operation, their observations being made while the drifts were being run and the stopes were open to inspection, and last but not least, while the impressions gathered were fresh in their minds.

At the date of this report (November, 1927) the Quien Sabe shaft, and all its workings, is completely caved and lost. The Bradley winze and the 40 ft. winze further North in the tunnel is full of water and the main tunnel is caved in places so as to be inaccessible to inspection fro the greater part of its length.

Any estimate we can make at the present time, of the value of the mine, must be based largely on facts derived from former reports, coupled with the existence of geological conditions which may influence our conclusion one way or the other.

Without committing myself at this time as to the profits to be derived, I am convinced of the probable downward extension of the ore shoot which has been mined to a depth of 100 ft. approximately, below the main tunnel level.

First as to its probable value. The best index we have to its value is the record of production in 1907 when the stope was mined out for a depth of 100 ft. below the tunnel level. The records show that the average net value of the shipments was $90 per ton. It is true that the average has been obtained by including the concentrates with the sorted ore shipments.

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But on going over the record and taking only the ore shipments, I find the average gross value to run from $51 per ton to $103.70 per ton, with an average net value only a little lower than that obtained by including the concentrates. Bernard P. Miller says in his report - - "The most interesting feature in a mine in this state of development is the aspect of the ore body at the bottom level, and in this case the indications are exceptionally encouraging".

My own experience has been that in ore shoots in which the values in gold and silver decrease with depth, as many of them do, that the decrease takes place at the water level, where the ores change from oxidized to sulfide ores. In this case the water level seems to be at the tunnel level, or a little below it. The reports all mention ores mined from the upper stopes as being thoroughly oxidized, while reference is made to the lower level as showing bunches of "solid sulfides". The small pile of ore, which I saw at the mill bin, was sulfide ore showing little oxidation.

I judge, therefore, that the change from oxidized to sulfide ore has taken place near the tunnel level and with an increase rather than a decrease in values. I feel justified, therefore, in assuming that the value of the ore is going to remain fairly constant for a considerable distance below the present bottom level of the shaft.

Second -- As to the probable dimension of the ore shoot. In this connection your attention is called to the "Longitudinal Section along the Lincoln vein" on Plate 3, accompanying this report.

The outlines of the stopes on Plate 3 are copied from the report map of Mr. Miller giving the conditions which existed at about the time the mine was shut down in November 1907. The ore shoot was 400 ft. long on the main tunnel level and stoped out for the full length, except for an intermediate section 40 ft. long which is also marked "ore" on his map, and may have been left as a pillar.

The ore shoot has a rake of about 45 deg. to the North and hence was not cut on the lower level until the drift had been extended about 160 ft. from the shaft. It is then stoped overhead for a distance of 175 ft. The North face of this stope was probably the working face when work was stopped, by the failure of the Humboldt Smelter (according to Mr. Miller). The drift had been extended for 85 ft. beyond the stope and assays noted on the map show 6 ft. of $8 to $10 ore, 3 ft. of $19.35 ore and 1½ ft. of $32.00 in different cuts. The North face of stope and for some distance ahead of the drift it is also marked "ore".

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Assays are also noted at the back of the drift for 50 ft. South of the South end of the stope, running from $8.00 to $12.00. Taking everything into consideration, I think we are justified in assuming that the ore shoot has been proved for a length of 300 ft. on the bottom level, with indications that it may be much longer. In this connection, I wish to call your attention to the location of the Bradley winze as shown on the plan map of workings.

The question naturally arises - If the ore shoot has a considerable extent in a Northerly direction on the 100 ft. level, why was it not cut by the Bradley winze?.

The ore lies on the foot wall of the vein, this is indicated in all the reports. The map shows that the North end of the 100 ft. level is swinging to the East and is approaching a point vertically under the tunnel level. In other words, the quartz foot wall streak instead of going down on the normal dip, is standing almost vertical between the 100 ft. level and the floor of the main tunnel.

Bradley says that his shaft or winze was sunk on the hanging wall of the vein which has a normal dip of 65 to 70 degrees to the West, and I have shown it on the map in that position.

It is easily seen that the winze is not in the ore and that to get the ore from the bottom of the winze it would be necessary to crosscut into the foot a distance of 40 to 70 ft. It is evident, therefore, why there is no ore in the Bradley winze and t hat it does not disprove the extent of the ore in a Northerly direction in the Quien Sabe stope.

Before making any recommendations toward the mining of the ore below the tunnel, I wish to present some additional facts which have a bearing on my conclusions.

In May 1912, Mr. C. T. Joslin engaged E. A. Wetmore, a Mining Engineer, to make a report and recommendations as to the further development of the Lincoln Mine. At that time the old workings were caved in and about in their present condition. Mr. Wetmore's report is confined to a comparison of costs between a new shaft in the old ore body and a tunnel which he advocates from the Southerly end of the S. P. Carlin claim.

In the next few years following Mr. Wetmore's report, an attempt was made to run the tunnel advocated by him, but was not sufficiently financed to carry it through. However, as a result a camp was established, partly on the North end of the American Girl and partly on the S. P. Carlin claim, and a tunnel started beginning near the end line of the S. P. Carlin claim and running into the hill for a distance said to be 467 ft.

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This is known as the South Camp Tunnel. The tunnel is said to have been open and accessible until very recently, but at the time of my inspection, the top lagging of the first set of timbers had given away and the soil had caved, blocking the entrance. There is a small stream of water running from the tunnel.

In his report, Mr. Wetmore estimates that the tunnel will cut the Quien Sabe ore body at a depth of 400 ft. below the level of the main tunnel from the mill. I do not agree with him, after going over the surface and taking the vertical angles with the Brunton compass, and would say that the vertical difference is nearer 300 ft. than 400 ft. However, if the weather was favorable, Mr. Wetmore's observation with aneroid barometer is probably more accurate than my estimate. An instrument survey should be made to determine the vertical depth with accuracy.

Mr. Wetmore's report concludes as follows:

"In conclusion, I will enumerate some of the advantages of the tunnel over the shaft plan.

1. The prospecting and development of the long stretch of new territory by the tunnel, which is not done by the shaft and in particular the depth of the tunnel in cutting deep ore shoots.
2. The lower first cost of the tunnel over the shaft as well as the lesser cost of equipment.
3. The lower cost of operating by way of tunnel and the much lower cost of ore extraction.
4. The doing away of all engineers, pump men and all other labor except trammers, by the tunnel.
5. No hoisting of ore or waste, all falls to tunnel by gravity.
6. No cost of handling water, all flows from tunnel by gravity.
7. A sure and abundant supply of water from tunnel for all purposes.
8. The cutting in half of all charges in getting supplies from station to location.
9. Lower rates of transportation on concentrates, etc. from mill to station.
10. Location of mill need not be changed till work is done and future of tunnel assured.

Having in mind the facts available in regard to the Quien Sabe ore body and the reasonable downward extension of the same which may be expected, I am of the opinion the Lincoln vein is worthy of further development with two objects in view; first, the extraction of the ore assured in the Quien Sabe ore shoot. Second, the exploration of 2,000 linear feet or more of the vein which has not been prospected. Furthermore, the only plan of development which I can endorse is the one advocated by Mr. Wetmore.

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I have considered the feasibility of a new shaft from the main tunnel level at the mill and, as far as the actual cost of construction is concerned, it would require about the same investment as the tunnel plan.

The deciding point against the shaft is the cost of operation, and particularly the cost of continual pumping of water, the quantity of which cannot be estimated at the present time.

The old workings for a hundred feet below the tunnel level are full either of water or of caved muck saturated with water. The draining of these old workings will add to the normal inflow of water besides being a source of annoyance and expense in stoping the ores.

The added cost of operation would also preclude the mining of a grade of milling ore, which would pay a handsome profit when mined through the tunnel.

In this connection it should be noted that the market value of ore is less today than it was in 1906 and 1907. Silver is somewhat lower and the net value of copper only about half what it was then.

If the shaft plan were adopted, the shaft would be located, of course, some distance North of the Quien Sabe stope and probably about 1,000 ft. from the cross-cut to the mill. The ore tram therefore would be 1,000 ft. plus the length of crosscut of practically 400 ft. or a total of 1,400 ft., which is more than half of the total tram required to get the ore out of the South Camp tunnel.

The shaft plan would also necessitate the cleaning out, retimbering and maintaining of the present tunnel level, which at the present time is badly caved in places.

There are many other objections to the shaft plan of development which I do not think necessary to mention, as most of them are enumerated in Mr. Wetmore's report.

The only argument I can think of in favor of the shaft plan is that the present camp site, with its buildings, and the mill in its present condition, could be used. Measured in dollars and cents, this advantage does not amount to much.

My second reason for advocating the South Camp tunnel plan of development is the probability of the tunnel opening up another body of ore, indications of which are found on the surface directly over the faceof the present tunnel.

There is every indication along the cropping of the vein at from 400 to 800 ft. North of the mouth of the South Camp tunnel of the apex of another ore shoot. Several shallow cuts show 3 Ft. or more of vein matter with iron stained quartz.

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On the dump of an old tunnel is a small pile of ore. The ore is a decomposed quartz with a great deal of limonite and hematite and must have originally been a very massive sulfide ore.

Samples from this dump panned gold freely and an assay from an average sample gave 1.07 oz gold and 1.01 oz silver value $22.68 per ton. Copper not determined.

On an old blue print which I have, there is a notation as follows - "4 ft. x 110 ft. surface ore $8 to $33 per ton", this being along the apex of the vein near the old tunnel above referred to.

These showings are in part directly over the face of the present South Camp tunnel. It is well known that ore shoots in the same vein, and, in fact, throughout the same district, almost invariably rake or incline in the same direction. If this ore shoot rakes to the North at an angle of 45 deg. (similar to the Quien Sabe shoot) it would still be from one to two hundred feet ahead of the face of the tunnel.

In consideration of the above showings, I fully expect that the South Camp tunnel will encounter ore within the next two or three hundred feet.

There are one or two other favorable features in connection with the Quien Sabe ore body to which I have not called your attention, which may indicate another shoot of ore to the North or a greater length on the same shoot.

For several years after the period of production ending November 1907 there were sporadic attempts made to work the Lincoln Mine. In one of these periods, approximately 1916 to 1918, some stoping was done above the main tunnel level in what is called the Matheney Stope. I have marked this stope on the longitudinal section Plate 3 with dotted lines as neither its exact location or its extent is accurately known. It is North of the Quien Sabe stope. I have been unable to get any figures as to the quantity of ore mined and only mention it to show a possible extension of ore in a Northerly direction.

Six or eight hundred feet still further North and about 300 ft. before the Crosscut to the mill is reached, there is a winze 40 ft. deep and now full of water, said to show three ft. of ore carrying forty ounces of silver to the ton. This is also mentioned in the report of Bernard P. Miller as a matter of hearsay only.

In a short cross cut 20 ft. South of the winze, there is exposed a body of solid quartz, eight ot ten feet wide and carrying a large amount of iron pyrite. An average sample carries only a trace of gold and silver. In spite of its not showing any value at this point I attach considerable importance to a body of quartz of this size carrying so much pyrite. It is

probably connected in some way with a point noted on the surface where the vein is 15 to 20 ft. wide with a large amount of quartz.

Taking it all together, thereis considerable evidence of a body of ore North of the old Quien Sabe ore shoot.

Indications of ore extending Southerly from Main Shaft, in regard to the possibility of ore being found South of the Quien Sabe shaft, it is evident that the former operators found some encouragement in that direction as the map shows a drift running 240 ft. Southerly from the shaft.

As quoted hereinbefore in Mr. Miller's report - "In the South drift of the lower level a new ore shoot seems to make its appearance, and development in that direction may lead to the discovery of another important ore shoot."

My recent examination of the surface shows that the widening of the soft schist belt starts South of the 75 ft. shaft near the South end of the Quien Sabe. The surface indications therefore are favorable and tend to substantiate Mr. Miller's belief that ore will be found in that direction.

LENGTH OF TUNNEL

The estimated length of tunnel will be subject to some revision when accurate surveys are made, but from the present information, I make it as follows:

Face of present tunnel to Quien Sabe South end line.....	970 Ft.
Quien Sabe end line to point under Quien Sabe shaft.....	630 "
Allowance for rake of ore shoot.....	300 "
Distance from end of present tunnel to beginning of Quien Sabe ore shoot.....	1,900 "
To this should be added the distance to be driven in the ore shoot, estimated.....	400 "
Total necessary for mining Quien Sabe ore shoot.....	2,300 "

The extension of the tunnel beyond the Quien Sabe ore shoot will probably be a matter for later consideration, depending largely on the value of the ore encountered and the appearance of the vein at the face of the tunnel.

I am estimating that the construction cost of the tunnel will run from $10 to $12.50 per foot, which will be referred to later.

The question arises as to the quantity of ore which may be anticipated in the Quien Sabe ore shoot below the old stopes.

The former reports have little information about the width of vein or the total tonnage of ore mined.

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However, the map with the report of Bernard P. Miller gives the outline of the stopes from which he says the output of ore for 1907 was mined. This was between the 100 ft. level and the main tunnel level, and shows an area of 18,000 sq. ft. of stoping, leaving the width of vein out of consideration. The production from this area was $29,040 in ore and $9,680 in bullion, or a total production of $38,720.

Assuming that the South Camp tunnel extension will gain 250 ft. of additional depth, we will have a block of ground 250 ft. x 400 ft. or 100,000 sq. ft. To be on the safe side say the ore shoot is only 300 ft. long which would give 75,000 sq. ft.

If the value of the ore and the width of vein is the same as above, the net smelter returns would be $162,540. The mining costs which would have to be deducted would depend so much on the width of the vein that it is impossible to estimate them at this time. It might be more profitable to run all the ore stoped through the mill, rather than sorting and shipping the high-grade, which has been done heretofore.

SOUTH CAMP SITE

The location of this camp site on the American Girl claim and about 100 yds. below the mouth of the tunnel is not as favorable as the old camp at the mill. The gulch is rather rough and narrow and the road is steep to the main Crown King road 150 yds. further down the gulch.

There are two small buildings now at the camp which can be repaired at small cost. I figure that you will have to provide housing for 12 or 15 men for the operation of the tunnel, and that additional buildings required will have to be moved from the old camp.

The starting of work on the tunnel involves the following preliminaries:

1. Repairs to roads and buildings at South Camp site.
2. Moving of two or three buildings, and mining supplies, cars, rails, pipe, tools, etc. from the old camp.
3. Providing water supply for domestic and mine use.
4. Extension of electric power line (commented on later).
5. Repairs to present tunnel, power house and shop.
6. Purchase and installation of machinery and supplies.

There are two small corrugated iron buildings at the mouth of the South Camp tunnel; one about 12 ft. square used for a blacksmith shop, the other of similar size for a change house. A new building would be required for a power house.

Expense of repairing the present tunnel is rather uncertain until it can be cleaned out at the entrance and examined. If there are no serious caves further in, the expense will be nominal.

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MACINERY AND EQUIPMENT

Following is a list of machinery required which I do not claim is complete and is for the purpose of estimating the outlay required for this purpose. Allowance should be made for additional items.

Ingersol-Rand Compressor, A.R.1 12x10 350 cu.ft. capacity with 60 H.P. Motor, installed	$2,750
Receiver for same	250
Blower and Motor, 2d hand	100
Leyner drill, with air hose, water hose and bar	500
Water tank for compressor, probably can be taken from old camp.	
Blacksmith shop equipment (without drill sharpener) est.	400
	$4,000

Small centrifugal pump and motor for shop.

MINING EQUIPMENT

Drill steel	$300	
2,900 ft. 1" water pipe)		
" " 1½" air ")		
" " 8" ventilating pipe)	2,800	
" " Track - 12# rail)		
Cars (unless old ones can be used)	300	
	$3,400	
	4,000	
		$7,400.00
As an approximate estimate of the cost items (1), (2) and (5) listed on previous page		850.00
Estimated outlay required to start work (except electric power line)		$8,250.00

I am unable at this time to give you figures on the cost of getting the Arizona Power line to the mouth of the South Camp tunnel. I believe you had a tentative arrangement with the Power Company for the extension of lines to the old camp, which it may be necessary to revise on account of the change in plans. Whatever expense is necessary should be added to the "Estimated outlay required to start work" of $8,250.00 given above.

OPERATING EXPENSES:

My estimate of costs is as follows, figuring two eight hour shifts per day:

Labor - 2 miners and 4 muckers	$ 30.00	per day	$100.00
Ammunition (powder, fuse and caps)	20.00	" "	
2 Engineers	11.00	" "	200.00
Blacksmith and helper	10.00	" "	35.00
Superintendent or foreman - - - - - - - - - - - - -	10.00	" "	30.00
	$ 81.00	" "	

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For month of 26 days	$ 2,100.00
Estimated power bill	400.00
	$ 2,500.00

If miners average 4 ft. per shift, cost per foot will be $12.50
If miners average 5 ft. per shift, cost per foot will be $10.00
(figuring 25 effective shifts)

You will notice in this estimate that the cost at the face of the tunnel (miners, muckers and amunition) is from $5.00 to $6.25 per foot. I doubt if you could get a contractor to run it for that price and furnish his own powder.

If anything, my estimate is too low and you will be fortunate to get the tunnel run for $12.50 per foot.

You will notice that I have not allowed anything specifically for cost of timber, ties, lubricating oils or blacksmith coal.

Possibly, labor costs at Crown King may be somewhat lower than I have figured them. I would estimate total cost as follows:

Equipment	$ 10,000.00
2,400 ft. tunnel at $12.50	30,000.00
	$ 40,000.00

MILL SITE AND WATER

Consideration of the mill question may come up on development of ore in the 1st shoot and in a short time after starting work.

The ore in the 1st shoot will be an oxidized ore, a large part of the values being recoverable on the plates.

I would advise that it be fully developed by a raise possibly through to the surface and the ore fully blocked out before making plans for a mill.

Its value then can be fully determined and continuous operation of the mill assured after it is started.

The possibility of a mill being required soon is an argument for extension of the electric power lines instead of using a hot head engine for the compressor, which might be considered if there was only that use for the power.

Without having investigated it in detail, I am satisfied that a suitable mill site can be found near the mouth of the proposed tunnel.

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WATER SUPPLY

The assumption may fairly be made that after the tunnel cuts the Quien Sabe ore body, that there will be ample water for milling purposes.

Until that time it may be necessary to develop other water resources.

With this idea in view, I would suggest the acquisition by location, or purchase if necessary, of the ground on which the old arrastra was located. This is a small meadow located East of the Quien Sabe and South of the Norma lode. The schist-granite contact runs through it and there is an old well with water standing to the surface and running over into two small ponds. I have no doubt but that a permanent water supply could be developed along the contact. By putting in a small gas engine pump, the water could be "boosted" over the first ridge and would have a fall of from 200 to 300 ft. from there down to the mouth of the tunnel. About 2,000 ft. of pipe line would be required.

The ground in question is said to be owned by Jim Lewis, who has a cabin there. It is a question as to how much work he has ever done to hold it, but he is an old-timer and has undoubted possessory rights.

My estimates have considered only the cost of tunnel to the limit of the Quien Sabe ore shoot, a distance of 2,300 ft. beyond the face of the present tunnel. I think, however, that you should seriously plan the extension of the tunnel to the full three thousand feet, as shown on the maps, and your financing with that end in view.

I am recommending the extension of the South Camp tunnel as a means of developing the Lincoln vein for a length of 3,000 ft. and for the economical extraction of the ore, and have discussed heretofore only the ore reserves above the tunnel level.

For mining ore below the tunnel it is evident that one or more shafts will have to be sunk below the floor of the tunnel. This method is entirely practical and is being used in many mines of this State. The miners of the United Verde mine at Jerome all enter the mine through a long tunnel and then down a deep shaft. The hoisting plant being in a station on the tunnel level.

Your tunnel will be available for this purpose, and the ore can be delivered at the mill irrespective of whether it is mined above the tunnel level or below it.

It is premature at this time to make definite plans for mining below the tunnel level as the location of shafts will depend on the position and size of the ore bodies developed by the tunnel.

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Finally, in recommending the tunnel plan of development, I have in mind the possibility of extending it beyond the limits of the Lincoln vein, and its use in the exploration and development of the Watsonville and other veins lying to the West and North.

The following notes on the Watsonville lode were made subsequent to the compilation of the foregoing report:

The Watsonville lode claim was located by Ernest R. Hill January 1, 1892 and patent issued August 31, 1905, the patented area being 11.965 acres.

The improvements at date of survey for patent consisted of a tunnel 341 ft. in length, a tunnel 65 ft. in length and three shallow openings.

The Watsonville vein runs through the middle of the claim about 300 ft. West of the Lincoln vein and is probably identical with and the North extension of the Elene vein.

While the Watsonville and Lincoln veins are apparently parallel there is some indication of their converging toward the North.

The Watsonville vein is similar to the Southerly end of the Lincoln vein, that is where the sericite schist lense is very narrow and the walls are hard silicious-hornblendic rocks. The vein dips Westerly at 70 degrees, the vein filling being quartz with pyrite and traces of copper. I do not recollect seeing any porphyry associated with it.

I believe the 65 ft. tunnel is partially open to inspection, but I did not go into it except to note that there was a small underhand stope near the entrance, the ore appeared to be tight and 6 in. to 18 ins. in width. A small quantity of iron stained quartz on the dump is said to run $12 to $14 per ton in gold. I understand that Mr. Strain milled some ore from here. The Watsonville fissure seems to be persistent in length for 2,000 or more feet and there may be some place throughout its length where the enclosing rocks are softer, permitting of more extensive mineralization than at the few places which came under my observation.

Its relation to the quartz areas on the Yellow Jacket should be investigated.

Respectfully submitted

Alfred B Coldwell E.M.

Prescott, Ariz.
Nov.15-1927

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Beverly Hills, California

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Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln G M M Co PRESCOTT, ARIZONA, January 18 1907

CLARKE & COURTS, LTD. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
	Lot 2418											
	Cu 30 3-36	3.16	63 20	26.3	18 41	81 61	4.5					

Humboldt, Ariz., Feb 9 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Feb 3	2529		30660		59300	6.		3.41	24.	4.30		Feb 4
H E Hetherington								3.56	24.5	3.95		

M. G. Burns
Ore Shippers' Agent.

OFFICE OF

R. H. Hetherington

PRESCOTT, ARIZONA July 31 1907

ASSAYED FOR Lincoln Gold M. Co.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

CLARKE & COURTS, STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron
Lot	3306										
Cas	26608	3.28		24.1							
Lot	3307										
Cas	26608 Concs	3.34		23.2							

Humboldt, Ariz. July 12 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles, Calif

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped

DATE WEIGHED IN	LOT SHIPPER | SMELTER	CAR NO. | INITIAL	WET WEIGHT	H2O per ct. | CONT.	ASSAY AU. OZ.	AG. OZ.	CU. per ct.	PB. per ct.	DATE SAMPLED	
July 3	Ore 3306	26608	48800	3.	3.28	24.2	4.40		July 7	
" "	Concs 3307	"	20860	9.	3.34	22.9	4.70		" "	
				23¾ mt	65.60	15.60	15.50		$96.70	1900
				9½	66.80	15.00	16.20		98.00	500

M. G. Burns
Ore Shipper's Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Fm & Mn Co

PRESCOTT, ARIZONA, Feb 8th 1907

CLARKE & COURTS, LTD. SEALTHONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron		
	Lot 2539												
	Ca 30660	3.56	71 20	24.4	17 15	88 35	1.35						

Humboldt, Ariz., Jan 17 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Calif

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Ariz

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Jan 11	2418		30336		62880	4.6		3.58	27.	507		Jan 14

M G Burns
Ore Shippers' Agent

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Humboldt, Ariz., Oct 6 1906

Mr. Lincoln Gold Mining & Milling Co

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Oct 2	1770		17835		36080	9.7		1.97	25.8	.738		Oct 3

Humboldt, Ariz., Aug 20 1906

Mr. Lincoln Gold Mg Co

DEAR SIR: This is to advise you the weight, moisture aud assay of the following lots of ~~ore~~ concentrate shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Aug 12	1301		25979		49980	4.8		2.3	26.2	.851		Aug 14
Settlement								au. 2.24	ag. 12.	cu. 6.30 %		

M. G. Burns
p.c.
Ore Shippers' Agent.

NEAVES' PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Humboldt, Ariz., April 5 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Mch 31	2809		26892		68000	4.3		4.29	26.	4.90		Mch 31

Humboldt, Ariz., Oct 16 1906

Mr. Lincoln Gold Mining & Milling Co
Crown King Ariz

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Oct 9	1839		17390		43320	6.6		2.25	19.1	5.20		Oct 11
								45.00 Gold	13.c Silver		16.50 Copper	Total 74.50 Per Ton
								Cny Agent	13.50.			

