MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE Contract No. _____ Docket No. 6907

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- [ ] Withdrawn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) 10/68
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. 2 : Miscellaneous 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 : Maps (Use pocket folder or envelope)

Folders No. _____ : Settlement Sheets

Folders No. _____ : Drill Logs

Folders No. _____ : Royalty Material

72195-65

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF MINERALS EXPLORATION
U. S. Geological Survey
Denver Federal Center -- Building 53 -- Room 203
Denver, Colorado 80225

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 26 1968
INITIALS | CODE

March 20, 1968

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Transmitted herewith is a copy of an application on the above-stated subject. One set of three maps and cross sections are being forwarded under separate cover. One copy of the application and a set of three maps and cross sections is being retained in the Region III field office files.

James L. Dealtiri
for J. William Hasler,
Field Officer, Region III
Office of Minerals Exploration

Enclosures

MME Form 40
Jan. 65

Budget Bureau No. 42-R1508
Approval expires Dec. 31, 1968

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OFFICIAL COPY
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RECEIVED
MAR 28 1968
INITIALS | CODE

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.)*

WOLF RIDGE MINERALS CORPORATION
POST OFFICE BOX 1008
GLENWOOD SPRINGS, COLORADO 81601

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER 6707

DATE RECEIVED 3/27/68

REGION 111

DIVISION CODE

BUSINESS ORGANIZATION *(Check one)*

INDIVIDUAL
CORPORATION X
PARTNERSHIP
OTHER *(Specify)*

STATE IN WHICH FIRM IS ORGANIZED Colorado

LIST CORPORATE OFFICERS OR PARTNERS HERE, IF APPLICABLE

NAME	ADDRESS	TITLE
Arthur S. Bowes, Jr.	120 S. LaSalle St., Chicago, Ill.	President
Irvin Nielsen	Box 548, Glenwood Springs, Colo.	V. Pres. and Gen. Mgr.
Edward C. Rosar	548 E. 12th St., Rifle, Colo.	V. Pres.
John W. Savage	Rt. 1, Box 107, Rifle, Colo.	Treasurer
Samuel R. Freeman	1310 Denver Club Bldg., Denver, Colo.	Secretary

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE
Silver - Copper

ESTIMATED COST OF PROJECT
$ 106,000.00

PROPERTY NAME	LOCATION COUNTY	STATE
Merritt Prospect	Garvin	Oklahoma

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. III). 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 Office of Minerals Exploration, Department of the Interior,* ~~Washington 25, D. C., or with the nearest OME Field Office.~~ 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.

3/4/68
DATED

Irvin Nielsen
BY *(Signature)*

Vice President and General Manager
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 true copies of correspondence which show: (1) date of loan request, (2) amount and terms requested, (3) proposed use of loan funds, and (4) the 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 on MME Form 52. If the agreements cannot be obtained, state reasons and provide copies of letters of refusal.

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 and sampling methods used. Support your statement with copies of assay certificates and assay maps if available.

(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) State your reasons for expecting to find ore, and 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.

(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 and address 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 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 cost 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).]

CHECK-LIST OF ITEMS TO ACCOMPANY APPLICATION

For OME Financial Assistance in Minerals Exploration

1. Financial Eligibility:

   (a) Enclosed are letters of application for credit to assist in mineral exploration addressed to First National Bank, Glenwood Springs, Colorado and First National Bank, Grand Junction, Colorado, with letters from each bank stating inability to loan on this project.

   (b) No affiliates.

   (c) Wolf Ridge Minerals Corporation will make a cash contribution for its share of the proposed exploration work.

2. Applicant's Rights in Land:

   (a) Wolf Ridge Minerals has a lease hold interest in the area covered by this application and outlined in red on the attached land plat. True copies of the leases, bearing Book and Page of recording are submitted.

   (b) Shown on lease form.

   (c) Not Applicable.

3. Physical Description:

   (a) The topographic map, Plate 1, indicates locations of strat core holes drilled to present time.

   (b) These were drilled by Wolf Ridge Minerals Corp. at their sole expense and risk.

   (c) Local rumor indicates that these deposits were known and periodically prospected in the early part of the 20th century. There are, however, no records of production available.

   (d) Table I shows ore reserve calculations and projections. Copies of assay sheets showing mineralization are included.

   (e) Geologic features and ore minerals are described in attached "Plan for 1968 Base Metal Exploration and Development Program".

(f) Attached Plates 2 and 3 indicate location of core holes and mineralized areas in two mineralized zones and Plate 2 also shows areas of mineralized surface outcrops of the Ryan Sand zone.

(g) In addition to above listed data, pertinent cross sections are also submitted.

4. Accessibility of Property:

(a) Attached copies of an Oklahoma road map indicate the general area of interest by blue circle. Applicant's leases are located approximately 1/2 to 1-1/2 miles due east of Paoli, Garvin County, Oklahoma. The area is accessible by both black top and gravelled roads, as well as several unimproved farm roads. The OME representative would be met in Pauls Valley, Oklahoma by Zen Merritt, company geologist.

(b) Shipping point will be Paoli, Oklahoma on applicant's lease hold. Supply points are varied for this area, but Oklahoma City would probably serve the greatest diversity of needs.

5. Exploration Work:

(a) Plates 2 and 3 show locations of all core holes, projections of probable mineralized zones, and mineralized areas as indicated by core data or surface outcrop. Proposed exploration will consist of two separate phases of the coring programs. The first will consist of holes drilled normal to the trend of the projected mineralized zone, to establish stratigraphic information and locate additional areas of mineralization.
The second phase will consist of grid drilling around presently known areas of mineralization. This grid drilling will be done on a 200' module where possible, but will be modified to fit terrain and geology.
Ryan Sand core holes will average 30' in depth and proposed stratigraphic and development holes are plotted on Plate 2.
B-2 zone core holes will average 75' in depth, although projected depths are shown where possible on Plate 3. Locations for proposed stratigraphic and development drilling in the B-2 zone are shown on Plate 3.

(b) The subject area is, in general, easily accessible and will require a minimum of access road construction.

(c) If OME contract is executed, work will start immediately, weather allowing, and can be anticipated to progress at an average rate of 40' of core per day. The proposed coring program of 7600 feet should be completed in a six month period.

6. Experience:

The attached personnel sheet lists the Wolf Ridge Minerals Corporation technical staff and indicates their qualifications.

7. Cost Estimate:

The attached Cost Summary sheet shows the proposed expenditures of the projected budget.

Also submitted is a cost break-down showing expenditures related to this project covering the period from June 1, 1967 to Feb. 1, 1968.

WOLF RIDGE MINERALS CORPORATION
Suite 110 Village Inn
Box 1008
Glenwood Springs, Colorado 81601
Phone (303) 945-7457

February 16, 1968

Mr. William Geib
First National Bank
Glenwood Springs, Colo.

Dear Mr. Geib:

Wolf Ridge Minerals Corporation desires a loan of $106,060.00 to complete drilling of its "Merritt" project for copper and silver ores. Is it possible to obtain a loan from your bank for exploration of minerals?