M. G. Burns
Ore Shippers' Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

A. O. D. 464. 20M. July '07.

Memorandum of Gold Bullion Deposited with SELBY SMELTING & LEAD CO. for Refining.

San Francisco, APR [illegible] 19[illegible] Merchants Exchange Bldg. *By* The Anglo Californian Bank, (Ltd)

DEPOSIT NO.	WEIGHT IN OUNCES		GOLD			SILVER			CHARGES	NET VALUE
TRIPLICATE	BEFORE MELTING	AFTER MELTING	FINENESS	FINE OUNCES	VALUE	FINENESS	FINE OUNCES	VALUE		
Amal lump 25 dirty	1163 5	42 13	[illegible]	26 12	[illegible] 11	[illegible]	11 [illegible]	9[illegible] 5	2 16	465 —

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Gm Co PRESCOTT, ARIZONA, Mar 15 1907

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron
	Lot 5680										
	Cu 71034	3.32	66.40	24.1	16.87	83.27	4.14				
	Smelter	3.21		23.7			4.80				

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Gm Co PRESCOTT, ARIZONA, July 8 1907

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron
	Lot 5539										
	Cu 30660	3.56	71.20	24.5	17.15	88.35	3.75	= 1/100.15			
	Smelter	3.41		24			4.30	= 1/105.20			

Gold at $20.00 per oz.
Silver at 71

R. H. Hetherington
ASSAYER.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

PRESCOTT, ARIZONA, Nov 8 1906

ASSAYED FOR Lincoln Min Co

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
	Lot 1839	2.42	48 40	14.4	13 58	61 98				62	14.5	

OFFICE OF
R. H. Hetherington

PRESCOTT, ARIZONA, Sept 24 1907

ASSAYED FOR Lincoln Min Co

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
	26 sgn											
Lot	2809	4.3	86 60	26.3	18 41	104 44	5.4					

Gold at $20.00 per oz.
Silver at 70

R H Hetherington ASSAYER.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Inv Co. PRESCOTT, ARIZONA, Nov 5 1906

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron		
	1839						4 85						

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Inv Co. PRESCOTT, ARIZONA, Dec 26th 1906

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron		
	Lot 2279												
	Cu 17643	1 76	3 520	21 5	15 05	50 25	4 7			63 5	13 4		
	Smelter	1 76		20 5			14 86			17 2	13 4		

Gold at $20.00 per oz.
Silver at 70

R. H. Hetherington
ASSAYER.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

A. O. D. 464. 20M. July '07.

Memorandum of Gold Bullion Deposited with SELBY SMELTING & LEAD CO. for Refining.

San Francisco, ... Merchants Exchange Bldg. By The Anglo California Trust

SAN FRANCISCO

DEPOSIT NO. TRIPLICATE	WEIGHT IN OUNCES		GOLD			SILVER			CHARGES	NET VALUE
	BEFORE MELTING	AFTER MELTING	FINENESS	FINE OUNCES	VALUE	FINENESS	FINE OUNCES	VALUE		
Alice Lumpo 224 (mix 5)	1360	21 26	5502	22 128	471 74	897	1719	719	2 71	471 99

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR E J Longe

PRESCOTT, ARIZONA May 29th 1905

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT. Copper Wet	Lead	Zinc	Silica	Iron
	No 1	1 25	25 00	35 0	17 50	42 50	8 4/10				
	No 2	1 54	30 80	29 0	14 50	45 40	9 6/10				

OFFICE OF
R. H. Hetherington

ASSAYED FOR E J Longe

PRESCOTT, ARIZONA Mar 30 1905

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT. Copper Wet	Lead	Zinc	Silica	Iron
	No 1	6/10	12 00	9 6	4 80	16 80					
	2	5/10	10 00	8 6	4 30	14 30					
	3	42/100	8 20	24 2	12 10	20 30					
	4	4/10	8 00	63 8	31 90	39 90					

Gold at $20.00 per oz.
Silver at 50

R H Hetherington
ASSAYER

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Fm Co

PRESCOTT, ARIZONA, Apl 4 1907

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron
	Car 26 8 gr										
	Lot 2809	4 3/10	86 00	26 3/10	18 41	104 41	5 4/10				

Humboldt, Ariz., Mch 14 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Mch 6	2680		71034		77120	5.9		3.21	23.7	4.80		Mch 10
						H2O Weight		3.32	24.0	4.85		
					36 1/2 Tons	Net		6.42	16.10			

M. G. Burns
Ore Shippers' Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

R. A. PEREZ, E. M.

ECOLE DES MINES DE PARIS FRANCE

ANALYTICAL CHEMIST
AND
...ASSAYER...
120 NORTH MAIN STREET

Home 'Phones { OFFICE 6800 / RES. 2168

MEMBER OF AMERICAN INSTITUTE OF MINING ENGINEERS

AMALGAMATION AND CYANIDE TESTS MADE

Assay and Analysis Certificate

Los Angeles, Cal. AUG 11 1905

I hereby certify that the samples of pulped ores *received from* C. J. George Co
gave the following results:

Sample. No.	Owner's Mark on Sample	FIRE ASSAY							WET	
		OZS. per TON of 2000 lbs.				Value per Ton in Gold & Silver		Per cent. Lead	Per cent. Copper	
	Control assays	Gold		Silver		$	cts.			
271.85	Lincoln Gold Mine Lot 1740	1	60	27	12	—	—		7.25	%
186	" " " " 1744 (Conc)	1	57	28	26	—	—		6.30	%
187	" " " " 1744 (Ore)	1	00	16	80	—			4.21	%

Charges, $

R A Perez
Assayer and Chemist

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Humboldt, Ariz., June 12 1907

Mr. Lincoln Gold Mining & Milling Co
Crown King

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King
Concentrates

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
June 7	3156		28992		20860	10.5		2.33	24.6	5.40		June 8
								1.60	15.20	19.40		

mo
Ore Shipper's Agent.

TELEPHONE 1087 — ESTABLISHED 1878

Certificate of Assay

FROM

HENRY E. WOOD & CO.,

1734 Arapahoe Street, DENVER, COLO.

I hereby certify, That the samples assayed for Arizona Smelting Co.,
gave the following result per ton of 2,000 pounds:

Gold at $ ..... per oz Silver at ..... cts. per oz.

MARKED	GOLD, OZS.	SILVER, OZS.	LEAD, PER CENT.	Wet Copper, PER CENT.	ZINC, PER CENT.	IRON, PER CENT.	SILICA, PER CENT.	PER CENT.	VALUE
Lincoln G.M. Co. Lot 2961 car 40217 Umpire	3.22								

May 31, 1907. Charges. $ $3.00 Henry E. Wood
ASSAYER

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Mr. Lincoln Gold Mining & Milling Co
Crown King Ariz

Humboldt, Ariz., June 13 1907

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Ore.

DATE WEIGHED IN	LOT SHIPPER | SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CON'T.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
June 7	3155	28992	Sh Dunfleen	47400	3.8		1.81	22.2	4.60		June 10
							36 00	13 00	16 55		65 75

M. G. Burns
Ore Shipper's Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Iron Co.

PRESCOTT, ARIZONA June 18th 1907

CLARKE & COURTS, LTD. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron
Lot	3155										
Car	28992	1 84/100		21 8							
Lot	3156										
Car	28992	2 34/100		23 9							

Gold at

Silver at

TELEPHONE 1087

Certificate of Assay

FROM

HENRY E. WOOD & CO.,

1734 Arapahoe Street, DENVER, COLO.

ESTABLISHED 1878

I hereby certify, That the samples assayed for Arizona Smelting Co.

gave the following result per ton of 2,000 pounds:

Gold at $ ..... per oz Silver at ..... cts. per oz.

MARKED	GOLD, OZS.	SILVER, OZS.	LEAD, PER CENT.	Wet Copper, PER CENT.	ZINC, PER CENT.	IRON, PER CENT.	SILICA, PER CENT.	PER CENT.	VALUE
Lot 2998 concentrates - Lincoln C.M. Co. car 6188 Umpire	3.06								

June 5, 1907. Charges. $ .....

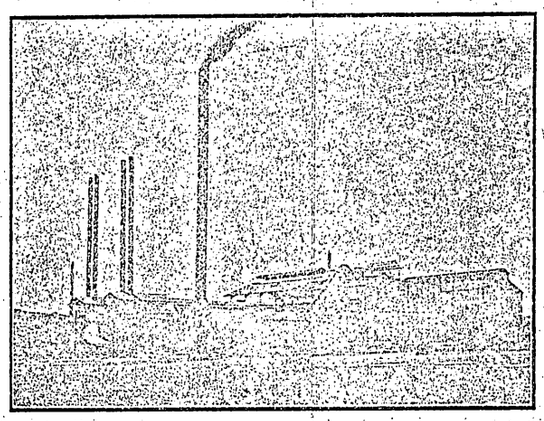
Henry E. Wood
ASSAYER

Consolidated Arizona Smelting Company

BUYERS OF
Gold, Silver and Copper Ores
and Copper Matte

T. H. OXNAM,
Vice-President and General Manager

E. H. HAMILTON,
Metallurgist and Gen'l Superintendent



NEW YORK OFFICE
71 BROADWAY

J. L. ELLIOT,
President

WILLIAM SCHALL,
Treasurer

HUMBOLDT, ARIZONA. July 13, 1907

Lincoln Gold Mining & Milling Co.,
Los Angeles, Cal.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Gentlemen:-

Replying to your favor of the 10th inst., beg to advise you that returns on our lots #2961 and 2998, are as follows:

Lot #2961:

Gold ozs.	
3.26	First assay
3.33	Repeat
3.68	Mine
3.22	Umpire.

Corrected settlement made on 3.33 ozs.

Lot #2998:

Gold ozs.	
3.06	Repeat
3.21	Mine
3.06	Umpire

Corrected settlement made on 3.06 ozs.

We are under the impression that copy of each of the umpire assay certificates were mailed you some time ago. We will look into this matter and advise you further.

The corrected settlements have been made up but the checks have not been drawn owing to the settlement clerk trying to catch up after the Fourth of July holiday. We will have these mailed to you within thenext day or two, whichwe trust will be satisfactory.

Assuring you we are only too glad to answer your inquiries at any time, we remain,

Yours very truly,

T. H. Oxnam
Emp

General Manager

C/S

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

G. E. ALEXANDER,
ASSAYER, CHEMIST AND MINING ENGINEER,
Telephone 2143. Cyanide Testing a Specialty. 1736 CHAMPA ST.

MARK OF SAMPLE | ASSAYED FOR

No	OZS. GOLD	OZS. SILVER	PER CENT LEAD	PER CENT COPPER WET	PER CENT ZINC	PER CENT SILICA	PER CENT IRON	PER CENT MANGANESE	PER CENT Value
1	1 44	27 20	1 1	8 3		4 8	38 4		45 12
2	0 86	40 20	1 8	11 1		10 8	29 3		41 32
3		1 32		0 8					2 81
4	0 10	1 40		0 8					2 84
(ore)	0 10	6 32		2 2					10 60
	0 34								

VOL. PAGE 120
DENVER, COLO. 190
CHARGES, $

R. C. Alexander

Humboldt, Ariz., May 14 1907

Mr. Lincoln Gold Mines
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Concentrates

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
May 8	2998		6188		29720	10.9		3.	25.4	640		May 8
								60 oz	16 45	23 05		

M. G. Burns
Ore Shippers' Agent

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

PRESCOTT, ARIZONA, Sept 18 1905

ASSAYED FOR Lincoln Min Co
Chas J George

CLARKE & COURTS, LTD. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
		1.25	25 60	21.7	10 85	36 45	4 N					

Humboldt, Ariz., May 8 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Ore

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
May 1	2961		40217		59460	13		3.26	28.9	5.90		May 3
								65.20	18.15	21.25		

29 Tons 317

M. G. Burns
Ore Shippers' Agent

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

ASSAYED FOR Lincoln Gold Mining Co PRESCOTT, ARIZONA, Sept 14 1907

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
	Lot 3578											
	Car 29010	3.14		39.1								

Humboldt, Ariz., Sept 11 1907

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Sept 7	3578		29010		64740	3.7		3.21	39.8	7.10		Sept 5
								64.00	96.00	15.50		4/05 50

M. G. Burns
Ore Shipper's Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Humboldt, Ariz., Nov 10 1906

Mr. Lincoln Gold Mining & Milling Co
Crown King

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King

DATE WEIGHED IN	LOT SHIPPER / SMELTER	CAR NO. / INITIAL	WET WEIGHT	H2O per ct. / CONT.	ASSAY AU. OZ.	AG. OZ.	CU. per ct.—PB. per ct.	DATE SAMPLED
Nov 2	2014	23398	5482.0	2.8	2.61	34.8	6.36	Nov 7 $100
					52 24	23 50	20 70	

Humboldt, Ariz., Dec 26 1906

Mr. Lincoln Gold Mining & Milling Co
Los Angeles Cal

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Ariz

DATE WEIGHED IN	LOT SHIPPER / SMELTER	CAR NO. / INITIAL	WET WEIGHT	H2O per ct. / CONT.	ASSAY AU. OZ.	AG. OZ.	CU. per ct.—PB. per ct.	DATE SAMPLED
Dec 17	2279	17643	49620	5.6	1.76	20.5	4.96	Dec 21
								Silica 63 Fe 13

M G Burns
per
Ore Shippers' Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

PRESCOTT, ARIZONA, Nov 30 1906

ASSAYED FOR Lincoln Gold M. Co.

CLARKE & COURTS, MFG. STATIONERS, GALVESTON

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron	
	Lot 2138											
	Cr 20475	8/10	16 00	16.4	11 62	27 62	4.23			66	17.4	

Humboldt, Ariz., Nov 28 1906

Mr. Lincoln Gold Mining & Milling Co
Crown King Ariz

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King
Crude Ore

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Nov 20	2138		20475		36060	4.7		.90	16.5	4.46		Nov 24

M. G. Burns
Ore Shippers' Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

OFFICE OF
R. H. Hetherington

PRESCOTT, ARIZONA, Nov 27 1906

ASSAYED FOR Lincoln Fmin Co
Chas J Forge

CLARKE & COURTS, MFG. STATIONERS, GALVESTON.

No.	DESCRIPTION	Ozs. Gold Per Ton	VALUE	Ozs. Silver Per Ton	VALUE	TOTAL VALUE	PER CENT Copper Wet	Lead	Zinc	Silica	Iron		
Lot 2139													
Car 20475		2.44	48 80	36.8	25 76	74 56	11.28			15			

Humboldt, Ariz., Nov 27 1906

Mr. Lincoln Gold Mining & Milling Co
Crown King Ariz

DEAR SIR: This is to advise you the weight, moisture and assay of the following lots of ore shipped Crown King Concentrates

DATE WEIGHED IN	LOT SHIPPER	LOT SMELTER	CAR NO.	CAR INITIAL	WET WEIGHT	H2O per ct.	H2O CONT.	ASSAY AU. OZ.	ASSAY AG. OZ.	ASSAY CU. per ct.	ASSAY PB. per ct.	DATE SAMPLED
Nov 20	2139		20475		16160	5.4		2.34	36.0	11.71		Nov 22

M. G. Burns
Ore Shippers' Agent.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

Gold valued @ $20.67

Assay Certificate

Silver " @ $ 0.60

M

SAMPLE NO.	OWNER'S MARK ON SAMPLE	GOLD OZS. PER TON	GOLD VALUE PER TON	SILVER OZS. PER TON	SILVER VALUE PER TON	TOTAL VALUE PER TON	PERCENTAGE OF Copper	Iron	Tin	Lead
#9	Trace of So. Drift of Coin Dyke	.16	3.307	1.04	.88	4.287				
#10	Sample of car #2824 Lot #29	1.34	27.70	22.92	13.63	41.33				
#11	So. Drift - Lower Level	.69	14.27	1.74	1.04	15.31				

Gold valued @ $20.67

Assay Certificate

Silver " @ $ 0.60

M

SAMPLE NO.	OWNER'S MARK ON SAMPLE	GOLD OZS. PER TON	GOLD VALUE PER TON	SILVER OZS. PER TON	SILVER VALUE PER TON	TOTAL VALUE PER TON	PERCENTAGE OF Copper	Iron	Tin	Lead
#1	Blk sulphide ore from foot wall Bottom Hole	.26	5.374	16.41	9.846	15.22				
#2	So. Drift across vein 4 ft wide Bottom	.16	3.307	.52	.312	3.619	None			
#3	Brown Quartz across vein 4 wide Bottom	.16	3.307	.48	.288	3.595	None			
#4	Red Ore taken from tunnel level 100 ft So. of Coin Dyke cut	.055	1.136	.395	.237	1.373	None			
#5	Brown Quartz & Sulphide Lower Level 19 ft So. of Coin Dyke	.12	2.48	.48	.288	2.768				
#6	Shipping ore Stope #1	.58	11.99	62.20	37.32	49.31				
#7	" " " "	1.83	37.826	14.79	8.874	46.69				
#8	Brown Streak Stope #1	.045	.93	2.665	1.599	2.529				

W. T. Derby, Jr. Assayer

OFFICIAL FILE COPY

2/4/71 Kirkemo 120
Emerick
Kilsgaard

FEB 5 1971

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AIRMAIL

Mr. Joseph R. Neaves, Jr.,
d/b/a Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

As agreed in our telephone discussion on December 10, 1970, with you, Gordon Neaves, and James Marsh, we have again carefully evaluated your application for financial assistance to explore the Lincoln mine.

We conclude from our study of all the information available that the proposed exploration program does not warrant financial participation by the Government. Our decision, therefore, is again to deny your application.

Should you conduct exploration into the proposed target area and obtain new geologic information in support of additional exploration, we would be pleased to consider a new application.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources
OME docket
OME Reading File
OME Region III
E. N. Harshman, USGS, Denver
Mr. Kirkemo
130

HKirkemo/gla 2-4-71

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 200

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O. M. E.
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JAN 28 1971
FILE CODE

January 26, 1971

Memorandum

To: Harold Kirkemo, Chief, Office of Minerals Exploration

From: E. N. Harshman

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

By phone and by memorandum of January 12, 1971 you requested that I review the subject application for OME exploration assistance. I have completed that review and my comments follow:

I concur fully with your denial of exploration assistance for there is no reason to believe that the work proposed by the applicant will result in the discovery of significant amounts of minable ore. Data supplied by the applicant and that in Bulletin 782 indicate that the small production from the Lincoln mine came from the oxidized, enriched, upper part of the "ore shoot". The history of the district shows that with increasing depth, primary ore of low grade is encountered and mining becomes uneconomical. There is no reason to believe that the Lincoln mine is an exception nor has the applicant shown this to be the case.

The history of the mine does not support the belief that the proposed exploration will find significant quantities of high grade ore. On the contrary, the repeated attempts to open the mine since its closing in 1907 have met with failure and the small quantity of "ore" produced as a result of these efforts seems to have not paid its extraction costs. Increases in mining and beneficiation costs for this type of deposit have not been offset by improvements in technology and increased metal prices, so there is no reason to believe that the proposed attempt to reopen the mine will be more successful than the past attempts.

The applicant shows the total gross production of the Lincoln mine for the years 1905 through 1907 to be about $95,000.00 and we may add $5,000.00 for production after 1907. Almost all of this ore was mined above the

100 foot level of the mine and the fact that the Bradley winz was sunk 200 feet in search for ore at greater depths indicates that the upper easily accessible levels contain little or no minable ore. The block of ground below the 100 level, to be explored by the proposed work, is of the same size as the block above the 100 foot level -- a block that has produced ore valued at about $100,000.00 when mined or $200,000.00 at present metal prices. The applicant proposes to spend almost $300,000.00 to partly explore a block of ground that may contain ore with a gross value of $200,000.00 -- a poor business proposition.

Denial of OME exploration assistance for any exploration at the Lincoln mine is recommended until such time as the applicant can furnish data to suggest that sufficient ore is present between the 100 foot level and the South Camp tunnel level to justify the proposed work.

E. M. Hawkinson

MME Form 7
(2/63)

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AIRMAIL

JAN 1 2 1971

Memorandum

To: Field Officer, Region III

From: Chief, Office of Minerals Exploration

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Enclosed are copies of letters and memoranda on the subject docket which you do not have in your files. Please insert these in the proper chronological order in your docket before referring this application to Mr. Harshman.

Harold Kirkemo gla

Harold Kirkemo

Enclosures

cc: Director's Reading File
Mineral Resources
OME docket
OME Reading File
Mr. Kirkemo
130

HKirkemo/gla 1-12-71

1/11/71

P. Howard Hasselmann
to relay information
re material not
yet in Haslam's
files. Copies now
being made for
transmittal to
Haslam.

Kirbemo

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FEDERAL CENTER, DENVER, COLORADO 80225
Office of Minerals Exploration
Building 53 Room 200

January 7, 1971

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Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

We have the following correspondence in the Region III OME ~~Field~~ Office Files on the above-stated subject:

	Date	Type	From	To
	3/24/70	Letter	Gordon Neaves	Mr. Hasler
✓	4/10/70	Memo	Field Officer, Region III	Chief, OME
✓	4/13/70	Letter	W. L. Emerick	Neaves Pet. Dev.
✓	4/21/70	Letter	Harold Kirkemo	Joseph R. Neaves, Jr.
✓	4/30/70	Letter	Joseph R. Neaves , Jr.	Harold Kirkemo
✓	5/6/70	Letter	Harold Kirkemo	Joseph R. Neaves, Jr.
✓	5/6/70	Memo	Harold Kirkemo	Field Officer, Reg. III
✓	9/2/70	Letter	Mr. James Marsh	Philip B. Mudgett
✓	9/16/70	Memo	Field Officer, Region III	Chief, OME
✓	10/1/70	Letter	Harold Kirkemo	Joseph R. Neaves, Jr.
✓	10/20/70	Letter	James A. Marsh	Harold Kirkemo
✓	10/21/70	Letter	Joseph R. Neaves, Jr.	Harold Kirkemo
✓	10/29/70	Letter	Harold Kirkemo	Joseph R. Neaves, Jr.
✓	12/9/70	Letter	Joseph R. Neaves, Jr.	Harold Kirkemo
✓	12/14/70	Letter	Harold Kirkemo	Joseph R. Neaves, Jr.
✓	12/28/70	Letter	Joseph R. Neaves, Jr.	Harold Kirkemo

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

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December 28, 1970

United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Attention: Mr. Harold Kirkemo
Chief, Office of
Minerals Exploration

Re: OME - 6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Gentlemen:

Thank you for your letter of December 14, in response to our telephone call in furtherance of our application on the Lincoln Mine.

We hope after an additional review of the data previously furnished you that the disclosures will bear out Mr. Marsh's statements that sufficient evidence now exists of previous production in the sulfide zone to warrant further favorable consideration.

We will be interested in the results of your additional review and appreciate with thanks your reconsideration.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN: ds

copy to Region III

MME Form 7
(2/63)

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Date	Surname	Code
12/16	WE	120E
		120

December 16, 1970

Memorandum

To: The Record

From: W. L. Emerick

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Notes on telephone discussion between Joseph R. and Gordon Neaves, James A. Marsh, Los Angeles, and W. L. Emerick and H. Kirkemo, Washington, D. C., December 10, 1970.

Applicant is under the impression that OME denial was influenced by other negative OME contracts in area.

Applicant asked if his company committed $200,000 would OME commit itself to $75,000. Applicant sought affirmative answer to present at company meeting on December 15, 1970. Kirkemo answered no.

Applicant's geologist relying entirely on the substance of an early report (1927) and has not checked authenticity of either report or its contents. The mine is inaccessible so he cant check either the maps or the report in a physical check or by samples. Survey geologist G. A. Anderson adjudged as being "soured" on Bradshaw Mtn. mineral deposits and the OME as "discriminating" against the applicant. Cited OME contract in Utah (OME-6646, Western States Minerals) with shaft as being a contract awarded on essentially the same conditions as this application.

Applicant's geologist related his experience and jobs held over the years. Recited the fact two OME field people recommended project. OME must not have much faith in their recommendations since we overruled them and denied application. Seemed exasperated that OME could question his experience and ability. (If it isn't necessary to check old reports then OME can take an applicant's word for everything and dispense with field examinations. WLE)

Applicant's geologist pointed out high copper content of ore. (All assays go back to the period 1905-1907 which are assays of oxidized ore and perhaps this man forgets that the copper, like the silver, probably is high for the same reason--accumulation's of copper during several periods of erosion made the upper oxidized portions of the vein several times richer than in the lean primary ore in the ore shoots. Like silver the copper was carried downward in solution. No where in the report can one find assays of the primary ore. WLE)

Applicant (Neaves) is dead set against even drilling one or two holes to check the ore shoot at depth. Says its unrealistic because if the holes prove shoot at depth they would still have to drive the tunnel and the drilling money would be wasted.

(This is a peculiar situation. Solely on the information fabricated in an old report the applicant and his geologist are ready and eager to spend $200,000 on a long tunnel to reach an alleged ore shoot but unwilling to put down two or three preliminary drill holes at a probable cast of say $10,000 or less to check out the target area. WLE)

The tunnel is a recommendation of an earlier report writer and it is predicated upon the ore shoot positively being there, and also upon its being as rich or richer than was the ore in the oxidized zone. So--is this exploration or development? The tunnel is a pretty expensive form of exploration but ideal for mining. Anyway, it is a reckless way to spend money. WLE)

Applicant asked if OME would reconsider the application again and Kirkemo agreed to submit it to an impartial Survey member for review.

W L Emerick

W. L. Emerick

CC: ~~Director's reading file~~
~~Mineral Resources~~
~~OME reading file~~
Mr. Emerick

WLE/cac 12/16/70

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
12/14	Emerick	120E
		120M

DEC 14 1970

Mr. Joseph R. Neaves, Jr.,
d/b/a Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

OME - 6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

Thank you for your letter dated December 9, 1970, and your phone call the next day requesting reconsideration of your application for financial assistance to explore the Lincoln mine.

On the basis of what is now known about the mine, we cannot accept your suggestion that the Government participate to the extent of $75,000 in the costs of driving a proposed tunnel at a total estimated cost of $275,000.

Before this or any exploration work is done, we believe that geologic and assay data should be obtained to verify statements in old reports about the possibilities for significant reserves in the sulfide zone. We mentioned in our discussion with you on the 10th that several drill holes into the target area would be one means of obtaining information on the nature, width, and mineral content of the vein. If the results of such work corroborate information in the old reports, an exploration program can be planned accordingly.

We will review the application again but not before the first of the year because of other commitments. We will advise you of our decision as soon as possible.

Sincerely yours,

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director Reading file
Mineral Resoruces
OME reading file
Region III with in/letr.
Mr. Emerick
130

W. Emerick/cac 12/14/70

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

December 9, 1970

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Mr. Harold Kirkemo
Chief, Office of Minerals Exploration
United States Department of the Interior
Geologicay Survey
Washington, D. C. 20242

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Kirkemo:

I took the liberty to attempt to reach you by telephone this morning in further reference to the subject application as again denied in your letter of November 13, 1970. While we appreciate the reasons and the basis of your further denial of this application, we still feel that there are still some good interests to be served in the further pursuance of this effort.

The reason for the telephone call this morning was because of a current situation somewhat urgent in that at a meeting we are to have on Tuesday, December 15, if we could present some indication that an OME loan could be acquired for partial costs, we feel certain that we could commit a substantial amount ourselves. To be more explicit, in our original application we applied for the maximum OME loan for the purpose of extending the south camp tunnel an additional 2,000 feet to encounter the main ore shoot previously mined from the surface to a vertical depth of approximately 300 feet where high-grade ore was mined and sold.

When this loan was rejected for what we understood to be budgetary reasons, it was then suggested by your Regional Office in Denver that a lesser program be initiated consisting of the drilling of approximately four holes to test and determine the same objective -- i.e., the downward continuation of the anticipated ore body. The cost of this was approximated at $65,000.00 for which a new application was made, resulting in the current and final denial as per your letter of November 13.

We are going to take the risk of appearing presumptious to further express our convictions that this property is of sufficient merit to warrant FULL exploration. Even in view of the fact that we are aware that there have been one or two projects in the area conducted under OME assistance which proved negative -- the results of which no doubt have influenced opinions as to this condition existing generally --

we still feel we have sufficient evidence that in the Lincoln Mine the values below the oxydized zone continue to be higher than what was encountered in other projects seeking the same or similar objectives. This evidence influences us to the extent that we are willing to commit a sufficient sum on our side to complete our original projection of 2,000 feet of tunnel drifting along the main fissure. To be explicit, estimating that this project will cost some $275,000.00 -- if we could obtain OME assistance from the Government in the amount of $75,000.00, we feel certain we could commit ourselves for the balance -- i.e., $200,000.00, the sum necessary to complete this effort. This of course eliminates any drilling program which if undertaken, any anticipated results encountered in the tunnelling would then have to be done and the expense incurred anyhow.

Hence the reason for my telephone call to attempt to reach you this morning to find out that if we committed this amount -- would it be sufficiently attractive to have your office reconsider -- and if we would fulfill our commitment in this regard, could we anticipate this OME assistance?

Sorry to learn that you were unable to be at your office this morning because of illness, but your secretary, Mrs. Ault, was very cordial and comprehensive, so that we feel if we could have the opportunity to further explain our contemplations to you in person, it might be more helpful in making determinations at our meeting on the fifteenth. Perhaps we will have your return telephone call before you receive this letter, but in any event I feel the prospects of success warrant this tenacity as well as our own commitment to help in the determinations.

We appreciate and thank you for your continued attention.

Sincerely,

NEAVES PETROLEUM DEVELOPMENTS

Jos. R. Neaves Jr.

JOS. R. NEAVES, JR.

JRN: ds

MME Form 7
(2/63)

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Date	Surname	Code
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AIRMAIL

NOV 13 1970

Mr. Jos. R. Neaves, Jr.,
d/b/a Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

We have reviewed the material submitted by Mr. James A. Marsh, Chief Executive, Mining, in support of the request for us to reconsider your application, studied again information in the application, and consulted other sources of information about the property and the district. These data do not offer sufficient evidence to warrant expenditure of Government funds to explore the Lincoln Mine at depth, and, therefore, we regret to inform you that our denial dated October 1, 1970, of your application is reaffirmed.

Should you conduct exploration at depth and disclose geologic and assay evidence in support of your expectation for significant reserves of ore-grade material, we would be pleased to consider a new application for assistance to continue with such exploration.

Sincerely yours,

Harold Kirkemo (gla)

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources
OME-6815
OME Reading File
OME Region III
Mr. Kirkemo
130

HKirkemo/gla 11-13-70

MME Form 7
(2/63)

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Date	Surname	Code
11/13/70	Emerick	120
		220

November 13, 1970

Memorandum

To: The File

From: Chief, Office of Minerals Exploration

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Justification for Denial of Reopened Application

The Applicant and Mr. James A. Marsh, Chief Executive, Mining, in letters dated October 21 and 20, 1970, respectively, requested reconsideration of its application dated February 3, 1970, for financial assistance to explore the Lincoln Mine. The Applicant had been advised by letter, dated October 1, 1970, that its application was denied.

Denial had been justified on the basis that although the deposit yielded enriched oxidized ore in the first several hundred feet from the surface, the primary sulphide material encountered in the bottom workings was too lean for profitable mining. Further, there was no information available on the possible value of material expected in the area of proposed exploration 150 to 200 feet below the bottom workings.

In reconsidering the application, all of the information originally submitted by the Applicant was reviewed. Material accompanying Mr. Marsh's letter of October 21 duplicated material already submitted and offered no new geologic evidence in support of the expectation of ore at greater depth.

Because of his extensive background and years of field investigations in the Bradshaw Mountains in Arizona, I consulted by telephone with Mr. C. A. Anderson on November 3, 1970, about the outlook for significant deposits being discovered at depth on veins of this type in the district. He stated there are many hundred similar deposits in the Bradshaw Mountains and that their histories of production followed closely that of the Lincoln Mine--sometimes profitable production in the enriched oxidized portions of the veins, but usually uneconomic and short-lived operations in the primary mineral zone. Anderson referred to a book entitled "Rocks to Riches," by Charles H. Dunning, 1959, page 368, Southwest Publishing Company, Inc., Phoenix, Arizona, for a brief history (copy enclosed) of operations at the Lincoln Mine. The Applicant's historical record of the mine is more detailed, but essentially the same as that presented by Dunning.

The Applicant projects ore bodies below the lowest levels in the mine based entirely on the geologic characteristics of ore bodies in present workings. Geologic indications and historical records of this and many similar deposits in the district strongly suggest that the Lincoln vein at depth probably contains primary sulphide material too low grade to be mined.

In view of the lack of sufficient support to justify the proposed program, I recommend that we reaffirm our original denial of the application.

Harold Kirkemo

Harold Kirkemo

Enclosure

cc: Director's Reading File
Mineral Resources
OME docket
OME Reading File
Mr. Kirkemo

HKirkemo/gla 11-13-70

"Rocks to Riches," by Charles H. Dunning, 1959, page 368, Southwest Publishing Company, Inc., Phoenix, Arizona.

Discovered and had small production of gold (with some silver and copper) in the 1860s. Was equipped with a 10-stamp mill from 1900 to 1914. In 1932-33 Southern Exploration built a 100-ton flotation mill, but operations were suspended after 1933 and had not been resumed through 1959. Development is said to extend to 500 feet, and production is recorded as totaling $700,000, principally in gold, with some silver and minor copper values.

The Lelan section of the property was owned in 1959 by Harry O. Morosmith and D. D. Whitaker, of Mayer, while the Dividend was owned by Edgar Kellis, of Bagdad.

Leszinsky See Clifton-Morenci text. **Greenlee Co.**

Lincoln **Yavapai Co.**

A gold deposit with moderate size vein, situated 2 mi. NE of Crown King. Dates from the 1890s. From 1902 to 1908 it produced $135,000 worth of gold. Developed by a long tunnel.

It was operated by D. M. Bradley, Jr. about 1916-17, later was owned for a number of years by C. T. Joslin of Prescott, then by his estate. Production was small. In 1931 Calincoln Mines, Inc., stimulated by depression-bred revival of interest in gold, reopened the mine and shipped a few cars of ore. The mine has been inactive since then. In 1958 Melvin F. George, Los Angeles, was trustee of the property.

Little Helvetia (Tip Top) **Pima Co.**

Situated about 1 mi. N of Helvetia. The mine, originally known as the Tip Top, was discovered and located in 1898, but there was no recorded production until 1903, when it was taken over by the Tip Top Copper Co. They developed the property quite extensively, encountered good ore and shipped steadily from March, 1904 through June, 1905, and again during the latter part of 1906, when the mine was optioned to the A.S.&R. Co. This company did a little shipping but relinquished its option in late 1907. Production to 1934 totaled $160,000, most all of which value was in copper.

While there is no recorded production in later years, as of 1957 the mine was owned by the Denver Forbes Est. At that time it was under option to the Lewisohn interests, owners of the neighboring King In Exile, and it was reported tentative plans were being made for its further development.

Little Jessie See Jessie. **Yavapai Co.**

London-Arizona **Gila Co.**

Situated 6 mi. N. of Winkleman. A copper deposit in the same general area as the Christmas, which latter has recently been taken over and developed successfully by Inspiration Consolidated Copper Co. The London-Arizona had a recorded production between 1912 and 1928 of $1,050,000, mostly from copper, but partly from lead, silver and gold. In 1957 the Inspiration company was reported to have optioned at least a portion of the 36 claim group and to have begun an exploratory drilling program.

Lukes **Yavapai Co.**

An old prospect situated on the eastern slope of the Bradshaw Mts. about 2 mi. E of Crown King. It was acquired by Frank Luke in the late 1880s, but as a mine it was disappointing. Thus Luke operated a custom mill there during the late '80s and during the 1890s, dressing a total of about $200,000 worth of ore.

The property in 1959 was still owned by the Luke family, prominent Phoenix businessmen and ranchers. Frank Luke, Jr. won fame and died a hero's death as "The Balloon Buster" during World War I. It was in his honor Luke Air Force Base near Phoenix was named.

Mack Morris Described in text. **Gila Co.**

Mackin-Kennedy-Ryan See Jacob's Lake. **Coconino Co.**

Magma Described in text. **Pinal Co.**

Mammoth-St. Anthony Described in text. **Pinal Co.**

Mardun (Navajo) (White Mesa) **Coconino Co.**

Situated at a remote spot in the Navajo Indian Reservation, in the White

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

November 2, 1970

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O. M. E.
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HR 1120

Mr. Harold Kirkemo
Chief, Office of Minerals Exploration
United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Kirkemo:

Thank you for your prompt response of the 29th to our letters of October 19th and 20th, re the above-captioned matter.

We appreciate your courtesy and willingness to review our previous application and hope that you will find the data worthy of this additional consideration.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN:ds

MME Form 7
(2/63)

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Date	Surname	Code
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OCT 29 1970

AIRMAIL

Mr. Joseph R. Neaves, Jr.,
d/b/a Neaves Petroleum Developments
and Mr. James A. Marsh
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Gentlemen:

Thank you for your letters dated October 20 and 21, 1970, requesting reconsideration of the application for OME assistance to explore the Lincoln mine.

We will be glad to review the application and all information available to us, and to advise you accordingly upon conclusion of the review. Please be assured that careful consideration will be given to all aspects of the proposed exploration.

Sincerely yours,

Harold Kirkemo (gla)

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources
OME docket
OME Reading File
OME Region III w/cys lettrs. 10/20 and 21, 1970, without enclosures
Mr. Kirkemo
130

HKirkemo/gla 10-29-70

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

October 21, 1970

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O. M. E.
RECEIVED
OCT 23 1970
INITIALS CODE
130
120
120

Mr. Harold Kirkemo
Chief, Office of Minerals Exploration
United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Kirkemo:

Thank you for your letter of October 1st which I turned over to our Chief Executive of Mining Engineering, Mr. James Marsh, with the request that he further illustrate what we feel are indicated reserves and a prospect worthy of further OME consideration.

I hope I was not presumptious in having Mr. Marsh write you yesterday - but I do feel this project's potential is so definite that our further efforts will not only result in much benefit to us - but to the Government as well - to say nothing of what it could eventually mean to the State of Arizona -- if it developed into a mining operation of considerable size and scope.

In view of these things I hope that in your review of Jim Marsh's letter of yesterday that you will feel our request for OME assistance is worthy of your further consideration. We will be grateful and appreciate your further personal attention to this.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN:mb

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

JAMES A. MARSH
CHIEF EXECUTIVE, MINING

October 20, 1970

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Mr. Harold Kirkemo
Chief, Office of Minerals Exploration
United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Kirkemo:

Reference is made to caption title concerning an OME loan covering a drilling program for the purpose of exploring for the downward continuation of the ore shoot shown on the attached longitudinal section.

Your letter of October 1, 1970 states that the probability of disclosing significant reserves of gold and silver from the subject property is not sufficiently promising to justify Government participation. I am at a loss to understand your conclusions in this matter and I refer you to the attached section which shows the ore shoot to have an average width of 10 feet (information from enclosed Geological Report), a strike length of 500 feet and a vertical depth of 400 feet. On the basis of this information, it is possible to estimate an ore reserve of 200,000 tons, the grade of which is estimated to be approximately 1 ounce of gold per ton, 25 ounces of silver per ton and 5% copper; the total value of which would be approximately $138.75 per gross ton, or a gross value of approximately $27,750,000.00 for the 200,000 tons.

I wish to call your attention to Table 2 and Table 3 showing smelter returns on ore shipped to the smelter from 1905 to 1907, the assay values of which averaged 1.53 ounces of gold per ton, 25 ounces silver per ton and 5% copper per ton. For the entire period of 1907 you will note that the average value of ore shipped was approximately 3.26 ounces of gold per ton, 25 ounces of silver per ton and 5.4% copper.

During the recent American Mining Congress at Denver, Colorado, I had the opportunity of discussing the subject matter with Messrs. Mudgett and Hassler and they indicated to me that it was your feeling that the ores below the oxydized zone would show substantial decrease in gold, silver and copper values. Although this

may be true in some of the mines within the Bradsahw District, it definitely is not the case here. As a matter of fact, the ores below the oxydized zone show a substantial increase in values. The sulfides in this zone are pyrite, chalcopyrite, tetrahetrite and chalcocite.

Corrected by Kirkemo 11/12/70

(Mr. M. F. George's report on page 9 quoting Mr. Bernard P. Miller as follows:

I wish to call your attention to a statement made in ~~the report by Mr. Caldwell, on page 9. He states:~~ "As to the values within this ore shoot, it is interesting to note that the value of the ore shipped to the smelter from January 17, 1907, covering a period of nine months, amounted to $29,041.00. This ore was taken from the stopes below the tunnel level, all of which was in the sulfide zone. The highest value was $121.55 gross and the lowest was $65.69. The freight and treatment charges averaged about $14.00 and the net value of the ore from the entire nine months averaged a little better than $96.00 per ton; this does not include any value for copper, which would be an additional $60.00 (5% Cu) thereby making a total net value of $156.00 per ton." Mr. Caldwell also states that, "The most remarkable feature of the mine in this state of development is unquestionably the aspect of the ore body at the bottom level and in this case the indications are exceptionally encouraging."

In view of the foregoing facts, which I am sure have been available to you in order for you to make a decision regarding the requested loan, we should therefore appreciate your again reviewing the subject matter because it is our opinion that there are significant reserves of gold and silver on the property to warrant the requested loan to cover the proposed exploratory drilling program to adequately test the downward continuation of the ore shoot shown on the accompanying longitudinal section.

Sincerely,

NEAVES PETROLEUM DEVELOPMENTS

James A. Marsh

James A. Marsh
Chief Executive, Mining

JAM:ds

encls.
(in envelope)

Was work done by "eastern group"?
— Not after 1932

DEVELOPMENT
EXAMINATIONS
VALUATION
REPORTS

TELEPHONE
MUTUAL 8258

ALVIN B. CARPENTER
CONSULTING MINING ENGINEER
1211 PACIFIC MUTUAL BUILDING
LOS ANGELES
MUTUAL 8258

September 14, 1932

Mr. Melvin F. George

Dear Sir:

At your request I made a visit to the Lincoln Mine near Crown King in Yavapai County, Arizona, on September 11, 1932, and in the following pages I give you a resumé of what I found there, including the present condition of the workings, the equipment, housing, and roads. I also include a statement of the present condition of tax payments as shown on September 10th on the books of the Treasurer of Yavapai County, in Prescott. The following is the information obtained from observation and from Pat O'Hagan, the sole employee at present on the property.

My general understanding is that there is now a lease and bond on the property executed by Mr. Chas. C. Miller, Jr. as Trustee to a Mr. Christenson and others in the name of the CALINCOLN MINES INC.

During 1931 this corporation proceeded to actively work the property. Preliminary to actual mine work, all of the cabins at the mine camp were rehabilitated and put in first-class condition, the outsides painted and the inner

walls neatly lined with straw board. One new cabin was erected by the company and one cottage erected at the personal expense of the President of the Company.

The roof truss in the lower part of the old mill that was broken had been replaced and the mill building appeared to be in good condition. No work has been attempted in rehabilitating the mill and it is doubtful if such would be worth the necessary expense, as the best ore possibilities in the mine are below the long tunnel that leads to the mill, and should be developed and worked from the continuation of the lower tunnel on the S. P. Carlin claim which should be extended into the Quien Sabe claim to the downward extension of the ore shoots exploited in the old upper workings of the property.

A new change house was erected and the compressor house was put in shape.

A timber shed and smith shop were also erected and a large amount of heavy timber, salvaged from an old railway bridge on the old railway to Crown King, was hauled to the mine.

A new Gardner-Denver compound air compressor of more than 600 cu. ft. air capacity, driven by a 75 H.P. Westinghouse motor, all of latest design, was set up at the mine.

The long tunnel with its portal near the old mill was cleaned out to a short distance beyond the "Bradley" winze. A larger station was made at the top of this winze and

an electric hoist installed.

The Bradley winze was cleaned out and retimbered where necessary.

This winze had reached a depth of 168 feet below the long tunnel when operations by Bradley were discontinued. The Calincoln Company carried this winze down about 40 feet to the 200-foot level below the tunnel and drove drifts both north and south. The north drift was run 75 feet to ore and crosscut 10 feet to the footwall. The south drift was run a distance of 158 feet at which point ore was struck on the footwall.

The vein at this level is characteristic of the vein in the upper levels. It is about 15 feet in width between the true hanging and foot walls. The ~~gouge~~ gangue is schist with some soft bands of decomposed greenstone and the ore occurs as quartz lenzes in the schist, sometimes on the footwall, sometimes near the center, and again on the hanging wall of the vein. These quartz lenzes run from 2 feet to 4 feet in width, the very high grade in thin seams, while the full width of the lenzes should make a mill ore of a reasonable value, from $5.00 to $15.00 grade, altho while the shoots have been more or less defined in some places, further crosscutting should be necessary to give an accurate value with sampling.