Yours truly,

Irvin Nielsen

IN:rd

FIRST NATIONAL BANK
GLENWOOD SPRINGS, COLORADO 81601

February 23, 1968

K. WM. GEIB
EXECUTIVE VICE PRESIDENT

Wolf Ridge Minerals Corporation
Suite 110 Village Inn
Box 1008
Glenwood Springs, Colorado 81601

ATTENTION: Irvin Nielsen

Dear Mr. Nielsen:

In reply to your letter of February 16, 1968, requesting a loan of $106,060.00 to complete drilling on your Merrit project for copper and silver ores.

At this time, we find that we will have to decline to make the loan as we are not making loans at this particular time for this type of operation.

Sincerely yours,

K. W. Geib

K. W. Geib
Executive Vice President

KWG/wc

WOLF RIDGE MINERALS CORPORATION
Suite 110 Village Inn
Box 1008
Glenwood Springs, Colorado 81601
Phone (303) 945-7457

February 16, 1968

Mr. George McKinley
First National Bank
Grand Junction, Colo. 81501

Dear Mr. McKinley:

Wolf Ridge Minerals Corporation desires a loan of $106,060.00 to complete drilling of its "Merritt" project for copper and silver ores. Is it possible to obtain a loan from your bank for exploration of minerals?

Yours truly,

Irvin Nielsen

IN:rd

FIRST NATIONAL BANK in Grand Junction . . . .

R. L. QUIMBY
Executive Vice President

GRAND JUNCTION, COLORADO
February 19, 1968

Mr. Irvin Nielsen
Wolf Ridge Minerals Corporation
Suite 110, Village Inn
P.O. Box 1008
Glenwood Springs, Colorado 81601

Dear Mr. Nielsen:

This is in reply to your request of February 16, 1968 regarding a loan in the amount of $106,060.00 for exploration for minerals.

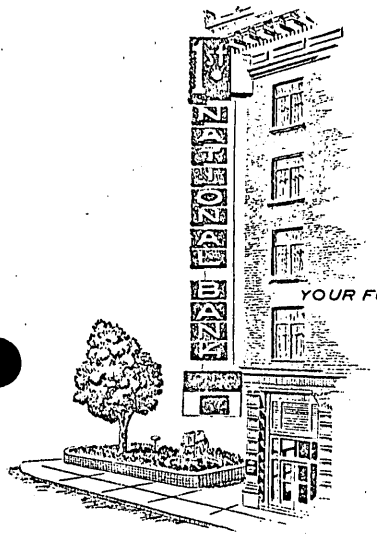
We regret to inform you that we have no funds available for this type loan at the present time.

Very truly yours,

R L Quimby

Executive Vice President

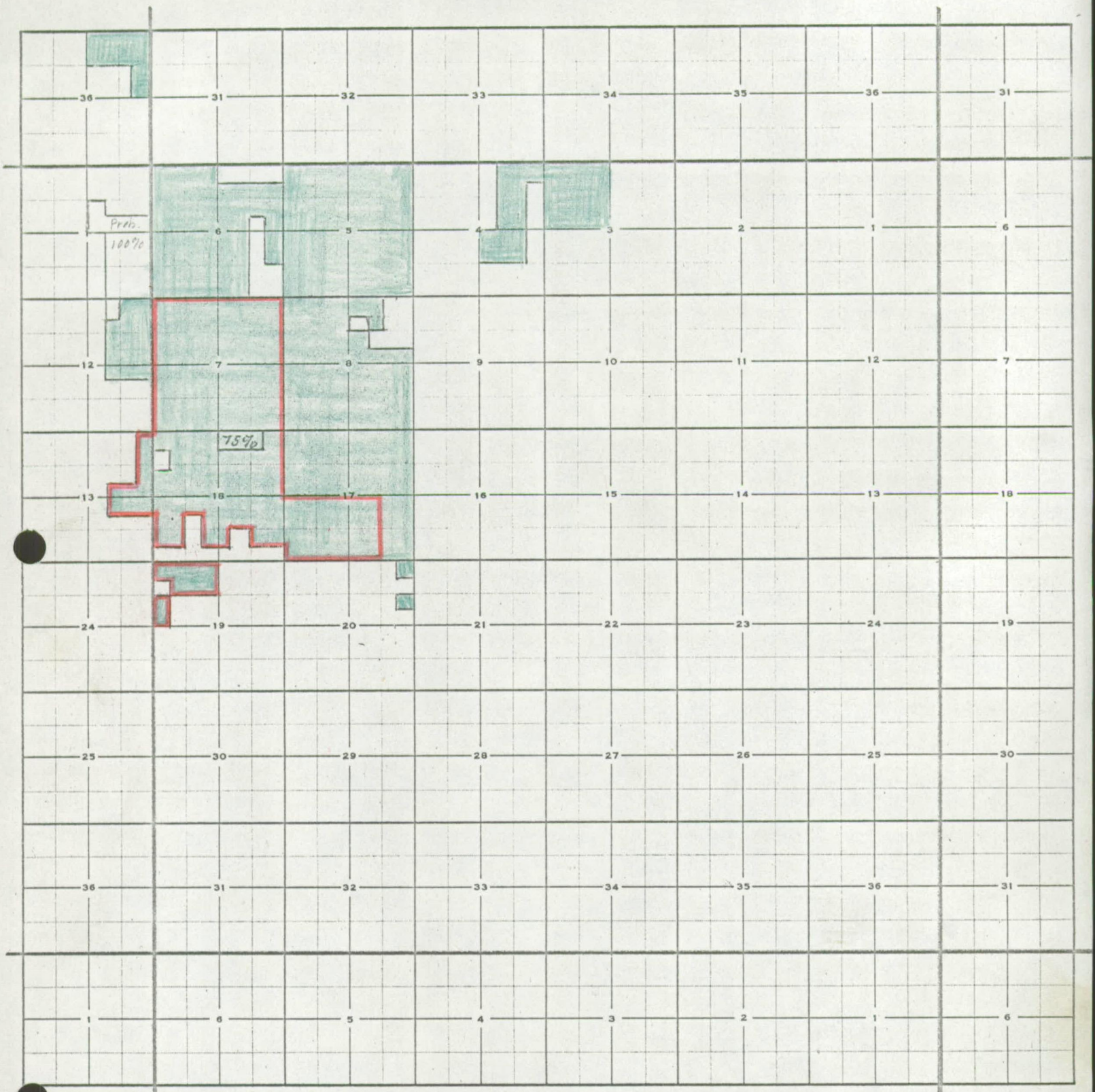
RLQ/sh



RILEY-UTAH
148 SOUTH STATE · SALT LAKE CITY, UTAH
PHONE DA 5-9452 · DA 5-9453 · TWX 5484

Scale: 1 inch = 1 mile
Printed in U.S.A.

Surface Leases



TOWNSHIP 4 N. RANGE 1 E. COUNTY Garvin STATE Oklahoma

REMARKS:

WRMC Surface Leases

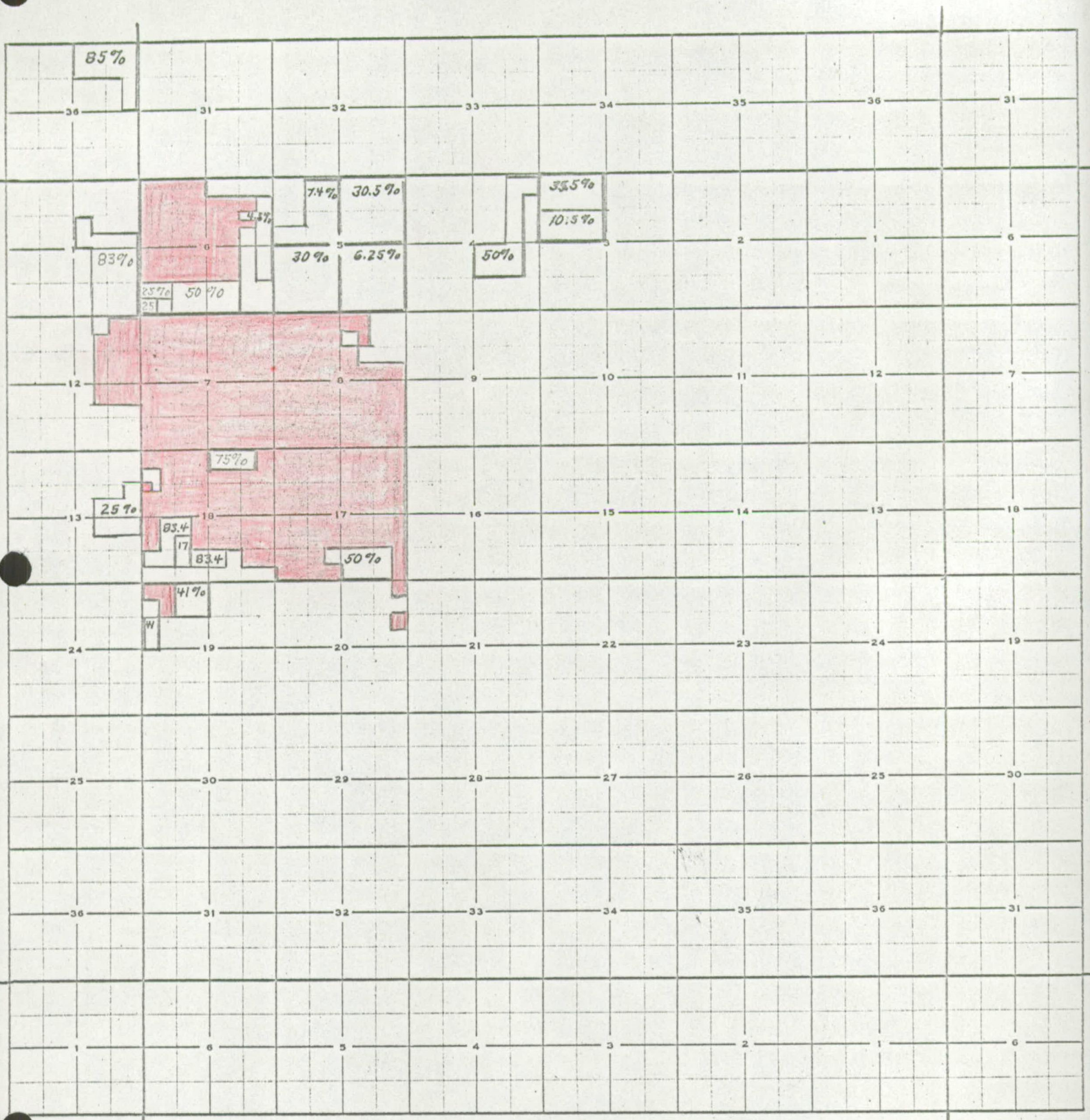
Outline of OME Application Area

COMPANY

Wolf Ridge Minerals Corporation

Scale: 1 inch = 1 mile
Printed in U.S.A.

Mineral Leases



TOWNSHIP 4 N. RANGE 1 E. COUNTY Garvin STATE Oklahoma

REMARKS:

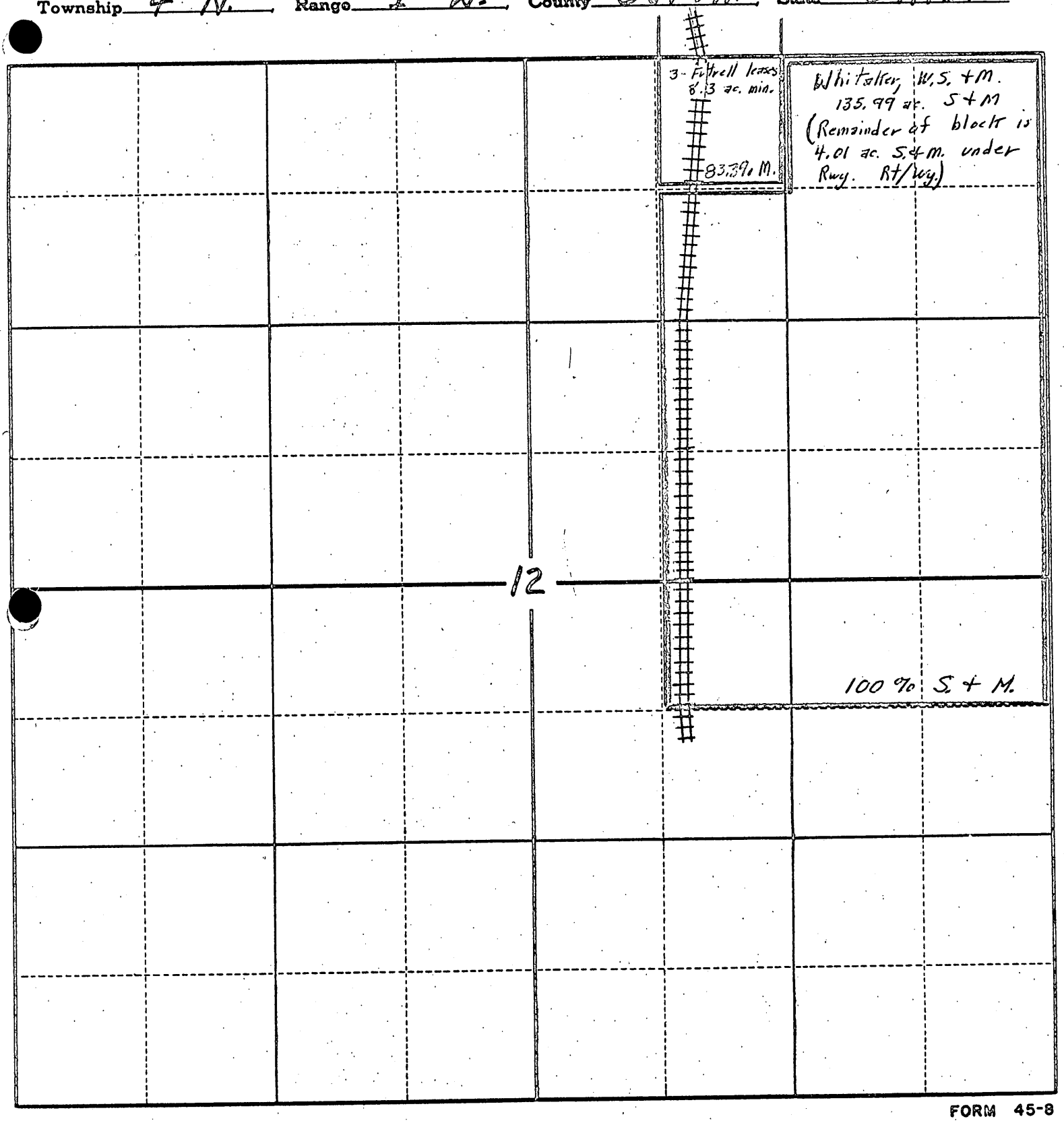
WRMC Mineral Leases

COMPANY

Wolf Ridge Minerals Corporation

Leases — Surface & Mineral

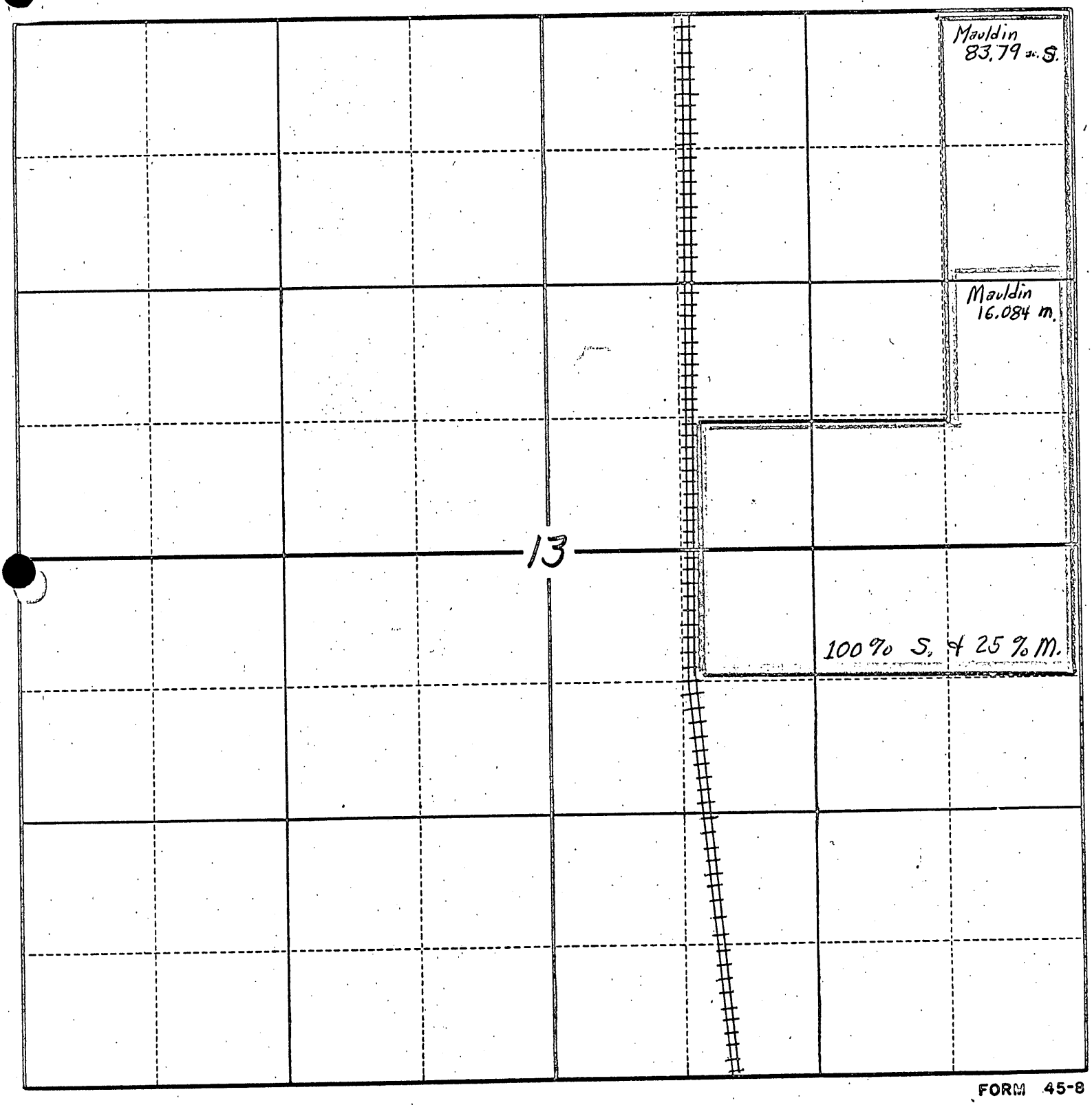
Township 4 N. Range 1 W. County Garvin State Okla.



FORM 45-8

Leases - Surface & Minerals

Township 4 N. Range 1 W. County Garvin State Okla.



FORM 45-8

Township 4 N. Range 1 E. County Garvin State Okla.

Sec. 6 — 624.59 ac.

Lot 4 — 35.62

Lot 3 — 40.55

Sheegog & Sheegog 336.97 S. & 84.2425 M.
Fullington & Mallory 84.2425 M.
Federal Land Bank 168.4850 M.

Lot 2 — 40.94

Lot 1 — 41.34

Futrell, L.J. & M
55 S. & 2.5 M.

Lot 5 — 35.42

Futrell, L.J. & M.
5 ac. S. & M.
100% S. & M.

6

Lot 6 — 35.38

100 % S. & M.

Lot 7 — 35.34
Shattey, W.N. & M.A.
25.34 S. & 6.333 M.

Shattey, W.N. & M.A. 90 S. & 45 M.

FORM 45-8

Township 4 N. Range 2 E. County Garvin State Okla.

(Keener — 100% Surface — 622.00 ac.)

Lot 1 — 35.36 ac.

Bushfield 5.0
Kouri 5.0
10.0 m.

Keener 20.50 m
Gordon 473.68 m
494.18 m

Lot 2 — 35.46 ac.

Jody 9.0 m
Peters 9.0 m
Franks 50.0 m
Raymond 7.0 m.
Pendley 25.0 m
100.0 m

Keener 5.0m
Rabon 5.0m
10.0m

100% m

100% M.

Lot 3 — 35.54 ac.

Lot 4 — 35.64 ac.

Keener 3.92 m
Wortman 1.35 m
Hatcher 0.98 m
Hatcher 0.98 m
Lammen 0.60 m
7.62 m
100% m

FORM 45-8

Keener — 100% Surface (622.000 ac)

Township 4 N. Range 1 E County Garvin State Okla.