From the actual mining work done in 1931 I understand three cars of ore were shipped to the smelter, that

just about covered the expense of its extraction, and clearly showed that to make a real mine and a commercial proposition it will be necessary to thoroughly develop the mine in depth.

For such development, the S. P. Carlin tunnel should be driven 1000 feet from its present face and Pat O'Hagan stated that this development was now contemplated. He inferred that the present Calincoln Mines Inc. had arranged to turn over their lease to a well financed New York group who expect to begin this development in October.

The Carlin tunnel will cut the main ore shoots at about 175 feet below the bottom of the Bradley winze, and there is a very good chance of its cutting other ore shoots between its present face and where it would intersect the downward extension of the old ore shoots.

O'Hagan also stated that even a more ambitious program was contemplated by the Eastern people and that there was a probability that a crosscut tunnel may be started from the level of the first old railway switchback below the mine, which would have to be driven about 2000 feet to the vein. This tunnel would cut the vein some 800 feet below the present workings, would save thousands of dollars in transportation costs to the mine, and, if a fair grade of mill ore was encountered in depth, would develop a tonnage that would permit most economical operations for many years to come.

Should the result of the mine development through the S. P. Carlin tunnel show good values in the ore shoots

that it may encounter, the contemplated development at lower depths would certainly be justified, and it is hoped that the Eastern people who contemplate taking over the present lease may have both the financial ability and the patience to undertake this work. I understand that this Eastern group have had several engineers examine the property and that such reports have been satisfactory to them.

TAXES

The only information I obtained derogatory to the present leasing company was an apparently temporary oversight in keeping up the taxes on the patented claims of the property.

The taxes due December 1931 and June 1932 had not been paid on September 10, 1932. Total taxes assessed against the Rough Rider, Yellow Jacket, Quien Sabe (less 150' x 1500'), Norman, Alene, S. P. Carlin, and the Admiral and Valley View mill sites, originally amounted to $188.70, but are at this date increased with penalties to $212.21.

The taxes on the Watsonville claim and westerly 150' x 1500' of Quien Sabe stand as follows: the first installment, December 7, 1931, was paid by Chas. C. Miller, Jr. for L. F. George but the second installment due June 1932 has not been paid.

Regarding the American Girl claim which is held by location, I found Proofs of Labor had been filed and recorded for years 1927, 1928, 1929 to July 1930. No Proof had

been filed for the year from July 1930 to July 1931 but as the Calincoln Company was operating during that period, the cost of road work necessary to maintain the road to the properties could be allocated to such Proof of Labor necessary to protect this claim. There was no assessment work required for the year ending July 1932.

CONCLUSION

The present leasers now have the property in very much better shape than when I visited it in 1928, and have apparently expended about $50,000.00 in rehabilitation and maintenance. They have done very little actual mining or development which, unless it had been carried on in the Carlin tunnel, would not have been to any great advantage to the owner company, for work below the old long tunnel level would be difficult to maintain and only at a constant pumping expense.

The power line is up and paid for and there only lacks the transformer to start the electrical equipment.

The most important thing to know is who the Eastern people are, with whom the Calincoln Mines Inc. has arranged to finance and develop the property, and what are their plans.

This information is undoubtedly in the hands of Mr. Chas. C.Miller, Jr. Trustee, 601 West Adams Street, Phoenix, Arizona.

I would suggest you write Mr. Miller that he have the Calincoln Mines Inc. immediately cover the taxes that are

past due, and that he give you all information he may have regarding the personnel and financial standing of the Eastern group that expect to take over the lease.

I beg to remain,

Very truly yours,

Alex B Carpenter

Table No-1 4

SUMMARY OF PRODUCTION

1905.

210.0 tons of ore shipped	@	$51.20	equals	$10,764
87.1 " " conc "	@	58.40	"	5,445
Bullion "				4,589

1906.

182.5 tons of ore	@	$67.40	"	12,320
126.2 " Conc	@	80.60	"	10,290
173.7 " run of mine	@	26.00	"	4,517
Bullion				2,419

1907.

265.4 tons of ore	@	$101.20	"	26,875
45.5 " " conc	@	99.80	"	4,535
B ullion				12,867

For over the three years

657.9 tons of ore	@	$ 75.90	"	49.959
258.8 tons of concentrate	@	78.10	"	20,270
173.7 tons run of mine	@	26.00	"	4,517
Bullion				19.875

1090.4 tons shipped Total product $94,621.21
(Note-- @ means averaged.)
Values are gross per ton.

The shipments during 1910 are in all probability not complete and are therefor not detailed. It is probable that they amounted to about # 9,000.00

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Over the period that a record of tonnage milled was recorded as shown on bullion return sheets, shows that

1031 tons milled plated $6,961.54 and concentrates during the same period were $ 3,777.50, equivalent to

	$6.75
Saved per ton on plates	
Saved per ton in concentrates	3.65
Total per ton milled	$10.40

At a saving of 70% shows milling ore to have run $15.00 per ton.

---------o---------

This record is complete and covers all production during the time that the mine was operated except when Lincoln himself operated years before in a very small way.

D.W. Braden, Jr.

Table No-1

Record taken from original Smelter return sheets, ore and concentrates.

-----00000-----

	Date		Pounds Weight	Kind	oz. Gold	oz. Silv.	% Cu.	Gross pr ton	Net per ton	Total payment	Freight
	July 31,	1905	45,432	conc	1.60	26.6	5.70	$58.28	$42.92	$ 905.22	$ 95.80
	Aug 3		50,350	conc	1.70	30.0	3.90	58.25	41.80	1026.19	95.36
	" 8		44,328	ore	1.00	16.5	3.10	35.30	17.10	373.32	83.06
	Sept. 25		52,735	conc	1.75	33.8	6.00	67.86	61.15	1563.97	125.00
	Oct. 19		38,750	ore	1.70	27.0	7.30	65.62	57.56	1104.06	264.50
	" 30		48,000	"	1.76	27.6	7.30	62.71	54.31	1256.44	39.60
	Nov. 4		25,775	conc	1.70	29.5	7.00	67.32	60.23	737.46	149.21
	" 4		14,450	ore	2.30	31.8	6.80	97.11	70.10	501.43	103.79
	" 18		52,040	"	1.19	22.0	4.80	44.49	34.23	879.99	57.50
	" 23		74,330	"	1.35	19.9	5.01	51.08	41.42	1523.97	139.37
	Dec. 19		60,000	"	1.60	19.6	5.30	56.46	47.02	1356.99	75.00
	" 19		44,000	"	1.14	15.7	3.50	40.59	30.33	645.90	50.60
	" 22		44,000	"	1.30	23.3	6.39	54.60	54.30	971.68	39.95
	Jan. 11,	1906	31,300	"	2.42	33.2	6.66	87.92	78.27	1210.21	55.00
	" 12		50,000	"	1.80	21.9	5.67	65.84	56.27	1378.61	75.00
	" 21		53,720	"	1.35	28.7	6.30	62.68	53.18	1398.42	80.60
	Feb. 12		47,220	"	1.25	33.2	6.21	63.12	52.87	1218.28	75.20
	Mar. 21		55,350	"	0.20	9.6	4.68	21.79	11.48	298.07	45.67
	Apr. 2		50,556	"	0.15	8.7	3.87	19.51	9.32	221.47	41.70
	" 17		50,920	"	0.19	9.2	3.18	18.72	6.14	202.26	42.00
	May 8		55,220	"	0.26	13.8	5.62	30.17	20.95	560.50	63.85
New	" 29		53,720	conc	2.19	29.0	7.92	86.60	78.42	1925.21	80.60
Mill	June 1		44,820	ore	0.24	13.4	6.02	30.93	21.67	461.20	42.90
	" 12		49,220	"	0.46	15.3	6.35	37.61	26.45	678.45	56.60
	" 12		51,300	conc	1.66	23.2	7.59	71.94	63.41	1485.69	76.95
	July 2		49,060	"	1.57	24.4	8.64	72.90	64.90	1458.24	75.00
	" 18		42,120	ore	0.32	10.0	4.86	26.51	17.51	362.12	48.75
	Aug. 17		49,930	conc	2.30	26.2	7.66	85.32	77.38	1840.87	75.00
	Oct. 5		36,080	conc	1.97	25.8	6.64	77.87	69.04	1124.66	66.00
	" 25		43,320	ore	2.32	19.1	4.68	75.36	64.15	1297.75	66.00
	Nov. 13		54,820	"	2.61	34.8	5.72	94.96	84.18	2242.72	90.00
	Dec.1 1		36,060	"	0.90	15.5	4.04	43.10	31.42	539.86	
	" 1		16,160	conc	2.34	36.8	10.54	110.79	102.39	782.57	78.35
	" 28		49,620	ore	1.76	20.5	4.46	65.12	53.74	1258.50	74.45
	Jan 17	1907	62,090	"	3.58	27.0	4.56	106.43	95.36	2860.85	122.60
	Feb. 11		59,300	"	3.41	24.0	3.87	98.51	87.21	2430.60	90.00
	Mar. 19		77,120	"	3.21	23.7	4.32	96.76	86.27	3130.30	115.70

Table No 2.

BULLION FROM MILL.

Copied from original mint return sheets.

	Date of rec't at mint.	Gross wt amalgam ozs.	Value of gold	Value of silver	Charges.	Net am't paid	
Old Mill Five Stamps	June 17 1905	92.40	$895.09	$19.05	$4.38	$ 909.76	
	July 21	96.35	1154.34	18.29	4.70	1167.93	
	Aug. 4	70.00	897.25	10.58	3.63	904.20	
	" 31	64.55	838.13	11.77	3.59	841.31	
	Sept 13	40.40	455.27	9.20	2.62	461.85	
	Oct. 9	30.00	298.35	8.06	2.18	304.23	
New Mill	June 2 1906	33.64	406.33	7.32	2.36	411.29	
	July 19	32.20	353.71	7.24	2.27	358.68	
	Aug. 20	59.40	527.29	16.53	2.17	541.65	
	Sept. 14	62.05	410.55	20.14	2.01	428.50	Said
	Oct. 11	50.43	406.20	15.92	2.19	420.11	to be
	Nov. 2	26.86	251.87	8.25	1.54	258.38	from
	Apr. 26 1907	-----	Mint record lost		-----	501.85	
	May 10	-----	"	"	"	-----	1160.77	310 tons
	" 22	56.08	735.13	10.80	3.22	742.71	
	June 7	75.35	883.39	14.98	3.83	894.54	142 "
	June 20th	71.58	859.52	14.52	3.70	870.34	145 "
	July 10	81.34	949.39	16.91	4.06	382.54	128 "
	" 19	51.61	587.11	11.42	2.89	575.64	92 "
	Aug 5	49.16	570.79	9.24	2.75	577.28	95 "
	" 21	31.45	349.71	7.15	2.17	354.79	57 "
	Sept 7	33.48	363.48	7.74	2.22	368.98	62 "
	" 25	26.48	316.09	6.61	2.05	320.65	
	Oct. 5	39.95	448.09	8.57	2.48	854.18	
One liquidation appears lost.							
	Nov 6	57.90	548.37	12.14	2.99	557.52	
	" 21	56.16	476.22	7.82	2.54	46.50	
	Dec. 10	23.56	262.96	3.91	1.84	265.03	
	Apr. 29 1908	46.35	478.11	9.75	2.86	485.00	78 "
	May 7	43.60	491.79	7.89	2.71	476.97	70 "
	Feb. 10 1910 to June 2nd, according to Bank record					2951.95	

Table No 3

Date	Pounds weight		Oz. Gold	Oz. Silv	% Cu	Gross per ton	Net per ton	Total payment	Freight
Jan. 17, 1907	62,090	ore-	3.58	27.0	4.56	$106.43	$ 95.36	$2860.33	$122.60
Feb. 11	59,300	"-	3.41	24.0	3.87	98.51	87.21	2430.60	90.00
Mar. 19	77,120	"-	3.21	23.7	4.32	96.76	86.27	3130.30	115.70
Apr. 11	68,000	"-	4.29	26.0	4.41	118.51	108.20	3520.61	132.60
May 10	59,460	"-	3.26	28.9	5.31	103.73	92.68	2719.50	117.00
May 16	29,720	Conc	3.00	25.4	5.76	100.00	91.33	1209.20	55.70
June 19	18,652	"	not off original			82.70		684.20	
July 6	47,400	Ore-	1.83	22.2	4.11	65.69	53.96	1230.20	102.35
" 12	20,860	Conc	3.34	22.9	4.23	97.42	88.42	839.00	104.50
" "	48,800	Ore-	3.28	24.2	3.96	94.17	83.27	1970.80	
Aug. 15	21,720	Conc	4.06	27.5	5.22	115.79	106.34	1045.10	126.15
" "	42,960	Ore	3.73	37.6	7.36	121.25	110.82	2301.85	
Sept. 13	64,740	"	3.21	39.6	6.39	106.30	95.92	2990.00	126.25
Oct. 17	54,000	conc	(Oct.						
" "	-------	ore-	(not off original, none made)					3370.00	Smelter failed loaned by Bank on the shipment
Feb. 1, 1910	16,740	Conc	1.61	30.2	8.60	61.28	56.24	423.15	Prepaid
Mar. 8	21,681	"	1.84	20.7	5.55	55.74	50.74	503.29	24.94
Apr. 12	15,119	"	2.23	20.3	4.32	61.06	55.79	385.90	20.51
May 10	15,456	"	1.82	16.3	4.90	51.78	45.77	341.67	
" "	12,513	ore-	.71	13.4	5.40	28.35	19.09	117.29	25.40
" 24	8,548	conc	1.68	18.8	7.40	53.18	50.00	203.00	9.82

REPORT ON THE LINCOLN MINE

Made to M. F. George

The property known as the Lincoln Mine originally consisted of a group of six lode claims, Quien Sabe, Yellow Jacket, Rough Rider, S. P. Carlin, Norma and Alene, and two Mill Sites, the Admiral and Valley View, patented under Sur. No. 1599 A & B; the patent acreage being 112.56 acres.

There are also two unsurveyed claims, the American Girl, which is the Southerly extension of the S. P. Carlin lode, and the Rough Rider Fraction, located Oct. 2, 1927, covering a fractional piece of ground between the Rough Rider and the Yellow Jacket and the Watsonville.

The recent acquisition of the Watsonville lode, Sur. No. 2106 adds 11.965 acres to the acreage of the group, making at this time a total of 124.52 acres patented and approximately 30 acres of unsurveyed ground. The title at this time rests in the name of Charles C. Miller, Jr., Trustee.

There was another location in the group at one time known as the Juniper lode, which was the Northerly extension of the Yellow Jacket lode, this claim was abandoned by the Company some years ago.

The property is situated in the Pine Grove Mining District, (better known as the Crown King District) Yavapai County, Arizona. The mill and surrounding buildings which have been the center of operation on the property is situated about two and a half miles from Crown King P. O. and is reached by a road which was constructed by the Lincoln Gold M. & M. Company prior to 1905. The building of the road would be considered quite an extensive operation even at the present time. Apparently it followed a surveyed grade and has some heavy rock cuts.

I doubt if it could be duplicated for $25,000.00 ~~at this time~~. There are some short steep pitches and at this time the surface material has been washed away, making it more difficult to negotiate than if it were in good repair and every-day use. The grade of necessity must be steep as the Lincoln mill is nearly 1,000 ft. higher than Crown King.

The Southern end of the property later referred to as the South Camp is at approximately the half way point on the road to the mill, and only a little over a mile from Crown King.

Until the first of this year the Crown King district has been served by a branch of the A. T. & S. F. R. R. running from Prescott, through Mayer, thence to Middleton and on up to Crown King, with several switch-backs between Middleton and Crown King.

The portion from Middleton to Crown King, about 12 miles in length, has recently been abandoned, the rails removed and the roadbed turned over to the County for a highway. The roadbed is excellent and the grades easy, with a maximum of 4% for a short distance only.

The railroad still maintains twice a week passenger and freight service to Middleton, which is the nearest railroad shipping point to Crown King at the present time.

This is not as much of a drawback as it may seem, as ore or concentrates loaded at the Lincoln mill, for instance, can be hauled down-grade to Middleton for little more than it would cost to Crown King.

TOPOGRAPHY

The surface of the Lincoln groupe, in common with the entire district, is covered with a dense growth of oak and manzineta brush as well as some larger timber, and observations of formation have to be made from the trails leading to or from the different prospect holes. The harder, silicious strata being more resistant to erosion form the observable outcrops, whereas the more easily oxidized and decomposed strata are hidden by the underbrush and not visible unless cut by a trail or road.

The Crown King district as a whole is noted for its rugged topography. With its high points at an elevation of around 7,000 ft., the run-off from winter snowm and torrential rains of summer have cut deep and steep sided canons, which are separated by sharp ridges. Fortunately, the erosion has been greatly retarded by the dense undergrowth.

At the North end of the Lincoln group one of these ridges divides the drainage between Muldoon Canon on the North and Poland Gulch on the South and East. The claims in a Southerly direction being cut by smaller gulches running Easterly into Poland Gulch.

GEOLOGY

The claims of the Lincoln group run about N. 25 deg. E. for 6,000 ft. and cover the contact between Yavapai Schist on the West and the Bradshaw granite on the East. A glance at the geol. sheet of the Bradshaw Quadrangle report shows in the vicinity of the Lincoln mine the marked northeasterly trend and parallelism of the schist-granite contact, the principal intrusive dikes and the larger gulches. The schist belt West of the Lincoln mine is only about a mile wide and the granite on the East only one half to three quarters of a mile wide, being separated from the main mass of granite intrusive by another and still narrower belt of schist.

One of the maps (Plate 1) accompanying this report shows the relation of the schist-granite contact to the Lincoln group.

Throughout the length of the contact as shown I found the granite adjacent to the schist to be fine grained, with very little mica and having a marked shearing parallel to the contact. This condition prevailed for a width of 100 ft. or more beyond which the granite has its normal coarse texture with rounded outcrops. I do not know whether the sheared granite belt is a contact phase of the main mass or whether it is a later intrusion of similar granitic material.

The Yavapai schists in the vicinity of the Lincoln mine are silicious and dark-colored from the predominance of ferro-magnesian minerals. Their strike is uniformly Northeast and Southwest with a dip of 65 to 70 degrees to the Northwest. In a few places I noted lenses of fissle sericitic schist, but they were of small extent except in the immediate vicinity of the Lincoln vein, which will be mentioned later. In following trails over the surface and examining the numerous shallow shafts and cuts one might be led to remark that the old prospector always chose a soft place to do his digging. It will be noted, however, that he was usually digging on a vein of quartz or ore; the conclusion being that the veins and stringers of quartz followed, or were in some way a product of the softer schistose beds and are not found in the hard outcrops which form the backbone of the ridges throughout the district.

Considerable prominence has been given in previous reports to the so-called "iron dike", which is said to lie about 150 ft. West of the Lincoln vein and parallel to it. It shows a great deal of quartz in wavy bands and bunches with intermediate strata of rusty mica / r chlorite and hematite. Some of the fragments carry a large percent of iron. I take it to belong to the Yavapai schist formation and it may have been a bed of conglomerate or a series of overlapping lenses. It is comformable with the schistosity and outcrops prominently on account of its hardness.

Intrusive Rocks

The oldest intrusive I noticed is a dike of dark green diorite having a width of 50 or 60 ft. and cutting diagonally across the Yellow Jacket claim. It cuts across the schists and is in turn cut by the Lincoln vein. I did not have time to trace its relation to the granite contact on the East. Its position as far as noted is shown on the accompanying plat.

Light Colored Dikes

These dikes are the latest intrusions. Presumably they are rhyolite porphyry and similar to others in the district which are mentioned by Dr. Lindgren and other geologists. Generally speaking, they follow the schistosity but may cut across it at acute angles. Some of them are entirely barren of mineral; for example, the one 50 ft. or more in width, which shows on the trail above the S. W. Cor. of the Quien Sabe claim. Others bear an intimate relation to the veins and cannot be disassociated from them.

The surface geology of the Yellow Jacket and Rough Rider claims is indicative of rather different conditions than are found in the Southern part of the group.

The Rough Rider runs Northerly along the summit, which divides the drainage between Peck Canyon and Poland Creek. The top of the ridge shows more of the light colored silicious rocks with numerous stringers and some prominent outcrops of quartz. Small areas of schisted diorite were noted and a strong rhyolite dike. The North end of the Yellow Jacket also has some large quartz outcrops.

I have mentioned elsewhere the wide cropping of quartz in the vicinity of the Lincoln vein at about the center of the Yellow Jacket claim. Prominent quartz outcrops are entirely lacking in the Southern claims of the group.

The dump of the old patent tunnel on the Yellow Jacket shows black schists of hornblende, iron and chlorite. If the surface of these claims could be stripped of its soil and vegetation it might prove very interesting.

The association of outcrops of quartz, diorite dike and chlorite schists is suggestive of possible copper mineralization at depth. The reported 40 oz. silver ore in the North winze of the tunnel also indicates a change in the predominant gold mineralization of the Lincoln vein.

VEINS

The Lincoln vein probably originated as a simple fissure which in general follows the schistosity of the enclosing rock but may cut across it in places. The later deposition of quartz and minerals was influenced largely by the structure and composition of the rocks forming the walls of the fissure. Throughout its length the vein may be divided into three segments for convenience and description. In the South segment, through the S. P. Carlin claim, the vein is accompanied by a narrow belt of light colored sericite schist, which is flanked by massive, dark colored hornblende rocks on either side. The soft, disintegrated schist shows on the West side of the mouth of the

South Camp tunnel for only two or three feet in width. Assuming the tunnel was run in similar material, the total width of schist would be only seven or eight feet.

Practically the same condition exists throughout the length of the S. P. Carlin claim, with a possible widening of the schist lense in the vicinity of the old discovery cut, which is 400 ft. from the South end of the claim.

The second segment, which is the Quien Sabe lode, shows a widening of the schist belt, a condition which is probably responsible for the Lincoln ore shoot. At the 75 ft. shaft, which is 130 ft. from the South end of the Quien Sabe, the soft schist shows a width of 40 ft. on the West side of the shaft and from the appearance of the soil, an equal width on the East, making a total width at this point of 80 ft. 350 Ft. further North at the mouth of the Quien Sabe tunnel the schist belt is narrow West of the tunnel, but has widened to 150 ft. on the East. It gradually narrows going North to a width of 100 ft. at the upper caved tunnel. At the North end line of the Quien Sabe it has narrowed down to about as it was through the S. P. Carlin lode.

The first three or four hundred feet of the third segment is about the same as the first; that is, eight or ten feet of decomposed, soft schist. A little further North there are some wide quartz outcrops, but I have not had an opportunity of studying their relation to the vein, and am leaving the North end of the property for further examination.

Throughout the length of the vein the West or hanging wall side consists of the dark colored, silicious and hornblendic members of the Yavapai formation. The same may be said of the East wall except through the Quien Sabe claim, where the sericite schist lense attains its unusual width.

I had little opportunity to study the structure of the vein at the surface as the old cuts and shaft are completely caved and I could only see it a few inches below grass roots. The discovery cut and one or two other holes on the S. P. Carlin showed a few inches of milky porous quartz with limonite stained vugs. Some of the larger fragments on the dump indicated a quartz width of ten inches.