Lot 1 — 35.77 ac. Wigley 51.88 ac. S. & 23.94 m. Dodd — 23.94 m.	Wigley 60 ac. S & — m. Gordon — S & 57.91 m. Yoakum — S & 2.10 m	Wigley 43 ac. S &	15 ac m. 15 ac m. 15 ac. M.	Wigley Yoakum Gordon (See NE NW)	
Paoli Cemetery Dodd 3.08 m.	(Incl. E½ NENE) 100% S+M	75%	S & M	100% S+M.	
Lot 2 — 35.94 ac. 100% S+M.	Mauldin 25.0 S & — m Hudson & Crum 12.5 S & 12.5 m. Lamb — 25.0m Foster 12.5 S & 12.5m	Wigley Dulin Eli, Trust	200 ac. S. &	— m. 100 ac m. 100 ac. m.	
	100% S+M				
Lot 3 — 36.12 ac. Hudson & Crum 2/3 S+M Foster 1/3 S+M 100% S+M	Mauldin 68.145 S + 34.0725m Walden 11.36 m Layton 11.36 m.				
Hudson & Crum 5/6 S+M Mauldin 1/6 S+M	J. Beeler 3.33 m.				
Lot 4 — 36.29 ac. 100% S. & 83.49% M.	100% S. & 83.4% M.			100% S + M	

18

FORM 45-8

Township 4 N. Range 1 E. County Garvin State OKla.

Lot 1 - 36.38 ac.
Lynch 18,19 S.& M.
100% S&M.

Lynch 5.0 S & 2.5 m.
Shackelford 5.0 S. & 2.5 M
Fouri - 5.0 M
100% S&M.

Lynch 28,19 S.& 1.575 m
Shackelford 28,19 S.& 1.575 m
Ramsey 7.5 m
Harbison 7.5 m
Burton, Dittee 2.5 m
Phelps 1.25 m
Burton, Pagal 1.25 m
Missing:
Bendurant Trust 28,19 m
Swan, Padberg & Crabbe 5.00 m
(See also W½ Lot 2)
100% S & 41% M.

Lot 2 - 36.38 ac.
(See NE NW)
100% S&41% M.

19

Lot 3 -

Lot 4 -

FORM 45-8

WOLF RIDGE MINERALS CORPORATION

MERRITT PROJECT

VALUATION OF RESERVES TO DATE

Table I

AREA	HOLE NO.	MINING HEIGHT	STRIPPING HEIGHT	RELATIVE RATIO	AG.-OZ.	% CU.	PROVEN ACRES	PROVEN TONS	VALUE IN PLACE PER TON	VALUE IN PLACE TOTAL
(1) P-4	P-4	6.5'	18.0'	2.8:1	0.18	5.09	1	22,650	$ 41.11	$ 931,140
	P-4A	4.5'	12.0'	2.7:1	0.15	1.63	1	15,680	13.36	209,480
	P-4B	4.0') 2.0')	21.0'	3.5:1	0.17 2.75	0.55 -0-	1	20,910	5.10	106,640
	P-4C	3.0'	12.0'	4 :1	5.67	0.22	1	10,450	13.67	142,850
	P-4H*	2.0') 2.0' ?)	12.0'	3 :1	-0- 0.68	0.78 1.86	-0-	-0-	-0-	-0-
							TOTALS	69,690	$ 19.95/T $347,520/A	$1,390,110
(2) B-2	B-2	5.0') 5.0')	74.0'	7.4:1	-0- 7.4	0.58) -0-)	5	174,240	$ 10.09	$1,758,080
							TOTALS	174,240	$ 10.09/T $351,610/A	$1,758,080
(3) OTHERS**	P-3A	3.0') 2.0')	5.0'	1 :1	2.5 2.6	-0-) 1.31)	1	17,420	$ 9.53	$ 166,010
	P-6A	3.5'	6.0'	1.7:1	2.1	-0-	1	12,200	$ 4.41	$ 53,800
	P-11	6.0') 6.0')	14.5'	1.2:1	-0- 2.27	0.45) -0-)	1	41,820	$ 4.19	$ 175,230

*Not included in estimate - poor core recovery

**Areas showing commercial- or near-commercial grade

WOLF RIDGE MINERALS CORPORATION

MERRITT PROJECT

PRELIMINARY EVALUATION

Table II

BASE LINES

(a) The average assay of P-4, B-2, and P-3A amounts to 0.804% Cu; 2.94 oz. Ag or a value of $12.60/ton

(b) For a reserve of 1,500,000 tons, 63 acres are required (data on Table I show 11 acres)

(c) At an annual production of 150,000 tons for 10 years, the estimated return on investment is 12.1%

(d) The total book income over ten years is shown below:

ACCOUNT	TOTALS	PER TON
GROSS REVENUE	$12,962,200	$ 8.641
LESS: OPERATING COST	7,029,240	4.686
GROSS OPERATING PROFIT	$ 5,932,960	$ 3.955
LESS: DEPRECIATION	2,659,370	1.773
AMORTIZATION	95,200	0.063
DEPLETION	1,532,930	1.022
STATE INCOME TAX	65,830	0.044
STATE TAX CREDIT	(15,520)	(0.010)
NET INCOME BEFORE FEDERAL TAX	$ 1,595,150	$ 1.063
LESS: GROSS FEDERAL TAX	797,590	0.532
INVESTMENT CREDIT	(118,570)	(0.079)
TAX CREDIT	(186,330)	(0.124)
NET INCOME	$1,102,460	$ 0.734
BOOK INCOME	$2,635,390	$ 1.756

WOLF RIDGE MINERALS CORPORATION

MERRITT PROJECT

ADDENDUM
TO TABLE I AND TABLE II

The information presented in Tables I and II was based on the original assay work. Very recent check assays have altered the analysis slightly. A summarized tabulation of comparison data is outlined below:

ITEM	ORIGINAL DATA	NEW DATA	DIFFERENCE IN NEW DATA
Reserves to date	261,350 T	257,890 T	(-) 3460 T
Cu - Assay/Ton	0.804 %	0.853 %	(+) 0.049 %
Ag - Assay/Ton	2.94 oz.	2.85 oz.	(-) 0.09 oz.
Value In-Place	$12.60/T	$12.80/T	(+) $0.20/T
Total Value In-Place (Tons x $/Ton)	$3,293,010	$3,300,990	(+) $7980

Because the comparison above reflects a very minor change in the evaluation in Tables I and II, the analysis has not been altered.

RV

CONVERSION CHART

Percent Silver (or Gold)	to	Troy Oz. Per Ton
0.0034		1
0.0069		2
0.0103		3
0.0137		4
0.0171		5
0.0206		6
0.0240		7
0.0274		8
0.0309		9
0.0343		10
0.0377		11
0.0411		12
0.0446		13
0.0480		14
0.0514		15
0.0549		16
0.0583		17
0.0617		18
0.0651		19
0.0686		20

(Revised Chart, Derek Bailey, 1/12/68)

TO: IRVIN NIELSEN
FROM: DEREK BAILEY
DATE: March 1, 1968

Presented below are the results of silver analyses made by fire assay on four core samples.

Lab. No.	Core and Depth	Fire Assay	AA
1745		4.9 oz/ton	4.5 oz/ton
1759		21.2	20.5
1761		11.4	10.8
2852		2.7	3.9

NOTE SILVER VALUES

NEW ASSAY

WELL: Phillips Carlile 3A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	OZ/TON Ag. OCD	OZ/TON MEN	Lithology
[illegible] – 1'	2235	*	0.01	<0.3	<0.3	[illegible]
1' – 2'	36	*	0.02			
2' – 3'	37	*	0.03			
3' – 4'	38	*	0.06	0.4	0.4	
4' – 5'	39	*	0.09	1.2	1.4	[illegible]
5' – 6' Int	2240	*	0.07	1.9	1.9	" "
6' – 5'	41		0.09	4.7	5.2	" "
5' – 6'	42	0.48% Cu	0.04	0.9	0.9	2.31 Cu
6' – 7'	43		0.05	0.6	0.8	[illegible]
7' – 8'	2244	*	1.31	2.7	2.7	[illegible]
8' – 10'	45	"	0.22	<0.3	<0.3	[illegible]
10' – 11'3"	46		0.21			" "
11'3" – 12'9"	47		0.24			[illegible]
12'9" – 15'2"	48		0.13			[illegible]
15'2" – 16'2"	49		0.19			[illegible]
16'2" – 17'2"	2250		0.24			[illegible]
17'2" – 18'	51		0.17			[illegible]
18' – 19'	52		0.13			[illegible]
19' – 20'10"	53		0.10			[illegible]
20'10" – 21'	54		0.06			" "
21' – 21'7"	55		0.40			[illegible]
21'7" – 22'4"	56		0.21			[illegible]
22'4" – 23'6"	57		0.22			[illegible]
23'6" – 24'7"	58		0.42			" "
24' – 25'	59		0.21			" "
25' – 26'	2260 (* IN OVEN)		0.32			" "

$$Cu = \frac{1(0.07) + 1(0.09) + 1(0.04) + 1(0.05) + 2(1.31)}{6}$$

$$= \frac{2.87}{6} = 0.48\% \ Cu \ @ \ 6TT$$

$$AG = \frac{1(1.9) + 1(4.95) + 1(0.9) + 1(0.7) + 2(2.7)}{6}$$

$$= \frac{13.85}{6} = 2.31 oz$$

NEW ASSAY

NOTE NEW SILVER VALUES

WELL: Phillips #4

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag. OZ/TON OLD	Ag. OZ/TON NEW	Lithology
5-6	1650		0.03	<0.3		
6-7	51		0.004			
7-8	52		<0.001			
8-9	53		<0.001			
9-11 (9'-10"-11 corr)	54'		0.002			
11-11' 8"	55'		0.03			
12-13	56		0.03			
13-13' 8" (corr)	57'		0.04			
14-15	58		0.05			
15-16	59		0.05		<0.3	
18-18' 6"	1660		12.02			
18' 6"-19'	61		26.7		0.4	
20-21	62	5.09% Cu	0.49		<0.3	0.11 oz
21-21' 8"	63'		2.62			
22-23	64'		2.26			
23-24	65		2.09			
24-24' 6"	66'		0.70	0.6	0.8	
24'-6"-25'-4"	67'		0.02	<0.3	<0.3	
(Bags) 0-1	~~2483~~ 2521		<0.001			
1-2	2484		<0.001			
2-3	2485					
3-4	2486					
(Bags) 4-5	2487					

CALCULATIONS ON REVERSE SIDE

$$Cu: \frac{0.5(12.02) + 0.5(26.7) + 1(0.49) + 0.67(2.62) + 1(2.26) + 1(2.09) + 0.5(0.7)}{5.17}$$

$$= \frac{6.01 + 13.35 + 0.49 + 1.75 + 2.26 + 2.09 + 0.35}{5.17}$$

$$= \frac{26.30}{5.17} = 5.09\% \ Cu \ @ \ 5.17 \ FT.$$ ASSUME AVERAGE IS THE SAME FOR AN INTERVAL OF 6.5 F

$$AG = \frac{0.5(0.4) + 0.5(0.7)}{5.17} = \frac{0.2 + 0.35}{5.17}$$

$$= 0.11 \ oz/T$$

NOW ADDING

NOTE NEW SILVER VALUES

WELL: Phillips #4A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag. OLD (oz/ton)	Ag. NEW (oz/ton)	Lithology
5'11" – 6'6"	1668		<0.001	<0.3		
6'-1" – 7'6"	1669		0.006			
7'6" – 8'	70		0.022			
8' – 9'	71		0.01			
9' – 10'	72 ×		0.12			
10' – 11'	73		0.14			
11' – 12'	74		0.21			
12 – 13	75	1.41 gms.	0.98			
13 – 14	76		0.80			
14 – 14'9"	77		0.56	<0.3	<0.3	0.25 gms.
14'9" – 15'7"	78 ×	1.09 gms.	5.42	0.6	0.8	
15'7" – 16'6"	79		0.68	0.5	0.6	0.13 gms.
16'6" – 17'3"	80		0.07	2.1	1.8	
17'3" – 18'	81		0.02	0.6	0.7	

CALCULATIONS ON REVERSE SIDE

(A) Cu: $= \frac{1(0.98) + 1(0.80) + 0.75(0.56) + 0.83(5.42) + 0.92(0.68)}{4.5}$

$= \frac{0.98 + 0.80 + 0.42 + 4.50 + 0.63}{4.5}$

$= \frac{7.33}{4.5} = 1.63\%$ @ 4.5FT

(B) Cu: $= \frac{1(0.98) + 1(0.80) + 0.75(0.56) + 0.83(5.42) + 0.92(0.68) + 0.75(0.07)}{5.25}$

$= \frac{7.38}{5.25} = 1.41\%$ @ 5.25FT.

(C) Ag $= \frac{0.83(0.7) + 0.92(0.55)}{4.5} = \frac{0.58 + 0.51}{4.5}$

$= \frac{1.09}{4.5} = 0.24$ oz @ 4.5FT

(D) Ag $= \frac{0.83(0.7) + 0.92(0.55) + 0.75(1.95)}{5.25} = \frac{0.58 + 0.51 + 1.43}{5.25}$

$= \frac{2.52}{5.25} = 0.48$ oz @ 5.25FT

WELL: Phillips Cattle 4A

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze for Cu	Cu.	Ag.		
13'9" — 20'	1682		<0.01	0.002		[illegible]
21' — 22'	1683			<0.001		" "
22' — 23'	1684			0.001		" "
23' — 23'7"	1685			<0.001		" "