The following paragraph in my former report was based on observations of the vein in the long drift of the Yellow Jacket tunnel:

"Using the term "vein" in its broad sense, I would say that the Lincoln vein was from six to fifteen feet wide and has a Westerly dip of 65 to 70 degrees. The foot wall being fairly well defined and regular as it is the original fissure. Along the foot wall is the main deposition of quartz and sulfides and parallel to it other and narrower bands of quartz separated by

gouge or clayey material. The "paying" width of vein was probably the width over all, of the quartz part of it and varied from a few inches to three or four feet, with the probability that in places the values extend still further toward the hanging wall side. I presume that the mineralization and silicification originated along the foot wall fissure and proceeded toward the hanging wall side a distance depending on the permeability of the vein material and the pressure of the mineralizing solutions."

Apparently the vein is accompanied throughout the greater part of its length by a porphyry dike, which is difficult to distinguish in the surface openings from the narrow belt of schist, both are light colored and disintegrate completely to a sandy-kaolin mass.

CHARACTER OF THE ORE

I have been able to study the oxidized surface ores from the small piles left on the dumps of the numerous workings along the apex of the vein. Apparently the gold and silver values are carried in the quartz and were originally along with the sulfides, the complete oxidation of which gives the typical "iron ore" color and the vugy, porous structure of the quartz.

As to the unoxidized ores from the lower levels, the only opportunity I had to study them was from a pile of a few tons which had been sorted out or had spilled over at the mill ore bin. This pile was made up of chunks of quartz from a foot across to a small fragment. They showed sulfides in plenty, of pyrite and chalcopyrite a less amount of a gray sulfide, which was probably tetrahedrite. A considerable part of the value of the ore is in silver, which is probably carried by the gray sulfide, before referred to. I took a seven or eight pound sample from this pile of ore which assayed .64 oz. gold and 7.08 oz. silver, having a market value of $17.26 per ton, in addition to the copper, which was not determined. This pile of ore was at the mill bin and I suppose was intended for mill ore. One of the Engineers reports that the high-grade part of the vein was "solid sulfides" in places.

DEVELOPMENT AND PRODUCTION

The principal sources of information concerning the development and operation of the Lincoln Mine are the reports of Geo. Kislingbury, dated Oct. 5, 1905, and Bernard P. Miller, not dated but made subsequent to Jan. 1908. I have also had access to the letter files of the late Chas. T. Joslin, which have supplied considerable information lacking in the reports referred to.

At the time of survey of this group of claims for patent in 1901 one of the improvements shown on the patent plat is a tunnel about 200 ft. long on the center line of the Quien Sabe lode. Ore was mined from the back of the tunnel and packed on burros to a two stamp mill located at the present mill site. Subsequent developments have shown the tunnel to be in the main ore shoot.

The owners must have soon realized there was little profit to be made by packing ore on burros to the mill and a new tunnel was run from the camp and mill site. In order to cut the vein the tunnel was run across the formation a distance of 395 ft. from the mouth and then southerly along the vein a distance of 1,627 ft. at which point it intersected a shaft, which had been sunk from the discovery tunnel before referred to.

This project must have cost considerable money, and in fact, very little development work has been done on the property since its completion prior to 1905.

The report of Kislingbury in Oct. 1905 states that ore was being stoped from above the tunnel, and that a five stamp mill had replaced the original two stamps. Also that the shaft in the ore body had been sunk 100 ft. below the tunnel level, and about 100 ft. of drifting both Northerly and Southerly from the shaft along the vein.

Smelter returns up to the date of the Kislingbury report indicated that about $8,000 had been received from the shipment of 1 car of $18 ore, 3 cars of concentrates running $40 to $60 per ton and six shipments of bullion netting $5,000. It appears from these figures that they were saving a large part of their values on the plates as might be expected in treating a thoroughly oxidized ore.

As far as I know this is the earliest record of production we have and it must represent only a small part of the ore mined from 1886 to 1905 of which we have no record. At this time they had the vein opened for a length of 200 ft. on the tunnel level and a small stope 50 ft. long and 50 ft. high the width of the best ore being about 30 inches. He mades an estimate of the ore in sight at about 1,200 tons of $33 ore and 1,200 tons of $9.50 mill ore. It should be remembered, however, that later developments showed the ore shoot to be 400 ft. long instead of 200 ft., and that it extended up to the level of the old Quien Sabe tunnel.

At that date, while the shaft was down 100 ft. below the tunnel level, no ore had been opened up, as the drift had not been extended far enough North.

The report and statement of Bernard P. Miller covers very fully the operation of the mine from Oct. 1905 to Oct. 1907.

The following extracts are taken from his statement, many of the paragraphs being copied in full:

"The present owners during the first few years of development had a two stamp mill and a little later a five stamp mill, and milled ore from the grass roots down"...."the ore milled was an oxidized ore running entirely in gold used to plate from half an ounce to one ounce per ton, with several dollars going into the tailing dump. In the spring of 1906 the little five stamp mill was dismantled and an up-to-date fifteen stamp mill was put in, 1,000 lb. stamps, two Wilfley tables and three Fruevanners, which gave us a perfect concentration, and our tailings from this mill have run as a rule from $1.20 to $1.50."

"The mine was closed down on the first of Nov. 1907 owing to the closing down of the Humboldt Smelting plant forty miles distant, which owed the company for the October shipments."

"The mine has been operated to great disadvantage owing to the fact that the small hoisting plant would not do the work, and not more than ten or twelve miners have worked during the past few years, half of them in the stopes and the balance on keeping up the development work. The payrolls have run from $2,000 to $2,500 per month, which includes supplies, and the ore shipments and returns from mill have generally run in excess of these figures."

Mr. Miller gives a detailed statement of the smelter returns by carlots, of which the following is a summary:

Oct.30,1905 to Dec.23,1905	6 cars-190.8	tons	$31.25	ton	$ 5931.31
Jan.31,1906 to Nov. 1906	7 cars-135	"	45.00	"	5141.75
Jan.11,1906 to Dec.28,1906	21 cars-462	"	45.00	"	20728.70
Jan.17,1907 to Oct. 7,1907	14 cars-523	"	90.00	"	29041.41
	Total ore and concentrates				$60843.17
	Bullion shipments				16095.23
	Total receipts				$76938.40

Mr. Miller has the following to say in regard to the shipments during the year 1906.

"The above ore and concentrates shipments to the Arizona Smelting Co. during the year 1906 amounted to the above figures ($20,728.70). The freight and treatment charges averaged about $12 per ton and the entire shipments for the year averaged $45 per ton net. This would have been considerably more had it not been for the fact that the Sup't. shipped seven cars of ore of such value that it should have gone to the mill instead of the smelter. It was in the rainy season when there was no way of sorting the ore. Had it not been for these shipments, the balance of the ore shipped would have averaged around $65 per ton net. This ore was taken part from the stopes above the tunnel and the balance below the tunnel level."

In regard to the production during 1907 he has the following to say:

"The above ore and concentrates shipped to the Arizona Smelting Co. from Jan. 17, 1907 covering a period of nine months, amounted to the above figures ($29,041.41). This ore was taken from the stopes below the tunnel level. The highest value was $121.25 gross and the lowest was $65.69. The freight and treatment charges averaged about $14 and the net value of the ore from the entire nine months averaged a little better than $96.00 per ton. (I make it $90.00 per ton.)"

"The metallic content of the ore is in gold, silver, copper and iron; the greatest value lies in the gold and silver and the ore is free from antimony, arsenic and zinc. Between 40% and 60% of the gold is free, the copper occurs in chalcopyrite."

"As to the values within this shoot, it is interesting to note the value of the ore shipped to the smelter during the years 1905, 1906 and 1907, when the ore averaged $31.00, $35,00 and $95.00 per ton net. It will be seen that at greater depth the value of the ore has increased considerably; the stopes from the bottom level to the main tunnel have yielded remarkably rich ore."

"The most remarkable feature of the mine in this state of development is unquestionably the aspect of the ore body at the bottom level and in this case the indications are exceptionally encouraging."

"In the South drift of the lower level a new ore shoot seems to make its appearance and development in that direction may lead to the discovery of another important ore shoot."

The shut-down in 1907 to which Mr. Miller refers, marked the end of active production.

(Mr. M. F. George relates that according to his recollection the Smelter owed about $6,000 for ore shipments and that the mine closed down about two months later owing $5,000 or $6,000 which was made up personally by the owners.)

During the following years the property appeared to have been operated intermittently, but I have been unable to get a connected history. The following disconnected facts may be of later interest:

In 1911 about 42 tons of ore were shipped, which averaged $45 per ton. Presumably the ore came from the back of the main tunnel, North of the Quien Sabe stopes. In 1912 a cross-cut was run from the main tunnel level toward the "iron dike", a distance of 150 ft. It was reported that the ground was very hard and the dike had not been cut when work was stopped.

In Nov. 1912 some work was started in the vicinity of the South Camp tunnel by a syndicate who raised $7,000 or $8,000 for the purpose. The work was in charge of J. H. Jones. From his correspondence I judge the work to have been trenching and open cuts, following stringers of ore which went off into the granite near the South end of the S. P. Carlin. It may have been that the South Camp Tunnel was started at this time.

During the latter part of 1915 and 1916 the main tunnel was cleaned out and retimbered and a shaft sunk to a depth of 175 ft. This work was in charge of D. H. Bradley, who in 1917 made a lengthy report on the property and advised sinking the shaft deeper. He states that the shaft was sunk close to the hanging wall, where the ground stood better. This shaft, now known as the "Bradley winze" is shown on the plan map Plate 2 and reference will be made to it later.

In 1918 some ore was mined from above the main tunnel in what is known as the Matheney stope, which is shown on the map. I have been told the ore taken out ran $35.00 but have not learned the amount shipped.

The foregoing portion of this report is largely a compilation of facts and opinions taken from reports of engineers and operators who were familiar with the mine during its operation, their observations being made while the drifts were being run and the stopes were open to inspection, and last but not least, while the impressions gathered were fresh in their minds.

At the date of this report (November, 1927) the Quien Sabe shaft, and all its workings, is completely caved and lost. The Bradley winze and the 40 ft. winze further North in the tunnel is full of water and the main tunnel is caved in places so as to be inaccessible to inspection fro the greater part of its length.

Any estimate we can make at the present time, of the value of the mine, must be based largely on facts derived from former reports, coupled with the existence of geological conditions which may influence our conclusion one way or the other.

Without committing myself at this time as to the profits to be derived, I am convinced of the probable downward extension of the ore shoot which has been mined to a depth of 100 ft. approximately, below the main tunnel level.

First as to its probable value. The best index we have to its value is the record of production in 1907 when the stope was mined out for a depth of 100 ft. below the tunnel level. The records show that the average net value of the shipments was $90 per ton. It is true that the average has been obtained by including the concentrates with the sorted ore shipments.

But on going over the record and taking only the ore shipments, I find the average gross value to run from $51 per ton to $103.70 per ton, with an average net value only a little lower than that obtained by including the concentrates. Bernard P. Miller says in his report - - "The most interesting feature in a mine in this state of development is the aspect of the ore body at the bottom level, and in this case the indications are exceptionally encouraging".

My own experience has been that in ore shoots in which the values in gold and silver decrease with depth, as many of them do, that the decrease takes place at the water level, where the ores change from oxidized to sulfide ores. In this case the water level seems to be at the tunnel level, or a little below it. The reports all mention ores mined from the upper stopes as being thoroughly oxidized, while reference is made to the lower level as showing bunches of "solid sulfides". The small pile of ore, which I saw at the mill bin, was sulfide ore showing little oxidation.

I judge, therefore, that the change from oxidized to sulfide ore has taken place near the tunnel level and with an increase rather than a decrease in values. I feel justified, therefore, in assuming that the value of the ore is going to remain fairly constant for a considerable distance below the present bottom level of the shaft.

Second -- As to the probable dimension of the ore shoot. In this connection your attention is called to the "Longitudinal Section along the Lincoln vein" on Plate 3, accompanying this report.

The outlines of the stopes on Plate 3 are copied from the report map of Mr. Miller giving the conditions which existed at about the time the mine was shut down in November 1907. The ore shoot was 400 ft. long on the main tunnel level and stoped out for the full length, except for an intermediate section 40 ft. long which is also marked "ore" on his map, and may have been left as a pillar.

The ore shoot has a rake of about 45 deg. to the North and hence was not cut on the lower level until the drift had been extended about 160 ft. from the shaft. It is then stoped overhead for a distance of 175 ft. The North face of this stope was probably the working face when work was stopped, by the failure of the Humboldt Smelter (according to Mr. Miller). The drift had been extended for 85 ft. beyond the stope and assays noted on the map show 6 ft. of $8 to $10 ore, 3 ft. of $19.35 ore and 1½ ft. of $32.00 in different cuts. The North face of stope and for some distance ahead of the drift it is also marked "ore".

Assays are also noted at the back of the drift for 50 ft. South of the South end of the stope, running from $8.00 to $12.00. Taking everything into consideration, I think we are justified in assuming that the ore shoot has been proved for a length of 300 ft. on the bottom level, with indications that it may be much longer. In this connection, I wish to call your attention to the location of the Bradley winze as shown on the plan map of workings.

The question naturally arises - If the ore shoot has a considerable extent in a Northerly direction on the 100 ft. level, why was it not cut by the Bradley winze?.

The ore lies on the foot wall of the vein, this is indicated in all the reports. The map shows that the North end of the 100 ft. level is swinging to the East and is approaching a point vertically under the tunnel level. In other words, the quartz foot wall streak instead of going down on the normal dip, is standing almost vertical between the 100 ft. level and the floor of the main tunnel.

Bradley says that his shaft or winze was sunk on the hanging wall of the vein which has a normal dip of 65 to 70 degrees to the West, and I have shown it on the map in that position.

It is easily seen that the winze is not in the ore and that to get the ore from the bottom of the winze it would be necessary to crosscut into the foot a distance of 40 to 70 ft. It is evident, therefore, why there is no ore in the Bradley winze and t hat it does not disprove the extent of the ore in a Northerly direction in the Quien Sabe stope.

Before making any recommendations toward the mining of the ore below the tunnel, I wish to present some additional facts which have a bearing on my conclusions.

In May 1912, Mr. C. T. Joslin engaged E. A. Wetmore, a Mining Engineer, to make a report and recommendations as to the further development of the Lincoln Mine. At that time the old workings were caved in and about in their present condition. Mr. Wetmore's report is confined to a comparison of costs between a new shaft in the old ore body and a tunnel which he advocates from the Southerly end of the S. P. Carlin claim.

In the next few years following Mr. Wetmore's report, an attempt was made to run the tunnel advocated by him, but was not sufficiently financed to carry it through. However, as a result a camp was established, partly on the North end of the American Girl and partly on the S. P. Carlin claim, and a tunnel started beginning near the end line of the S. P. Carlin claim and running into the hill for a distance said to be 467 ft.

This is known as the South Camp Tunnel. The tunnel is said to have been open and accessible until very recently, but at the time of my inspection, the top lagging of the first set of timbers had given away and the soil had caved, blocking the entrance. There is a small stream of water running from the tunnel.

In his report, Mr. Wetmore estimates that the tunnel will cut the Quien Sabe ore body at a depth of 400 ft. below the level of the main tunnel from the mill. I do not agree with him, after going over the surface and taking the vertical angles with the Brunton compass, and would say that the vertical difference is nearer 300 ft. than 400 ft. However, if the weather was favorable, Mr. Wetmore's observation with aneroid barometer is probably more accurate than my estimate. An instrument survey should be made to determine the vertical depth with accuracy.

Mr. Wetmore's report concludes as follows:

"In conclusion, I will enumerate some of the advantages of the tunnel over the shaft plan.

1. The prospecting and development of the long stretch of new territory by the tunnel, which is not done by the shaft and in particular the depth of the tunnel in cutting deep ore shoots.
2. The lower first cost of the tunnel over the shaft as well as the lesser cost of equipment.
3. The lower cost of operating by way of tunnel and the much lower cost of ore extraction.
4. The doing away of all engineers, pump men and all other labor except trammers, by the tunnel.
5. No hoisting of ore or waste, all falls to tunnel by gravity.
6. No cost of handling water, all flows from tunnel by gravity.
7. A sure and abundant supply of water from tunnel for all purposes.
8. The cutting in half of all charges in getting supplies from station to location.
9. Lower rates of transportation on concentrates, etc. from mill to station.
10. Location of mill need not be changed till work is done and future of tunnel assured.

Having in mind the facts available in regard to the Quien Sabe ore body and the reasonable downward extension of the same which may be expected, I am of the opinion the Lincoln vein is worthy of further development with two objects in view; first, the extraction of the ore assured in the Quien Sabe ore shoot. Second, the exploration of 2,000 linear feet or more of the vein which has not been prospected. Furthermore, the only plan of development which I can endorse is the one advocated by Mr. Wetmore.

I have considered the feasibility of a new shaft from the main tunnel level at the mill and, as far as the actual cost of construction is concerned, it would require about the same investment as the tunnel plan.

The deciding point against the shaft is the cost of operation, and particularly the cost of continual pumping of water, the quantity of which cannot be estimated at the present time.

The old workings for a hundred feet below the tunnel level are full either of water or of caved muck saturated with water. The draining of these old workings will add to the normal inflow of water besides being a source of annoyance and expense in stoping the ores.

The added cost of operation would also preclude the mining of a grade of milling ore, which would pay a handsome profit when mined through the tunnel.

In this connection it should be noted that the market value of ore is less today than it was in 1906 and 1907. Silver is somewhat lower and the net value of copper only about half what it was then.

If the shaft plan were adopted, the shaft would be located, of course, some distance North of the Quien Sabe stope and probably about 1,000 ft. from the cross-cut to the mill. The ore tram therefore would be 1,000 ft. plus the length of crosscut of practically 400 ft. or a total of 1,400 ft., which is more than half of the total tram required to get the ore out of the South Camp tunnel.

The shaft plan would also necessitate the cleaning out, retimbering and maintaining of the present tunnel level, which at the present time is badly caved in places.

There are many other objections to the shaft plan of development which I do not think necessary to mention, as most of them are enumerated in Mr. Wetmore's report.

The only argument I can think of in favor of the shaft plan is that the present camp site, with its buildings, and the mill in its present condition, could be used. Measured in dollars and cents, this advantage does not amount to much.

My second reason for advocating the South Camp tunnel plan of development is the probability of the tunnel opening up another body of ore, indications of which are found on the surface directly over the faceof the present tunnel.

There is every indication along the cropping of the vein at from 400 to 800 ft. North of the mouth of the South Camp tunnel of the apex of another ore shoot. Several shallow cuts show 3 Ft. or more of vein matter with iron stained quartz.

On the dump of an old tunnel is a small pile of ore. The ore is a decomposed quartz with a great deal of limonite and hematite and must have originally been a very massive sulfide ore.

Samples from this dump panned gold freely and an assay from an average sample gave 1.07 oz gold and 1.01 oz silver value $22.68 per ton. Copper not determined.

On an old blue print which I have, there is a notation as follows - "4 ft. x 110 ft. surface ore $8 to $33 per ton", this being along the apex of the vein near the old tunnel above referred to.

These showings are in part directly over the face of the present South Camp tunnel. It is well known that ore shoots in the same vein, and, in fact, throughout the same district, almost invariably rake or incline in the same direction. If this ore shoot rakes to the North at an angle of 45 deg. (similar to the Quien Sabe shoot) it would still be from one to two hundred feet ahead of the face of the tunnel.

In consideration of the above showings, I fully expect that the South Camp tunnel will encounter ore within the next two or three hundred feet.

There are one or two other favorable features in connection with the Quien Sabe ore body to which I have not called your attention, which may indicate another shoot of ore to the North or a greater length on the same shoot.

For several years after the period of production ending November 1907 there were sporadic attempts made to work the Lincoln Mine. In one of these periods, approximately 1916 to 1918, some stoping was done above the main tunnel level in what is called the Matheney Stope. I have marked this stope on the longitudinal section Plate 3 with dotted lines as neither its exact location or its extent is accurately known. It is North of the Quien Sabe stope. I have been unable to get any figures as to the quantity of ore mined and only mention it to show a possible extension of ore in a Northerly direction.

Six or eight hundred feet still further North and about 300 ft. before the Crosscut to the mill is reached, there is a winze 40 ft. deep and now full of water, said to show three ft. of ore carrying forty ounces of silver to the ton. This is also mentioned in the report of Bernard P. Miller as a matter of hearsay only.

In a short cross cut 20 ft. South of the winze, there is exposed a body of solid quartz, eight ot ten feet wide and carrying a large amount of iron pyrite. An average sample carries only a trace of gold and silver. In spite of its not showing any value at this point I attach considerable importance to a body of quartz of this size carrying so much pyrite. It is

probably connected in some way with a point noted on the surface where the vein is 15 to 20 ft. wide with a large amount of quartz.

Taking it all together, thereis considerable evidence of a body of ore North of the old Quien Sabe ore shoot.

Indications of ore extending Southerly from Main Shaft, in regard to the possibility of ore being found South of the Quien Sabe shaft, it is evident that the former operators found some encouragement in that direction as the map shows a drift running 240 ft. Southerly from the shaft.

As quoted hereinbefore in Mr. Miller's report - "In the South drift of the lower level a new ore shoot seems to make its appearance, and development in that direction may lead to the discovery of another important ore shoot."

My recent examination of the surface shows that the widening of the soft schist belt starts South of the 75 ft. shaft near the South end of the Quien Sabe. The surface indications therefore are favorable and tend to substantiate Mr. Miller's belief that ore will be found in that direction.

LENGTH OF TUNNEL

The estimated length of tunnel will be subject to some revision when accurate surveys are made, but from the present information, I make it as follows:

Face of present tunnel to Quien Sabe South end line.....	970	Ft.
Quien Sabe end line to point under Quien Sabe shaft.....	630	"
Allowance for rake of ore shoot.....	300	"
Distance from end of present tunnel to beginning of Quien Sabe ore shoot.....	1,900	"
To this should be added the distance to be driven in the ore shoot, estimated.....	400	"
Total necessary for mining Quien Sabe ore shoot.....	2,300	"

The extension of the tunnel beyond the Quien Sabe ore shoot will probably be a matter for later consideration, depending largely on the value of the ore encountered and the appearance of the vein at the face of the tunnel.

I am estimating that the construction cost of the tunnel will run from $10 to $12.50 per foot, which will be referred to later.

The question ariees as to the quantity of ore which may be anticipated in the Quien Sabe ore shoot below the old stopes.

The former reports have little information about the width of vein or the total tonnage of ore mined.

However, the map with the report of Bernard P. Miller gives the outline of the stopes from which he says the output of ore for 1907 was mined. This was between the 100 ft. level and the main tunnel level, and shows an area of 18,000 sq. ft. of stoping, leaving the width of vein out of consideration. The production from this area was $29,040 in ore and $9,680 in bullion, or a total production of $38,720.

Assuming that the South Camp tunnel extension will gain 250 ft. of additional depth, we will have a block of ground 250 ft. x 400 ft. or 100,000 sq. ft. To be on the safe side say the ore shoot is only 300 ft. long which would give 75,000 sq. ft.