ALL PREP'D

WELL: Phillips Core hole P-4B

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
0-1'	3282		0.01	<0.001		[illegible]
1'-2'	83		0.02			"
2-3' (Bagged samples)	84		0.03			[illegible]
3'-4'	85		0.03			"
4'-5'	3287	NOTE	0.03			[illegible]
4-5' wet	3286		0.03			"
+ 5'-6'	3316	START	0.03			[illegible]
6'-7'	17		0.05			
7'-8'	18		0.09			
+ 8'-9'	19		0.07			
9'-10'	3320		0.16			
10'-11'	21		0.05			
11'-12'	22		0.16			
12'-13'	23		0.07			
13'-14'4"	24		0.09			
Lost 14'4"-16' 16'-17'	3325		0.09			
17'-18'	26		0.15			
18'-19'	27		0.18			
19'-20'	28		0.16			
20'-21'	29		0.23			
21'-22'	3330		0.68			
22'-23'	31	0.099 Cu.	1.05	0.0021	2/3 oz	0.0909
23'-24' (4" only)	32		0.30	<0.001		
24'-25'	33		0.22			
25'-26'	34		0.22	0.0037	1.4 oz	
26'-27'	3335		<0.01	0.0050	1.5 oz	
27'-28'	36			<0.001		
28'-29'	37					
29'-30' (6" only)	3338	STOP				

$$Cu = \frac{1(0.68) + 1(1.05) + 1(0.30) + 1(0.22) + 1(0.22)}{5} = 0.49\% @ 51$$

$$AG = \frac{(0.0021)1 + 1(0.0137)}{5(0.0034)} = 0.93\ g\ @\ 5FT.$$

WELL: Phillips Corehole P-4C

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Assay for Cu Ag				
0-1'	3288		<0.01	<0.001		Sandy Pl. Qz. Sy. white & [illegible]
1'-2'	89		0.08			
2'-3'	3290		0.13			
3'-4'	91		0.19			
4'-5'	92		0.16			
4-5' wet	3293		0.17			
5'-6'	3339	START	0.25			gray green sy. [illegible]
6'-7'	40		0.19			
8'-9'	41		0.09			
9'-10'	42		0.11			gray [illegible]
10-11	43		0.11	0.0008		[illegible]
11-12 (10")	44		0.21	<0.001		
12-13	45	0.252 Cu	0.65	0.0221	6 g	5.54 oz
13-13'9" 10"	3346	STOP	0.11	0.024	7 g	
13'9"-15	3750		0.01	0.0115	3½ g	[illegible]
15'-16'	51		<0.01	0.0039	1 g	
16'-17'	52			0.0019	½ g	
17'-18'	53			<0.001		
18'-19'	3754					

$$Cu = \frac{1(0.65) + 0.75(0.11) + 1.25(0.01)}{3}$$

$$\frac{0.65 + 0.08 + 0.01}{3} = 0.25\% \text{ Cu @ 3 FT}$$

$$AG = \frac{1(0.0221) + 0.75(0.024) + 1.25(0.0115)}{3(0.0034)}$$

$$\frac{0.0221 + 0.0180 + 0.0144}{0.0102} =$$

$$= \frac{0.0545}{0.0102} = 5.34 \text{ oz @ 3 FT}$$

NEW ASSAY

WELL: Phillips 6A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Applies to Cu. Ag.				
6'–7' (Bag)	2848	Bagged	<0.01	0.002		
7'–8' (4)	9	Sacked	↓	0.002		
8'–9' (4)	50	↓	↓	0.003		
9'–10' (4)	2851	↓	↓	0.003		
9'–9'6"	52		0.06	0.0134	4g	[illegible]
9'6"–11'	53		0.02	0.001		[illegible]
11'–12'	54		<0.01	0.002		[illegible]
12'–13'	55		↓	0.002		
13'–14'	56		↓	<0.001		
14'–15'	2857		↓	0.001		
6–9 (Bag)	2858		0.05	0.006		
	15	70				

			OLD	NEW	O %	N %	
6'-7'	2848 (COMP)		<0.01	<0.01	0.002	0.0014	
7'-8'	49 (" ")		↓	0.01	0.002	0.0016	
8'-9'	50 (" ")	0.007% Cu.	↓	↓	0.003	0.002	2.15 g
9'-10'	51 (COMP)		↓	↓	0.003	0.003	
9'-9'-6"	52 (USE)		0.06	0.06	0.0134	0.0132	
9'6"-11'-0"	53		0.02	0.03	0.001	0.001	
11'-12'	54		<0.01	<0.01	0.002	0.0017	
12'-13'	55		↓	↓	0.002	0.0028	
13'-14'	56		↓	↓	<0.001	<0.001	
14'-15'	57		↓	↓	0.001	<0.001	
6'-9' (BAG)	2858 (USE)		0.03	0.05	0.006	0.0063	

CALCULATION ON REVERSE SIDE

$$Ag = \frac{0.0063(3) + 0.5(0.0133)}{3.5(0.0034)}$$

$$= 2.15 \text{ oz @ } 3.5 \text{ Ft}$$

$$Cu = \frac{0.04(3) + 0.06(0.5)}{3.5}$$

$$= \frac{0.12 + 0.03}{3.5} = \frac{0.15}{3.5} = 0.04\% \text{ Cu @ } 3.5 \text{ Ft}$$

WELL: Phillips Corehole P-8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Analyze for Cu Ag				
0-1' Bag	2532		<0.01	<0.001		soil
1'-2'	33					
2'-3'	34					
3'-4'	35					
4'-5'	36					
5'-6'	37					
6'-7'	38					
7-8'	39					
8'-9'	40					
9'-10'	2541					
10'-11' (Core)	2091					
12'-13' (Bag)	2092					
13'-14' (Bag)	2093					
14'-14'7"	2094					
16'-17'7"	2095		<0.01	<0.001		
20'-20'3"	2096					
21'6"-22'6"	2097					
22'6"-23'6"	2098					
23'6"-24'	2099		0.04			
24'6"-25'6"	2102		0.11			
25'6"-26'6"	2103		0.09			
26'6"-27'9"	04		<0.01			
27'9"-28'4"	05		<0.01			
28'4"-29'5"	06		0.03			
29'5"-30'	07		0.16			
30'-31'5"	2108		0.05			

DO TO SMALL FOR BAG SAMPLE

START HERE

FINISH HERE

WELL: PHILLIPS P8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
14 - 15 (Bag)	~~2104~~ 2100					
15 - 16 (Bag)	~~2105~~ 2101					
19 - 20 (Bag)	2109		<0.01	<0.001		
20 - 21 (Bag)	2110					
21 - 22 (Bag)	2111					
22 - 23 (Bag)	2112					
24 - 25 Bag	2113		0.04			
25 - 26 (Bag)	2114		0.05			
27 - 28 (Bag)	2115		0.03			
28 - 29 (Bag)	2116		0.03	0.001		
29 - 30 Bag	2117		0.01	<0.001		
~~[illegible] (CAKE)~~						
~~[illegible] (4)~~						
12 - 13 Core	3954		<0.01	<0.001		
13 - 14 Core	3955					
~~[illegible] Core~~						