If the value of the ore and the width of vein is the same as above, the net smelter returns would be $162,540. The mining costs which would have to be deducted would depend so much on the width of the vein that it is impossible to estimate them at this time. It might be more profitable to run all the ore stoped through the mill, rather than sorting and shipping the high-grade, which has been done heretofore.

SOUTH CAMP SITE

The location of this camp site on the American Girl claim and about 100 yds. below the mouth of the tunnel is not as favorable as the old camp at the mill. The gulch is rather rough and narrow and the road is steep to the main Crown King road 150 yds. further down the gulch.

There are two small buildings now at the camp which can be repaired at small cost. I figure that you will have to provide housing for 12 or 15 men for the operation of the tunnel, and that additional buildings required will have to be moved from the old camp.

The starting of work on the tunnel involves the following preliminaries:

1. Repairs to roads and buildings at South Camp site.
2. Moving of two or three buildings, and mining supplies, cars, rails, pipe, tools, etc. from the old camp.
3. Providing water supply for domestic and mine use.
4. Extension of electric power line (commented on later).
5. Repairs to present tunnel, power house and shop.
6. Purchase and installation of machinery and supplies.

There are two small corrugated iron buildings at the mouth of the South Camp tunnel; one about 12 ft. square used for a blacksmith shop, the other of similar size for a change house. A new building would be required for a power house.

Expense of repairing the present tunnel is rather uncertain until it can be cleaned out at the entrance and examined. If there are no serious caves further in, the expense will be nominal.

MACHINERY AND EQUIPMENT

Following is a list of machinery required which I do not claim is complete and is for the purpose of estimating the outlay required for this purpose. Allowance should be made for additional items.

Ingersol-Rand Compressor, A.R.1 12x10 350 cu.ft. capacity with 60 H.P. Motor, installed	$2,750
Receiver for same	250
Blower and Motor, 2d hand	100
Leyner drill, with air hose, water hose and bar	500
Water tank for compressor, probably can be taken from old camp.	
Blacksmith shop equipment (without drill sharpener) est.	400
	$4,000

Small centrifugal pump and motor for shop.

MINING EQUIPMENT

Drill steel	$300	
2,900 ft. 1" water pipe)		
" " 1½" air ")		
" " 8" ventilating pipe)	2,800	
" " Track - 12# rail)		
Cars (unless old ones can be used)	300	
	$3,400	
	4,000	
		$7,400.00
As an approximate estimate of the cost items (1), (2) and (5) listed on previous page		850.00
Estimated outlay required to start work (except electric power line)		$8,250.00

I am unable at this time to give you figures on the cost of getting the Arizona Power line to the mouth of the South Camp tunnel. I believe you had a tentative arrangement with the Power Company for the extension of lines to the old camp, which it may be necessary to revise on account of the change in plans. Whatever expense is necessary should be added to the "Estimated outlay required to start work" of $8,250.00 given above.

OPERATING EXPENSES:

My estimate of costs is as follows, figuring two eight hour shifts per day:

Labor - 2 miners and 4 muckers	$ 30.00	per day	$100.00
Ammnition (powder, fuse and caps)	20.00	" "	
2 Engineers	11.00	" "	$200.00
Blacksmith and helper	10.00	" "	$35.00
Superintendent or foreman - - - - - - - - - - - - -	10.00	" "	$30.00
	$ 81.00	" "	

For month of 26 days	$ 2,100.00
Estimated power bill	400.00
	$ 2,500.00

If miners average 4 ft. per shift, cost per foot will be $12.50
If miners average 5 ft. per shift, cost per foot will be $10.00
(figuring 25 effective shifts)

You will notice in this estimate that the cost at the face of the tunnel (miners, muckers and amunition) is from $5.00 to $6.25 per foot. I doubt if you could get a contractor to run it for that price and furnish his own powder.

If anything, my estimate is too low and you will be fortunate to get the tunnel run for $12.50 per foot.

You will notice that I have not allowed anything specifically for cost of timber, ties, lubricating oils or blacksmith coal.

Possibly, labor costs at Crown King may be somewhat lower than I have figured them. I would estimate total cost as follows:

Equipment	$ 10,000.00
2,400 ft. tunnel at $12.50	30,000.00
	$ 40,000.00

MILL SITE AND WATER

Consideration of the mill question may come up on development of ore in the 1st shoot and in a short time after starting work.

The ore in the 1st shoot will be an oxidized ore, a large part of the values being recoverable on the plates.

I would advise that it be fully developed by a raise possibly through to the surface and the ore fully blocked out before making plans for a mill.

Its value then can be fully determined and continuous operation of the mill assured after it is started.

The possibility of a mill being required soon is an argument for extension of the electric power lines instead of using a hot head engine for the compressor, which might be considered if there was only that use for the power.

Without having investigated it in detail, I am satisfied that a suitable mill site can be found near the mouth of the proposed tunnel.

WATER SUPPLY

The assumption may fairly be made that after the tunnel cuts the Quien Sabe ore body, that there will be ample water for milling purposes.

Until that time it may be necessary to develop other water resources.

With this idea in view, I would suggest the acquisition by location, or purchase if necessary, of the ground on which the old arrastra was located. This is a small meadow located East of the Quien Sabe and South of the Norma lode. The schist-granite contact runs through it and there is an old well with water standing to the surface and running over into two small ponds. I have no doubt but that a permanent water supply could be developed along the contact. By putting in a small gas engine pump, the water could be "boosted" over the first ridge and would have a fall of from 200 to 300 ft. from there down to the mouth of the tunnel. About 2,000 ft. of pipe line would be required.

The ground in question is said to be owned by Jim Lewis, who has a cabin there. It is a question as to how much work he has ever done to hold it, but he is an old-timer and has undoubted possessory rights.

My estimates have considered only the cost of tunnel to the limit of the Quien Sabe ore shoot, a distance of 2,300 ft. beyond the face of the present tunnel. I think, however, that you should seriously plan the extension of the tunnel to the full three thousand feet, as shown on the maps, and your financing with that end in view.

I am recommending the extension of the South Camp tunnel as a means of developing the Lincoln vein for a length of 3,000 ft. and for the economical extraction of the ore, and have discussed heretofore only the ore reserves above the tunnel level.

For mining ore below the tunnel it is evident that one or more shafts will have to be sunk below the floor of the tunnel. This method is entirely practical and is being used in many mines of this State. The miners of the United Verde mine at Jerome all enter the mine through a long tunnel and then down a deep shaft. The hoisting plant being in a station on the tunnel level.

Your tunnel will be available for this purpose, and the ore can be delivered at the mill irrespective of whether it is mined above the tunnel level or below it.

It is premature at this time to make definite plans for mining below the tunnel level as the location of shafts will depend on the position and size of the ore bodies developed by the tunnel.

Finally, in recommending the tunnel plan of development, I have in mind the possibility of extending it beyond the limits of the Lincoln vein, and its use in the exploration and development of the Watsonville and other veins lying to the West and North.

The following notes on the Watsonville lode were made subsequent to the compilation of the foregoing report:

The Watsonville lode claim was located by Ernest R. Hill January 1, 1892 and patent issued August 31, 1905, the patented area being 11.965 acres.

The improvements at date of survey for patent consisted of a tunnel 341 ft. in length, a tunnel 65 ft. in length and three shallow openings.

The Watsonville vein runs through the middle of the claim about 300 ft. West of the Lincoln vein and is probably identical with and the North extension of the Elene vein.

While the Watsonville and Lincoln veins are apparently parallel there is some indication of their converging toward the North.

The Watsonville vein is similar to the Southerly end of the Lincoln vein, that is where the sericite schist lense is very narrow and the walls are hard silicious-hornblendic rocks. The vein dips Westerly at 70 degrees, the vein filling being quartz with pyrite and traces of copper. I do not recollect seeing any porphyry associated with it.

I believe the 65 ft. tunnel is partially open to inspection but I did not go into it except to note that there was a small underhand stope near the entrance, the ore appeared to be tight and 6 in. to 18 ins. in width. A small quantity of iron stained quartz on the dump is said to run $12 to $14 per ton in gold. I understand that Mr. Strain milled some ore from here. The Watsonville fissure seems to be persistent in length for 2,000 or more feet and there may be some place throughout its length where the enclosing rocks are softer, permitting of more extensive mineralization than at the few places which came under my observation.

Its relation to the quartz areas on the Yellow Jacket should be investigated.

Respectfully submitted

Alfred B Coldwell E.M.

Prescott, Ariz.
Nov.15-1927

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OCT 1 1970

AIRMAIL

Joseph R. Neaves, Jr., DBA:
Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

A careful review of your application for financial assistance to explore the subject property and other information available to us indicates that the probability of disclosing significant reserves of gold and silver on your property is not sufficiently promising to justify Government participation in the proposed exploration. Accordingly, we regret to inform you that your application for assistance is denied.

We wish to thank you for your interest in the minerals exploration program and for bringing your property to our attention.

Sincerely yours,

Harold Kirkemo (bsl)

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources File
~~OME~~ Docket
OME Reading File
OME Region III
Mr. Emerick
130

WLEmerick/bsl 9/29/70

MME Form 7
(2/63)

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Date	Surname	Code
9/29/70		120
	Emerick	120E
		220

September 29, 1970

Memorandum

To: The File

From: William L. Emerick
Office of Minerals Exploration

and

Harold Kirkemo
Chief, Office of Minerals Exploration

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Justification for Denial of Application

The applicant proposed to test the downward extension of the main ore shoot at the projected level of the proposed lower tunnel in the Lincoln mine with four nearly horizontal diamond drill holes from the surface. Estimated cost of the project amounted to about $65,000.00.

The Field Examiner concluded that there was a good geologic probability that the main ore shoot continued downward to the proposed depth of exploration drilling, and that there was a fair chance of finding significant quantities of milling grade ore within the shoot at and above the drilling depth. He, therefore, recommended approval of the drilling program.

Final decision on this application depends mainly on information in old reports as none of the mine workings are now accessible, and surface exposures show no economic promise. Old reports indicate that most of the production resulted from mining enriched oxidized ore, and that as a rule the primary ores were not rich. The history of the mine shows a period of rich gold-silver ore production from the surface to a depth of about 200 feet followed by declining output, lesser values, and finally cessation of operations on the bottom level for financial reasons.

During the last period of activity at the Lincoln mine, in 1931, operations were on the lowest developed level, and the value of ore shipped was about equal to the cost of mining. The vein was described as characteristic of the vein in the upper levels, but whether the ore consisted of oxidized and enriched material, mixed sulfides and oxides, or primary sulfides was not stated.

Therefore, we have no information on which to base a judgment on the probable value of the vein material at the depth of the intersections of the proposed diamond drill holes, some 150 to 200 feet below the bottom level of the mine, with the vein. Accordingly, we recommend that the application be denied. We discussed this decision with the Field Examiner and the Field Officer and both concurred in the decision.

The workings of the Lincoln mine in the Pine Grove district have been inaccessible for many years because of caving and flooding. Conclusions as to the chances for or against making a significant discovery of ore in the mine today must be formulated upon the information by Waldemar Lindgren in Geological Survey Bulletin 782 (1926), and upon two private reports, one by M. F. George in 1927 and the other by A. B. Carpenter in 1932. Report to M.F. George

A. B. Colwell Rpt. to M. F. George 10/6 12/9/20

The 1927 report indicates there is no record of production from the mine for the period, 1886 to 1905. From 1905 through 1907 total receipts from 1,311 tons of ore and concentrates amounted to $60,843 and from bullion shipments $16,095. The ore and concentrate shipments averaged $31.25 per ton in 1905, $45 per ton in 1906, and $90 per ton in 1907. The mine was closed down in November 1907 after the nearby smelter ceased operations. The 1907 ore was taken from stopes below the main tunnel on the 100-foot level. If the stoped-out areas shown on maps represent the enriched oxidized ore, the shoot was irregular and not large and the 100-foot level may have marked the lower limit of the oxidized ore with better than average enrichment. Forty-two tons of ore averaging $45 per ton, presumably from the back of the main tunnel, were shipped by an unknown operator in 1911 and in 1918 an unknown tonnage of ore was taken from the Matheney stope in the back of the main tunnel. At the time of Mr. George's report all workings were inaccessible and his conclusions were drawn from information contained in old reports and his interpretation of geological conditions. The Applicant's proposed extension of

the South Camp tunnel, 300 feet below the main tunnel level, is essentially the recommendation made by Mr. George. The target of the Applicant's proposed drilling is also in this area below the main tunnel level.

Mr. Carpenter's report in 1932 was made when the property was in the hands of Calincoln Mines, Inc. Carpenter reported that three cars of ore shipped by Calincoln Mines, Inc. to the smelter netted just about enough to cover the expense of its extraction. Calincoln Mines had deepened the old Bradley winze in the hanging wall of the vein to about the 200-foot level and then drifted north and south on the vein at this level. Since this was all of the mining done by the company it is assumed that the three cars of ore came from this part of the Lincoln mine.

Lindgren (1926) indicates that in the Pine Grove district the veins were very rich near the surface, but as a rule, the primary ores were not rich. The Lincoln vein was classed by Lindgren as a typical quartz fissure vein carrying gold and silver. Veins of this type in the district were enriched in silver through long accumulations from parts of the vein long since eroded away. The accumulations of silver during several periods of erosion made the upper oxidized portions of the vein several times richer than the lean primary ore in the ore shoots. Lindgren states that the accumulation of gold is less marked because of surface scattering of the metal during the successive periods of erosion, whereas the lateral scattering of the silver solutions was minimized by the compact country rock.

After a study of the old mine examination reports and maps, the geology of the district, and the production records of the Lincoln mine, a strong suspicion prevails that most or all of the enriched oxidized ore was extracted from the Lincoln mine by the end of 1907, and that the primary sulfide material is too lean for profitable mining even at current prices. The work done by Calincoln Mines, Inc. in the drifts on the vein on the 200-foot level from the Bradley winze did not indicate economic ore at that depth or that the primary sulfides would be richer downward in the vein. The 200-foot level is about 100 feet below the deepest stope in the mine, and approximately 170 feet above the target area of the applicant's proposed drill holes. It appears

from all of the available information that the probability for discovery of significant reserves by the proposed downward exploration of the Lincoln vein, is not favorable and, therefore, expenditure of Government funds in the project is not warranted. Under these circumstances it is not possible to concur with the Field Examiner's recommendation for approval of the application for assistance. Based on the facts set forth above, denial of the application is recommended.

William L. Emerick

William L. Emerick

Harold Kirkemo

Harold Kirkemo

cc: Director's Reading File
Mineral Resources File
OME Docket
OME Reading File
Mr. Emerick
Mr. Kirkemo

WLEmerick/HKirkemo/bsl 9/29/70

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 200

September 16, 1970

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Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Attached is a report by Philip B. Mudgett, Mining Engineer, U. S. Geological Survey, on his examination of the Lincoln mine property.

He concludes that there is a fair chance that core drilling for the downward extension of the major ore shoot at the proposed depth in the Lincoln vein would disclose a significant quantity of milling grade ore. Consequently, he recommends that the subject application be approved.

Although the mine workings were inaccessible to him, the available geologic, production and historical information strongly supports his opinion. Also, the significant production record of the Pine Grove mining district, and the absence of previous OME investigations, therein, suggests that it may be a favorable area for exploration.

I have reviewed the report of examination, and agree with Mr. Mudgett's conclusions and recommendations, therefore recommend that a contract be executed to perform the exploration work herein outlined.

The applicant indicates in his application that he proposes to furnish his share of the costs (1c) from his own funds which he indicates are available and on hand.

J. William Hasler

J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
FEDERAL CENTER, DENVER, COLORADO 80225

Office of Minerals Exploration
Building 53 Room 200

September 16, 1970

Memorandum

To: J. William Hasler, Field Officer, Region III, OME

From: Philip B. Mudgett, Mining Engineer

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Attached is my report covering the field examination of the above mining property.

Approval of the subject application is recommended because the proposed drilling program appears to have a fair chance of disclosing a significant quantity of milling grade ore at depth in the Lincoln vein.

Philip B. Mudgett

Philip B. Mudgett,
Mining Engineer

Attachment

UNITED STATES

DEPARTMENT OF THE INTERIOR

WALTER J. HICKEL, SECRETARY

GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION III

On-Site Exam Report

OME-6815 (Gold-Silver)

NEAVES PETROLEUM DEVELOPMENTS

LINCOLN MINE

YAVAPAI COUNTY, ARIZONA

By

PHILIP B. MUDGETT

MINING ENGINEER

AUGUST 1970

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Illustrations

Figure 1. Applicant's claim map showing underground workings of the Lincoln Mine---------- 10a

Figure 2. Applicant's longitudinal section of the Lincoln Mine---------- 10b

Figure 3. Applicant's enlargement of a topographic map area showing the location of drillsites and access roads (Crown King Quadrangle, Arizona-Yavapai Co., 15 minute Series (Topographic) Scale 1:62500, Contour Interval 50 feet, 1950 Edition, U. S. Geological Survey and U. S. Forest Service).---------- 19a

Figure 4. Applicant's generalized cross section showing the intersection of one of the proposed drillholes with the Lincoln vein.---------- 19b

OME-6815 (Gold-Silver)

Neaves Petroleum Developments

Lincoln Mine

Summary

The Neaves Petroleum Developments Company applied for federal assistance to explore for gold and silver on the Lincoln mine property near Crown King, Arizona, on April 13, 1970. As a first choice, the applicant proposed to extend the lower, or South Camp, tunnel on the Lincoln vein for 2,000 feet to cut the downward extension of the main ore shoot about 200 feet vertically below the lowest stoping level in the mine, and at the same time, explore the vein for possibly intervening ore bodies as well. The lowest total cost for this proposal was estimated to be approximately $223,000.00. As a second choice, the applicant proposed to test the downward extension of the main ore shoot at the projected level of the lower tunnel with four nearly horizontal diamond drill holes from the surface at an estimated lowest cost of $55,241.31.

The applicant had been formally advised that budgetary limitations would prevent consideration of his first choice proposal, hence, only the drilling proposal has been considered in this report. Revision of the proposal was suggested, however, when it became apparent during the on-site examination that it was not based on a reasonably accurate appraisal of the drilling requirements. In the revised application, received on August 25, 1970, the estimated cost

of the proposal was increased to the sum of $65,000.00. The property was examined by Philip B. Mudgett on June 25, 1970.

The seven patented lode mining claims and two patented millsites comprising the property are situated in the Pine Grove mining district within the boundaries of the Prescott National Forest in Yavapai County, Arizona. They are held under lease from the owner, Lincoln Mines, Incorporated of Huntington Beach, California.

The Lincoln vein is developed by an inclined shaft, on the vein, about 300 feet deep, with levels at 150 and 300 feet. A crosscut from the surface 395 feet long provides access to a drift tunnel 1,627 feet long that connects with the shaft at the 150 foot level. Another drift tunnel about 300 feet lower than the 300 foot level extends from the surface for 487 feet to a raise connecting with the surface. None of the mine workings are accessible due to caving, and they are flooded up to the 150 foot tunnel level.

District mineral production valued at nearly $3,000,000.00 in 1924, consisted mainly of the richer oxidized ores containing gold, silver and copper that were extracted above the water table in the early days. Most of the total production from the Lincoln mine, with an estimated gross value of nearly $200,000.00, was of a similar character. Only a small quantity of low grade primary ore containing pyrite, chalcopyrite, sphalerite and galena with gold and silver was sporadically produced after 1910. All operations ceased in 1931 or 1932, and the workings were allowed to cave.

Within the mining district, pre-Cambrian rocks and intrusive granodiorite have been cut by northeast trending acidic dikes and narrow, mesothermal type quartz veins containing gold, silver, copper, zinc and lead. The Lincoln vein strikes N. 18° E. and dips 65° to 75° west, lies within Yavapai schist, and contains one major ore shoot filled with quartz, pyrite, chalcopyrite, sphalerite, galena and tetrahedrite with gold and silver. Some reserves of primary ore worth about $20.00 per ton probably remain on the lowest levels of the mine.

The applicant proposes to explore for the downward continuation of the main ore shoot at the projected level of the lower tunnel by core drilling four drillholes from the surface at a tentative total cost of $61,758.56. However, a recommended reappraisal of the drilling requirements may result in further revision of this estimate.

Some primary ore of shipping grade has been produced from the Lincoln vein, and also in significant quantities from several other mines in the district. Some reserves of primary ore probably remain on the lowest levels of the Lincoln mine.

The writer concludes that there is a good geologic probability that the main ore shoot continues downward to the proposed depth of exploration drilling, and that there is a fair chance of finding significant quantities of milling grade ore within the shoot at, and above that depth.

Introduction

In his memorandum of May 6, 1970, the Chief, Office of Minerals

Exploration, requested the Field Officer, Region III, to review the subject application, Docket No. OME-6815, (Gold and Silver), Neaves Petroleum Developments, Lincoln Mine, Yavapai County, Arizona, conduct a field examination, if warranted, and make recommendations regarding approval of an exploration contract.

The application was reviewed by P. B. Mudgett, Mining Engineer, who examined the property on June 25, 1970, accompanied by James A. Marsh, Chief Executive Officer of the Mining Division of the applicant company.

Location and Accessibility

The Lincoln mine is located about 2 airline miles northeast of Crown King, Arizona. It is in the Pine Grove mining district within the Prescott National Forest on sections 1, 2, 11, 12, T. 10 N., R. 1 W., Yavapai County, Arizona, at an altitude of about 7,000 feet.

The mine is reached from Phoenix, Arizona, over divided Interstate Highway 17 north 58 miles to the Cordes exit, thence 22 miles southwesterly over a gravelled county road to Crown King, Arizona, and thence 2.5 miles northeasterly by 4 x 4 vehicle over a rough, narrow mountain road.

Property

History and Production

Apparently, the only helpful published information about the Lincoln mine is contained in U. S. Geological Survey Bulletin 782,

"Ore Deposits of the Jerome and Bradshaw Mountains Quadrangles, Arizona," by Waldemar Lindgren (1926). Lindgren states that the mine is in an old mining region, and many of the veins were very rich near the surface. Most of the ore was partly oxidized, rich in gold and silver, and worth up to $100.00 per ton. The primary ores, however, seemed to average about $10.00 per ton. Probable district production of ore is estimated at under $3,000,000.00.

The mine was idle during Lindgren's visit in 1922, but he notes the presence of a 15-stamp mill with plates and concentrating tables. He says that the mine was worked in 1902 and from 1905 to 1908, and that 10,000 tons of ore were produced having a net value of $135,000.00. Ore concentrates contained 1 to 4 ounces gold and 10 to 24 ounces silver per ton and 15 percent copper.

The Lincoln vein was developed by two short tunnels. "The upper tunnel is a crosscut for 400 feet, whence the main level runs 1,627 feet southwestward to an old shaft 115 feet deep." "The ore shoot pitches northward and is said to have a horizontal length of 400 feet." All ore from the surface to a depth of 100 feet below the tunnel level is said to have been extracted." The lower tunnel is a drift tunnel on the vein 467 feet long and about 300 feet below the deepest level in the mine. Extension of the tunnel was recommended by Lindgren.

A 1927 report by Alfred B. Colwell, E. M., was submitted by the applicant which indicates that although ore was produced from

the mine as early as 1886, only a small amount was produced prior to 1905. The report shows the main period of production to be from 1905 into 1910 when the gross sum of $189,292.00 was realized from shipments of 1,316 tons of hand-sorted ore, 347 tons of mine run ore, 518 tons of concentrates and more than 2,000 ounces of bullion. From 1911 into 1918, it appears that sporadic, small scale operation of the mine by lessees resulted in little production of ore. However, in 1915 and 1916, a winze was sunk from the tunnel level to a depth of 175 feet in an unsuccessful attempt to develop the ore shoot at greater depth. It was not indicated whether the mine was active after 1918 or not, but it was reported as being in a substantially caved condition on November 15, 1927. Extension of the lower tunnel was also recommended by Colwell, who is identified in U.S.G.S. Bulletin 782 as Lindgren's field assistant during his field examination of the Jerome and Bradshaw Mountains quadrangles in 1922.

From a report in 1932, by Alvin B. Carpenter, Consulting Mining Engineer, also submitted by the applicant, it appears that the mine remained in a caved condition until 1931, when the surface plant and the main tunnel level were rehabilitated by the Calincoln Mines Company, Incorporated. The company also increased the depth of the winze from 175 feet to about 215 feet, and drifted both ways on the vein to encounter ore at points 233 feet apart and at least 60 feet below any previously known occurrence. The ore was described as quartz lenses from 2 to 4 feet wide having a value of $5.00 to $15.00 per ton. Apparently, the

company planned to test the downward extension of this discovery by continuing the lower tunnel, but was prevented from doing so by a lack of sufficient funds. Carpenter also recommended extension of the tunnel, and estimated that it would cut the ore shoot about 175 feet below the bottom of the winze.

As far as can be determined, no further work was accomplished at the Lincoln mine, and it was allowed to deteriorate into its present caved condition.

Ownership

The property consists of 7 patented lode claims and two patented millsites situated within sections 1, 2, 11 and 12, T. 10 N., R. 1 W., Yavapai County, Arizona. It has been leased by the applicant from the owner, Lincoln Mines, Inc., of Huntington Beach, California, for 15 years from September 19, 1969.

The lease agreement lists the claims and millsites only as being recorded in the Yavapai County, Arizona, records as follows:

	Mineral Survey No.	Yavapai County Records Book	Page
Rough Rider	1599	69	535-545
Yellow Jacket	"	"	" "
Quien Sabe	"	"	" "
Norma	"	"	" "
S. P. Carlin	"	"	" "
Alene	"	"	" "
Admiral Millsite	"	"	" "
Valley View Millsite	"	"	" "
Watsonville	2106	77	523

The patent numbers and the metes and bounds descriptions for the above would be included in the county records.

The lien and subordination agreement submitted by the applicant shows that a Quiet Title Action is pending, although in the lease agreement, the lessor warrants its title to the claims.

Development

Entrance to the Lincoln mine is prevented by caving of both the upper and lower tunnels through which most of the development of the Lincoln vein has been accomplished. The completely caved Quien Sabe shaft, on the vein, and its short connecting drift to the surface provided access for the earlier development of the vein above the upper, or main tunnel level prior to 1901 or 1902. And, the 200 foot long original discovery tunnel as well as several prospecting tunnels, shafts and pits have probably been caved since the turn of the century (figures 1 and 2).

Not shown on either of the attached maps is an open, untimbered raise that has been holed through to the surface from near the end of the 467 foot long lower, or S. P. Carlin tunnel.

None of the surface facilities remain at any of the tunnel sites.

Geology

In the Pine Grove mining district, according to Lindgren (1922),, pre-Cambrian Bradshaw granite, Yavapai schist and diorite have been intruded by a granodiorite stock of probable Tertiary age. The granodiorite is cut by a series of rhyolite porphyry and granite porphyry dikes which trend north-northeast across the center of the area.

There are three prominent vein systems of probable Tertiary age that also trend north-northeast and dip about 60° to the west. The veins are mostly quartz-filled with some ankerite and calcite gangue, and seldom exceed 5 feet in width. Northward pitching ore shoots in the veins contain pyrite, chalcopyrite, sphalerite, galena and tetrahedrite with gold and silver. They occur mostly within granodiorite, but are also found in the harder and less favorable Yavapai schist and diorite to the north of the stock. All of the veins are of a similar mesothermal type, and appear to be genetically related to either the granodiorite or the rhyolite porphyry dikes.

As described by Lindgren (1926), the Lincoln vein is the most easterly in the district and lies generally parallel to the other. It is in Yavapai schist near the contact with Bradshaw granite on the east, striking N. 18° E. and dipping 65° to 70° to the west. The wallrock has been altered by sericitization and carbonitization for as much as 5 feet adjacent to the vein. The vein is quartz-filled, with some ankerite gangue, and it ranges from 2 feet to probably 4 feet in width. The mine's only significant ore shoot extended from the surface to about 300 feet in depth with a horizontal or stope length of nearly 400 feet. Below the oxidized zone, the ore consisted of pyrite, chalcopyrite, sphalerite, galena and tetrahedrite with gold and silver, and reportedly averaged from 5 to 6 feet in width. Supergene minerals were uncommon.

The vein was seen by the writer in only three places on the property. Caving of underground workings near the surface has exposed

the vein at the portal of the lower tunnel, at the top of the raise from near the end of the lower tunnel and directly above the Quien Sabe shaft. In each instance, the quartz-filled vein was about 2 feet wide, and apparently barren of sulphide minerals. The wallrock of iron-stained Yavapai schist appeared to be altered from 3 to 5 feet adjacent to the vein.

Ore Reserves

The applicant has submitted an estimate of indicated ore reserves in the mine of 116,000 tons containing 2 ounces gold, 20 ounces silver and 5 percent of copper. At current prices, such ore would have a gross value of nearly $19,000,000.00, and, in view of the availability of fairly dependable production data, this estimate is clearly unfounded.

Although it is probable that some ore reserves do remain in the mine, it seems likely that, except for a few critical support pillars, they would consist chiefly of an unknown quantity of primary ore having marginal or submarginal value at the time the mine was shut down in 1918. In 1922, Lindgren found the mine still inactive, and stated that primary ores in most mines in the Pine Grove mining district did not seem to average better than $10.00 per ton. Apparently the mine continued to be idle until 1931, when marginal ore worth $5.00 to $15.00 per ton was discovered on the Winze level by Calincoln Mines, Incorporated. Because there is no record of the mine having been operated since then, it seems logical to expect that any primary ore exposed at that time

on the lowest level, or elsewhere in the Lincoln mine, would be of similar grade.

The quantitative content of valuable metals in such ore is not known, but from Colwell's description of its character, its current average value can be reasonably assumed to be about $20.00 per ton. However, since Colwell also stated that the map showing a longitudinal section through the vein depicted conditions existing in 1907, and no more recent description is available, there seems to be no plausible way to estimate the present tonnage of ore that could be considered as a reserve.

Exploration

Applicant's Proposal

At an estimated cost of $65, 000.00, the applicant proposes to explore for the downward continuation of the major ore shoot in the Lincoln vein by core drilling from the surface.

Four NX size drill holes, inclined at -75° and 900 feet deep, are designed to determine the horizontal length of the northeasterly plunging shoot at the projected level of the lower, or South Camp tunnel.

On a two-shift operational basis, the construction of about 5,600 feet of access road with the preparation of 4 drillsites would require approximately 9 days, and the drilling of a maximum of 3,600 feet of NX hole would be completed in about 3 months. Road construction could be started within a few days after execution of the contract.

Cost Estimate

Although the applicant specified a total estimated cost of $65,000.00 on MME Form 40, he has listed itemized costs totalling only $62,084.31. This itemized estimate of the total cost of the proposed exploration project, as outlined below, is based upon the high drilling bid by Boyles Brothers Drilling Company, and the only bid for road construction and drillsite preparation obtained by the applicant.

(a) Drilling and Access Roads

Mobilization and Demobilization	$500.00		
40 feet NC or collar pipe @ $11.00 per foot	440.00		
3560 feet NX drilling at $11.00 per foot	$39,160.00		
70 hours cementing (plus cement) at $20.00 per hour	1,900.00		
Water truck rental at $275.00 per month plus $0.20 per mile for 3 months	1,000.00		
		$43,000.00	
Road construction and drillsite preparation HD-21 dozer and operator-140 hours at $40.00 per hour		$5,600.00	
			$48,600.00

(b) Personal Services

Supervision by J. A. Marsh:		
3 months at $1,000.00 per month	$3,000.00	
Hotel and meals	350.00	

(b) Personal Services - Continued

Travel expense	$450.00	
Project Engineer:		
3 months at $800.00 per months	$2,400.00	
Living expense	$1,500.00	
Travel expense	$300.00	
Total personal expenses		$8,000.00

(c) Operating Materials and Supplies

500 Poly sample bags at $0.12 each	$60.00	
350 core boxes at $1.00 each	$350.00	
2 prospecting picks at $8.50 each	$17.00	
1 Brunton compass with case	$63.75	
2 Metallic tapes at $17.50 each	$35.00	
1 Hand Lens	$10.00	
Miscellaneous office supplies, drafting	$300.00	
Total operating materials and supplies		$835.75

(d) Operating Equipment

1 4 x 4 Jeep (Rental)		
3 months at $300.00 per month	$900.00	
Total operating equipment		$900.00

(e) Miscellaneous

Assaying - 700 samples for Au, AG, Cu at $3.50 per sample	$2,450.00	
Freight on samples to Union Assay Co., Salt Lake City	$280.00	

@ 5' intervals — only necessary to sample mineralized core - not entire length of hole.

(e) Miscellaneous - Continued

Accounting - 3 months at $50.00 per month	$150.00		
Payroll Taxes - 3 months at $153.62 per mo.	$460.86		
Workmen's Compensation - 3 months at $135.90 per month	$470.70		
Total miscellaneous		$3,748.56	
Grand Total			$62,084.31

The above cost estimate is within reasonable bounds, and is considered to be acceptable subject to minor revisions. The applicant's formal request for approval of the high bid is supported by the writer because past experience with the work of both bidders has consistently disclosed a desirable superiority of performance by the high bidder. The single bid for access road construction and drillsite preparation submitted by the applicant should be approved due to the absence of other qualified bidders in the few nearby small towns, and, also, because it is a reasonable one in view of the difficult character of the work to be done.

The following revision of the applicant's cost estimate is suggested for contract use.

(a) Drilling

Mobilization and demobilization	$500.00
40 feet NC or collar pipe at $11.00 per foot	440.00
3560 feet NX drilling at $11.00 per foot	$39,160.00
70 hours cementing (plus cement, mud and additives) at $20.00 per hour	$1,900.00

(a) Drilling -- Continued

Water truck rental at $275.00 per month		
plus $0.20 per mile for 3 months	$1,000.00	
Total drilling		$43,000.00

(b) Road and Drillsite Construction

HD-21 dozer and operator - 140 hours		
at $40.00 per hour	$5,600.00	
Total road and drillsite construction		$5,600.00

(c) Personal Services

Supervision by J. A. Marsh		
3 months at $1,000.00 per month	$3,000.00	
Hotel and meals	$350.00	
Travel expense	$450.00	
Project Engineer:		
3 months at $800.00 per month	$2,400.00	
Living expense	$1,500.00	
Travel expense	$300.00	
Total personal expenses		$8,000.00

(d) Operating Materials and Supplies

500 Poly sample bags at $0.12 each	$60.00	
350 core boxes at $1.00 each	$350.00	
Miscellaneous office supplies	$100.00	
Total operating material and supplies		$510.00

(e) Operating Equipment

1 - 4 x 4 Jeep (Rental)			
3 months at $300.00 per month	$900.00		
Total operating equipment expense		$900.00	

(f) Miscellaneous

Assaying - 700 samples for Au, Ag and Cu at $3.50 per sample	$2,400.00		
Freight on samples to Union Assay Co., Salt Lake City	$280.00		
Accounting - 3 months at $50.00 per mo.	$150.00		
Payroll taxes - 3 months at $153.62 per month	$460.86		
Workmen's Compensation - 3 months at $135.90 per month	$407.70		
Total miscellaneous		$3,748.56	
Grand total			$61,758.56

The assaying item of $2,400.00, under (e) Miscellaneous, appears to be an overestimation. However, it should be allowed to stand because some analyses for lead and zinc will probably be required, and a small fund should also be available for contingencies.

Consideration should be given to the fact that although the estimated cost for the drilling is sufficiently accurate, it is likely that the drilling requirements may not be owing to probable error stemming from the method used to determine them. It appears that

the applicant has determined the location, bearing, inclination and depth for the proposed four drill holes by plotting the estimated position of the necessary data on an enlargement of a small scale topographic map, and then scaling the distances required for preparation of a measured cross section showing the intersection of a prototype drillhole with the vein (Figures 3 and 4). Since the probable inaccuracy of this method is obvious, the applicant has informally offered to make an acceptably accurate determination of the drilling requirements and revise the cost estimate, if necessary, providing ultimate approval of the application is assured.

can't assure approval in order to get accurate survey.

Conclusions and Recommendations

The applicant proposes to test the downward extension of a significantly productive ore shoot in the Lincoln vein with four diamond drillholes.

Caving has rendered the Lincoln mine workings inaccessible for many years, and any conclusions regarding the chances of making a significant discovery of ore in the Lincoln vein are necessarily based upon the pertinent information contained in the published literature (Lindgren 1926), and in two old private reports submitted by the applicant. Although much of the material in these reports is of hearsay and speculative character, some important facts bearing on the productive potential of the mine seem to hold up under critical review.

Some primary ore of shipping grade has been produced from the

Lincoln vein, and also in significant quantities from several other mines in the district.

Apparently some primary ore of similar grade remains in place within the deeper workings of the Lincoln mine.

The writer concludes that there is a good geologic probability that the main ore shoot in the vein continues downward to the proposed depth of exploration drilling, and that there is a fair chance of finding significant quantities of gold-silver-copper-lead-zinc ore of milling grade within the shoot at, and above that depth. Approval of the revised drilling program described in this report is, therefore, recommended.

The maximum total cost of the program is tentatively estimated at $61,760.00, with the Government's share being $46,320.00, subject to any revision made necessary by a reappraisal of the drilling requirements.

The applicant indicates in his application that he proposes to furnish his share of the costs (1c) from his own funds which he indicates are available and on hand.

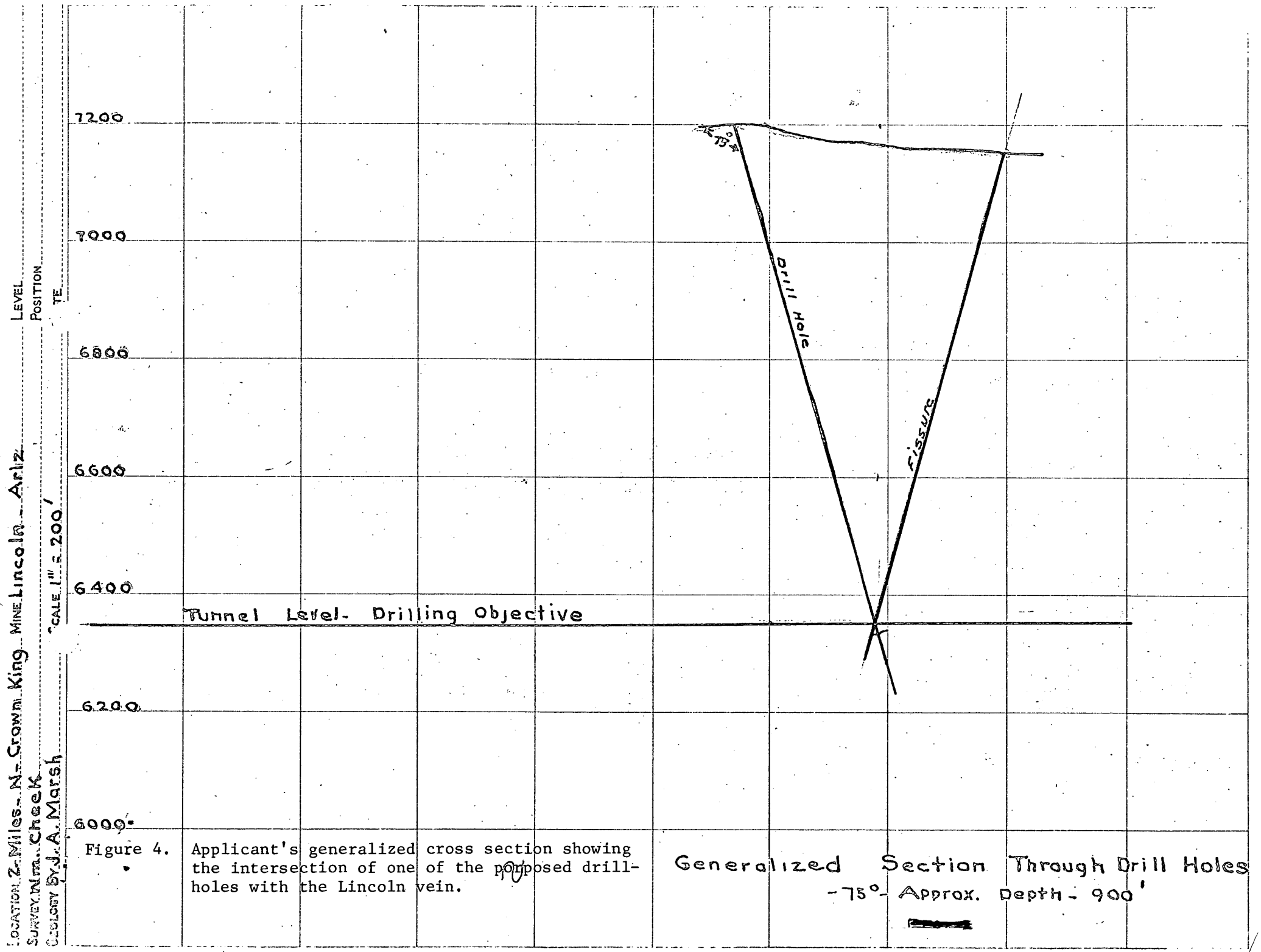

Figure 4. Applicant's generalized cross section showing the intersection of one of the proposed drill-holes with the Lincoln vein.

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

NEAVES PETROLEUM DEVELOPMENTS
239 South Beverly Drive
Beverly Hills, California

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NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

JAMES A. MARSH
CHIEF EXECUTIVE, MINING

JBM 9/8/70

September 2, 1970

O. M. E.
RECEIVED
SEP 24 1970
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Gal | 20 M
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| 20 E

Mr. Phillip Mudgett, Geologist
Office of Minerals Exploration
Field Office, Region III
U. S. Geological Survey
Denver Federal Center, Building 25
Denver, Colorado 80225

Dear Mr. Mudgett:

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine, Yavapai County,
Arizona

Reference is made to captioned title and our August 21, 1970, letter addressed to the attention of Mr. J. William Hasler, requesting an OME loan for a revised exploration program which replaces the original submittal of February 13, 1970.

I now wish to call your attention to drilling bids submitted by Boyles Bros. Drilling Company and E. J. Longyear Company. You will note that the bid submitted by Longyear is approximately $3,000.00 below Boyles Bros. bid. However, after having employed both of the subject companies during the past 30 years or more, I have found Boyles to be more co-operative, more reliable, better drilling procedures and in the long run, over-all costs generally are below Longyear.

In view of the foregoing, it is our preference to use Boyles Bros. for the proposed drilling program and any help you can give us regarding this matter would indeed be very much appreciated.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

James A. Marsh

James A. Marsh
Chief Executive, Mining

JAM: ds

NEAVES PETROLEUM DEVELOPMENTS
Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

OFFICIAL COPY
O. M. E.
RECEIVED
MAY 18 1970
INITIALS

May 15, 1970

United States Department of the Interior
Geological Survey
Washington, D.C. 20242

Attention: Mr. Harold Kirkemo
Chief, Office of
Minerals Exploration

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Gentlemen:

I want to acknowledge with thanks your letter of May 6, in further reference to the above-titled subject matter.

I am pleased that you have referred the application to Mr. Hasler, your Regional Field Officer in Denver, and we are certain we will be able to furnish him with any additional information he may request.

Again, thank you for your attention to our application.

Sincerely yours,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN: ds

MME Form 7
(2/63)

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Date	Surname	Code
5/6/70	Emerick	120
		120
		220
		120M

MAY 6 1970

AIRMAIL

Joseph R. Neaves, Jr., DBA:
Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

This will acknowledge receipt of your letter of April 30, 1970 requesting that we keep your application for exploration assistance in an active status.

Accordingly, the application is now being referred to Mr. J. William Hasler, Field Officer, Region III, U. S. Geological Survey, Office of Minerals Exploration, Room 203, Building 53, Denver Federal Center, Denver, Colorado 80225.

Mr. Hasler will notify you if he requires additional information concerning the application. Further processing of the application will follow the action outlined in our letter to you dated April 21, 1970.

Sincerely yours,

Harold Kirkemo (glo)

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources File
OME Docket
OME Reading File
OME Region III w/copy of incoming ltr. dtd 4/30/70
Mr. Emerick

WLEmerick/bsl 5/6/70

OME Form 7
(2/63)

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Date	Surname	Code
5/6/70	Emerick	120
		120
		200
		120M

MAY 6 1970

AIRMAIL

Memorandum

To: Field Officer, Region III

From: Chief, Office of Minerals Exploration

Subject: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

In accordance with the Applicant's request of April 30, 1970 to keep his application active, we are referring it to you for further study, a field examination if warranted when you are in the vicinity of the property on other field work of the program, and recommendations.

Your discussion with the Applicant's geologist at the time the application was submitted helped to inform them of OME limitations at this time and which of the two proposals in the application would most likely receive consideration under the circumstances. We note that the Applicant seems to favor the bid by Boyles Bros. Drilling Company although the bid by Longyear Company is lower. Some of the cost items warrant scrutiny and could possibly be eliminated or pared down. The amount of time needed and the amount of money allotted to rebuilding the existing road to the drilling area might be one to check if a field examination is made. Drilling time is estimated at three months. Note that the Boyles Bros. bid for site preparation does not agree with the number of holes to be drilled.

Harold Kirkemo (gla)

Harold Kirkemo

cc: Director's Reading File
Mineral Resources File
OME Docket
OME Reading File
Mr. Emerick
130

EWLEmerick/bsl 5/6/70

NEAVES PETROLEUM DEVELOPMENTS

Chamber of Commerce Building
239 South Beverly Drive
BEVERLY HILLS, CALIFORNIA 90212
CRestview 4-5275

RECEIVED MAY 4 1970

April 30, 1970

United States Department of the Interior
Geological Survey
Washington, D. C. 20242

Attention: Harold Kirkemo
Chief, Office of Minerals Exploration

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Gentlemen:

Absence from the City has occasioned the delay in acknowledging with thanks your letter of April 21 re. the above titled subject matter.

Your explanation of the budgetary constraints on the O.M.E. program are well expressed and clearly understood -- but even because of these conditions and with our understanding of them -- we feel that the merit of our prospect which resulted in our application warrants the assistance asked for -- if and when funds may be available for this purpose.

We have furnished pertinent information and supporting data in considerable detail to your regional office in Denver, along with our application, and we feel certain -- without attempting to be presumptious -- that a detailed processing of this would indicate a favorable decision to allot funds for this property would be in the realm of prudent judgment.

Your statement that priority of available funds will be given to approved applications offering the best opportunities for making significant discoveries gives us encouragement in that the investigation and study we have made reveals from past history that this project is not actually being pursued to attempt a significant discovery but more for the purpose of proving for development the large potentials which currently appear to exist.

In view of the above may we respectfully ask for any further consideration that you can give this even if a partial allotment of funds can only be considered at this time, basing any judgment as to merit of the allotment -- on the facts of past history and projection of further success as presented in our application.

Your further consideration of this matter is respectfully solicited.

Yours very truly,

NEAVES PETROLEUM DEVELOPMENTS

JOS. R. NEAVES, JR.

JRN:mb

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
4/21/70	Emerick	120
		120
4/21	Cac	220
		120M

AIRMAIL

APR 21 1970

Joseph R. Neaves, Jr., DBA:
Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Re: OME-6815 (Gold-Silver)
Neaves Petroleum Developments
Lincoln Mine
Yavapai County, Arizona

Dear Mr. Neaves:

This is in response to your application for financial assistance to explore the Lincoln Mine.

Applications received since July 1, 1969, have been given only limited processing because of budgetary constraints on the OME program. With the funds now available we will be able to execute only a few new contracts in the fiscal year ending June 30, 1970. These contracts are being prepared on applications received and approved in previous fiscal years but which could not be executed earlier because of lack of funds. The extent of future contracting will depend on availability of funds.

Owing to curtailment of the program, the processing of applications is being delayed. Therefore, field examinations are being made largely in connection with other field work of the program. The present funding situation precludes entering into a contract large enough to support your first choice proposal, and the outlook for the next fiscal year is as yet unknown. Priority on available funds will be given to approved applications offering the best opportunities for making significant discoveries.

Under these circumstances, should you wish to withdraw your application, please so advise. If you wish to keep your application in active status, we will process it as explained above.

We regret that this action is necessary, but under present funding circumstances we cannot offer better service at this time.

Sincerely yours,

Harold Kirkemo (gfe)

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Mineral Resources File
OME Docket
OME Reading File
OME Region III

WLEmerick/bsl 4/21/70

April 13, 1970

Neaves Petroleum Developments
239 South Beverly Drive
Beverly Hills, California 90212

Subject: OME-6815

Gentlemen:

Your application for exploration assistance, dated February 13, 1970, submitted to our office at Denver, Colorado, has been assigned Docket No. OME-6815.

Please identify all future correspondence relating to your application by this docket number.

Sincerely yours,

W. L. Emerick
Assistant Chief
Office of Minerals Exploration

Copy to Region III

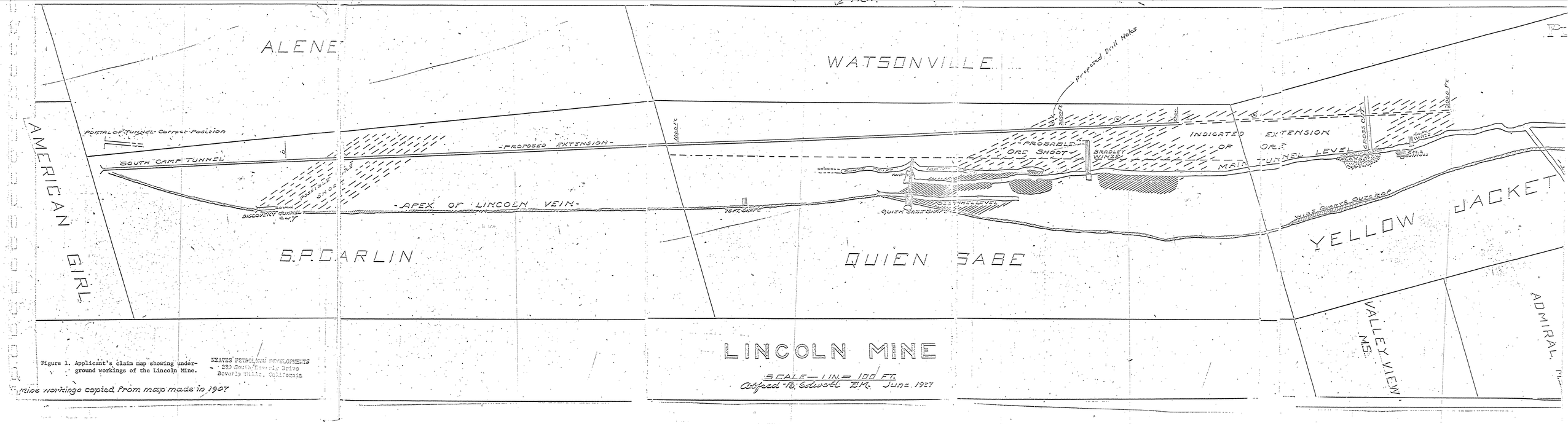
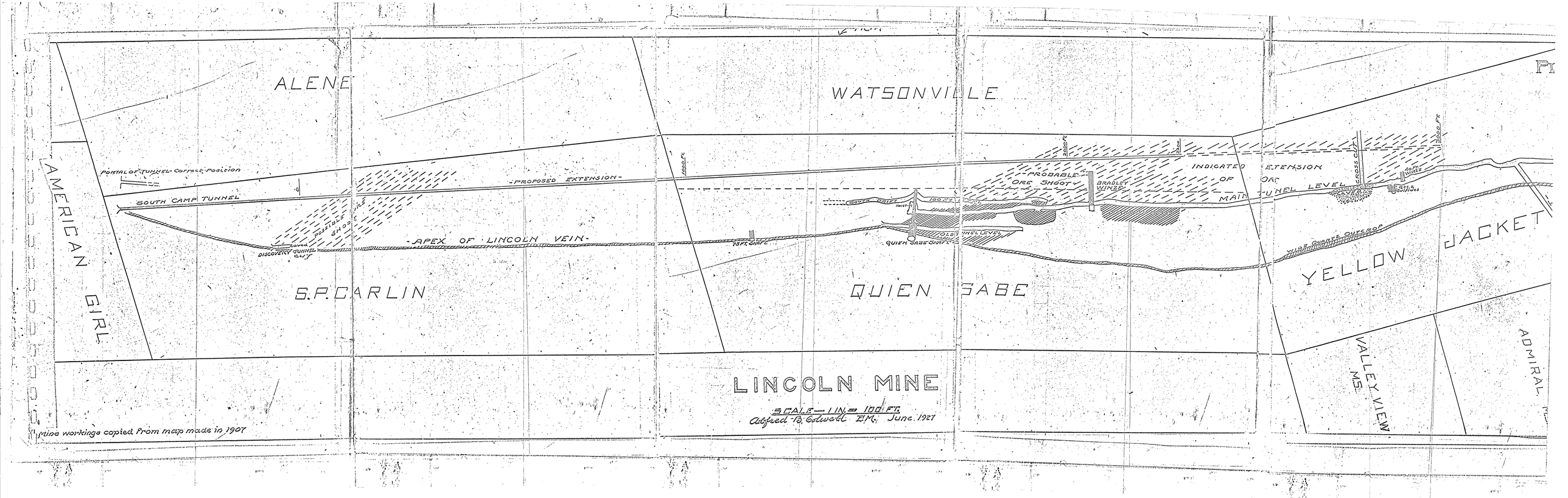
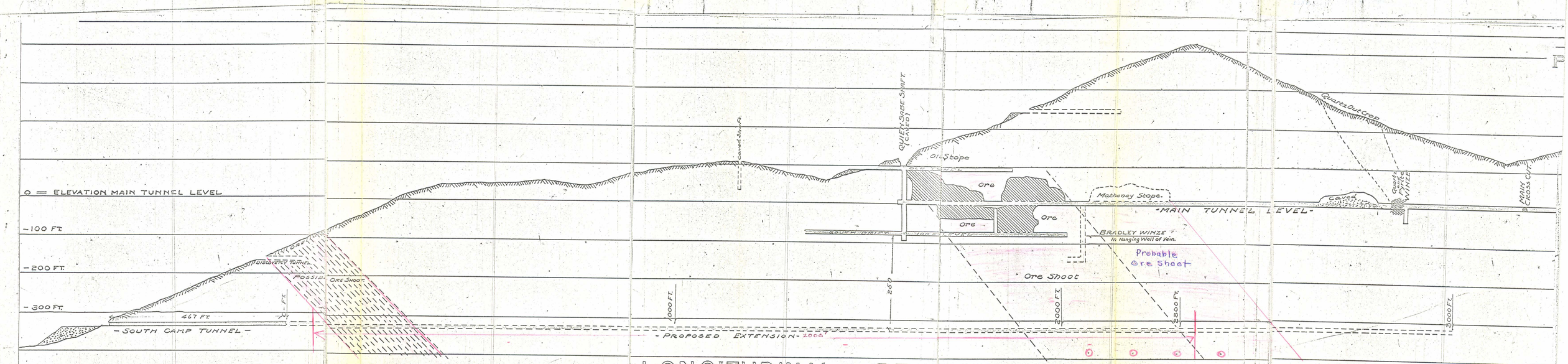


Figure 1. Applicant's claim map showing underground workings of the Lincoln Mine.

NEATES PETROLEUM DEVELOPMENTS
250 South Elsevier Drive
Beverly Hills, California

Mine workings copied from map made in 1907


ALENE
WATSONVILLE
AMERICAN GIRL
S.P. CARLIN
QUIEN SABE
YELLOW JACKET
VALLEY VIEW MS.
ADMIRAL
LINCOLN MINE
SCALE — 1 IN = 100 FT.
Adjusted R. Colwell E.M. June 1927
Mine workings copied from map made in 1907
PORTAL OF TUNNEL - Correct Position
SOUTH CAMP TUNNEL
PROPOSED EXTENSION
POSSIBLE SHOOT
DISCOVERY TUNNEL CUT
APEX OF LINCOLN VEIN
13 FT. SHAFT
QUIEN SABE SHAFT
OLD TUNNEL LEVEL
PROBABLE ORE SHOOT
BRADLEY WINZE
INDICATED EXTENSION OF ORE
MAIN TUNNEL LEVEL
CROSS CUT
WHITE QUARTZ OUTCROP
100 FT.
1000 FT.



LONGITUDINAL SECTION

SCALE — 1 IN = 100 FT.

Alfred B. Colwell E.M.
June 1927

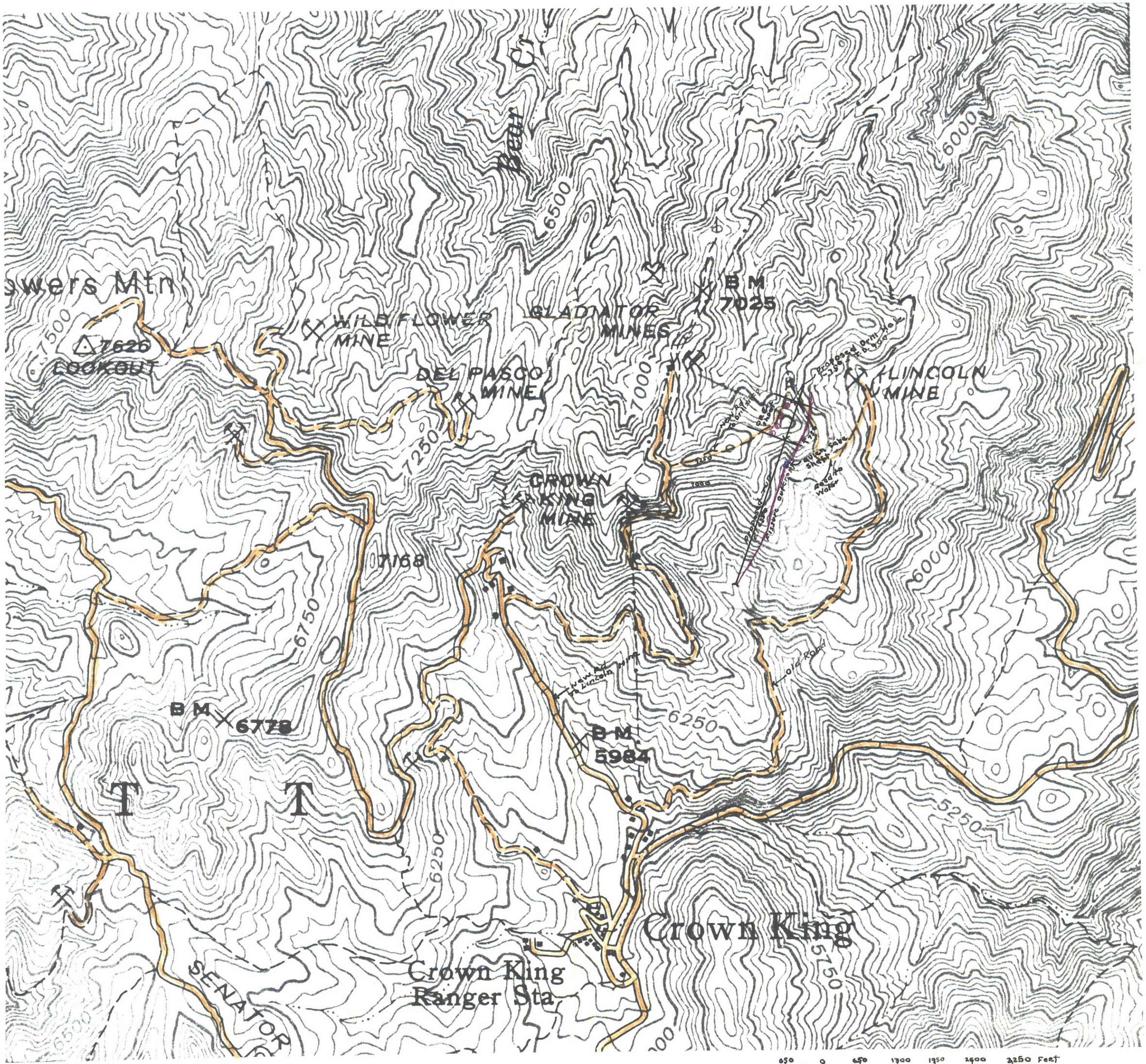
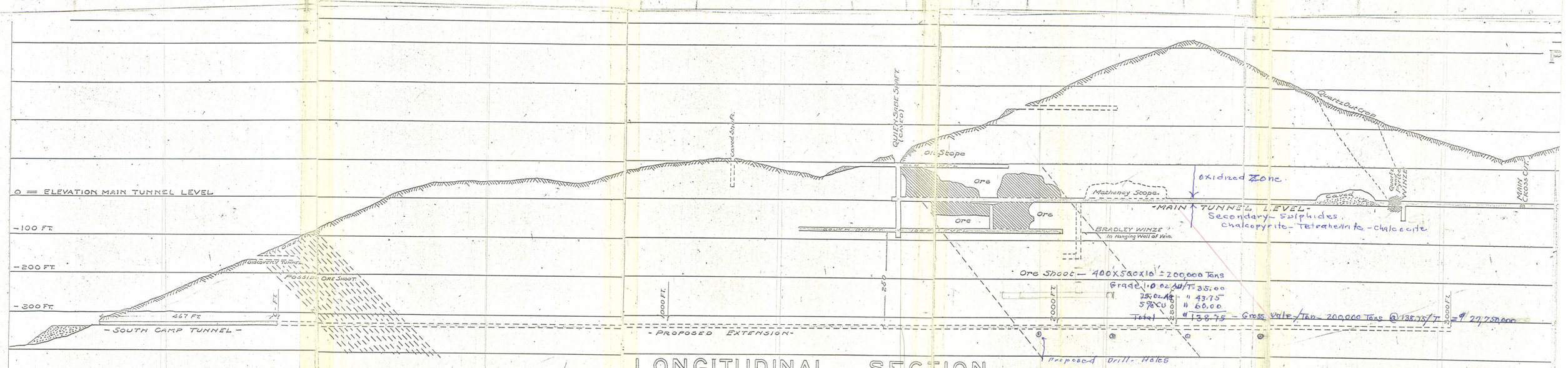


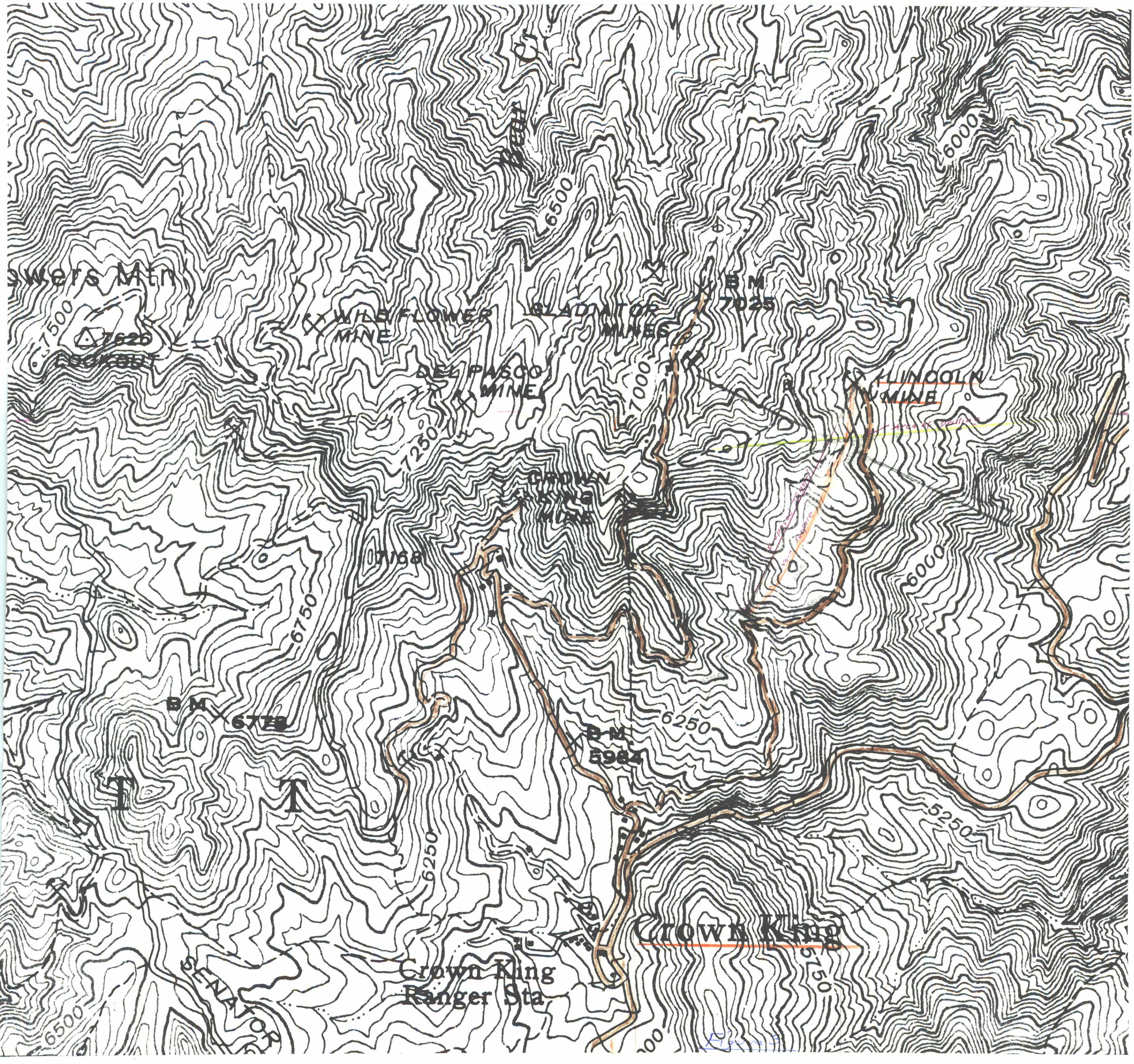
Figure 3

650 0 650 1300 1950 2600 3250 Feet

Fig. 1

20- Scale
Div's - 65'


0 = ELEVATION MAIN TUNNEL LEVEL
-100 FT.
-200 FT.
-300 FT.
Discovery Tunnel
Possible Ore Shoot
467 FT.
- SOUTH CAMP TUNNEL -
1000 FT.
Caved Shaft
250
QUILEY SHAFT (CAVED)
Oil Stope
Ore
Ore
Ore
Mahaney Stope
BRADLEY WINZE
In Hanging Wall of Vein.
- PROPOSED EXTENSION -
2000 FT.
Quartz Out Crop
Caved
Quartz Out Crop
MAIN CROSS CUT
3000 FT.
Oxidized Zone
- MAIN TUNNEL LEVEL -
Secondary - Sulphides.
Chalcopyrite - Tetrahedrite - Chalcocite
Ore Shoot - 400 X 500 X 10' ± 200,000 Tons
Grade 10.02 W/T = 35.00
25.02 Ag " 43.75
5% Cu " 60.00
Total $138.75 - Gross Value / Ton - 200,000 Tons @ 138.75/T = $27,750,000
Proposed Drill - Holes
4 holes 800
LONGITUDINAL SECTION
SCALE - 1 IN = 100 FT.
Alfred B. Colwell E.M.
June 1927


Weis Mtn
7626
LOCKOUT
WILDFLOWER
MINE
GLADIATOR
MINES
B M
7025
DEL PASCO
MINE
LINCOLN
MINE
CROWN
KING
MINE
7168
B M
6778
B M
5984
Crown King
Crown King
Ranger Sta
SENATOR
6500
6750
6250
7500
7250
7000
6000
5250

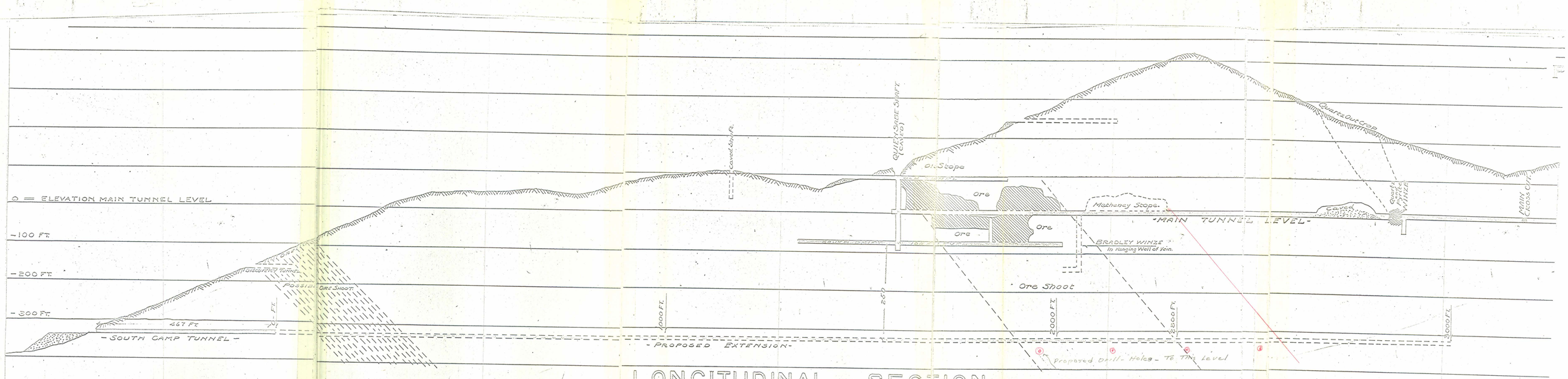


Figure 2. Applicant's longitudinal section of the Lincoln Mine.

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