WELL: Phillips P-8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.			Lithology
		Analyze for Cu. Ag.					
31'5" – 32'6"	3957		<0.01	<0.001			[illegible]
32'6" – 33'6"	57						
33'6" – 34'6"	58						
34'6" – 35'6"	59						
35'6" – 36'6"	60						
36'6" – 37'6"	61						
37'6" – 38'6"	62						
38'6" – 39'6"	3963		0.01				
39'6" – 40'6"	1984		<0.01	<0.001			
40'6" – 41'6"	85		0.01				
41'6" – 42'6"	86		0.01	0.01	<	<	OLD NEW
42'6" – 43'	87		0.03	0.03	0.8	0.7	VALUES
43' – 43'6"	88		0.07	0.03	2.1	1.6	OZ/TON
43'6" – 44'6"	89		0.02	0.02	<	<	
44'6" – 45'	90		0.01				[illegible]
45' – 46'	91		0.02				
46' – 47'	92		0.03				
47' – 48'	93		0.03	0.03	<	<	
48' – 49'	[illegible]		0.26	0.24	2.6	2.3	
49' – 50'	95		0.05	0.04	<	<	
50' – 51'	96		0.06				
51' – 52'	97		0.05				[illegible]
52' – 53'	98		0.05				
53' – 54'	99		0.02	0.02	<	<	
54' – 55' (16)	2000		0.12	0.11	0.3	0.2	
55' – 56'	01		0.10	0.09	<	<	

WELL: Phillips P-9

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze for Cu, Ag	Cu.	Ag.		
56' - 57'	2002		0.03	<0.01		shaley, brn clystn & gy
57' - 58'	03		0.02	↓		" "
58' - 59'	04		0.06			brn & gy altstn
59' - 60'	05		0.07			" "
60' - 61'	06		0.02			rdish-brn clystn
61' - 62'	07		<0.01			dkish-brn clystn
62' - 63'	08		0.01			" "
63' - 64'	09		<0.01			dk gy clystn
64' - 65'	2010					"
65' - 66'	11					rdish-brn clystn
66' - 67'	12					" "
67' - 68'	13					rdish-brn & gy clystn
68' - 69'	14		0.01			
69' - 70'	15		0.01			
70' - 71'	16		<0.01			
71' - 72'	17					
72' - 73'	2018					clystn gy
73' - 74'						

WELL: Phillips Core Hole P-8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Analyze for Cu Ag				~~[illegible]~~
74' – 75'	2019		<0.01	<0.001		~~[illegible]~~
75' – 76'	20		0.01			" "
76' – 76'6"	21		0.02			" "
76'6" – 78'	22		<0.01			22-gray mottled clystal
78' – 79'	23					~~[illegible]~~
79' – 80'	2024					" "
80' – 81'	2542		<0.01	<0.001		
81' – 82'	43					
82' – 83'	44					
83' – 84'	45					
84' – 85'	46					
85' – 86'	47					
86' – 87'	48					
87' – 88'	49					
88' – 89	50					
89' – 89'7"	2551					

Page 1 of

P-11

WELL:

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Analyze for Cu Ag.				
0-1	3033		0.12	<0.001		Soil
1-2	34		0.19			
2-3	35		0.22			
3-4	36		0.39			
4-5 Dry	37		0.33			
4-5 (wet)	30 38	0.45% Cu.	0.53		0.00	
5'-6'10"	30 39		0.35			
6-9'	40		0.51			
9'-9'10"	41		0.07			
10'-11'	42		0.06			
11'-12'	43		0.05			
12'-13'	44		0.05			
(14") 15'-17'	30 45		0.04			
17'7"-19'7"	46		0.02			
19'7"-20'6"	AG. RE-RUN 47		0.26	0.0013		
20'6"-21'7"	2.30z 48		0.16	0.0074	2g+	
21'7"-22'6"	2.8oz 49		0.03	0.0060	1.8g	
22'6"-23'6"	0.30z 30 50		<0.01	0.0014		2.27oz
23'6"-24'6"	2.2oz 51	0.03% Cu		0.0018	2g	
24'6"-25'6"	3.7oz 52			0.0105	3g	
25'6"-26'6"	2.3oz 53			0.0064	2g	
26'6"-28'	1.0oz 54			0.0029	3/4g	
28'-29'	30 55			<0.0005		
29'-30'	56					
30'-31'	57					
31'-32'	58					

Dry core

$$Cu = \frac{1(0.39) + 1(0.53) + 1(0.51) + 1(0.35)}{4} = 0.45\% \text{ Cu @ 4 FT.}$$

ASSUME SAME ASSAY
FOR 5FT INTERVAL

$$AG = \frac{2.3 + 2.8 + 0.3 + 2.2 + 3.7 + 2.3}{6} = 2.2 \text{ oz @ 6FT}$$

NEW ASSAY

B-2

WELL:

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Lab. Analyses Ag.		Lithology
[illegible] – 1' (Bag)	1686		<0.01	<0.001		[illegible]
1' – 2' (Bag)	87					"
2' – 3' (Bag)	88					"
3' – 4' (Bag)	89					[illegible]
4' – 5' (Bag)	1690					" "
5' – 6'	91	(NOTE ONLY 5½" CORE)				" "
6' – 7'	92					[illegible]
7' – 8'	93		0.01			[illegible]
8' – 9'	94					[illegible]
9' – 9½'	95					" "
10 – 11'	96					[illegible]
11' – 12'2"	97	(NOTE LOST-11'7'-12')				" "
12'2" – 13'	98					[illegible]
13 – 14'	99					
14 – 15'	1700					
15 – 16'	01					
16' – 17'	02					
17' – 18'	03					
18' – 19'	04					
19' – 20'	05					
20' – 21'	06		<0.01	<0.001		[illegible]
21' – 22'	07					"
BAG – 79'	4144		0.37	<0.001		

WELL: Bailey B-2

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze for Cu & Ag	Cu.	Ag.		
22' – 23'	1708		<0.01	<0.001		[illegible]
23' – 24'	09					" " "
24' – 25'	1710					[illegible]
25' – 26'	11					" " "
26' – 27'	12					" " "
27' – 28'	13					" " "
28' – 29'	14					" " "
29' – 30½'	15					" " "
31' – 32'	16					" " "
32' – 33'	17					" " "
33' – 34'	18					" " "
34' – 35'	19					[illegible]
35' – 36'	1720					" " "
36' – 37'	21					" " "
37 – 38'	22					" " "
38 – 39'	23					[illegible]
39 – 40'	24					[illegible]
40' – 40'6"	25					" "
40'6" – 41'	26		0.008	<0.001		[illegible]
41' – 42'4"	27		0.009			" " "
42'4" – 44'	28		0.01			[illegible]
44' – 45'	29		0.02			" "
45' – 46'	1730		<0.01			" "
46' – 47'	31					" " "
47' – 48'	32					[illegible]
48' – 49'	33					" "
49' – 50'	34					" "

NEW ASSAY

NOTE NEW Cu-Ag VALUES

WELL: Bailey Corehole # B-2

Footage	Lab. No.	Instructions	Lab. Analyses Cu. %	Ag. %			Lithology
		Analyzed for Cu. Ag.					
50' — 51'	1735		<0.01	<0.001			
51' — 52'	36	COMBINED					" " "
54' — 55'	37	ASSAY					" " "
55' — 56'	38						"
56' — 57'	39						" " "
57' — 58'	1740						"
58' — 59'	41						" " "
59' — 60'	42						" " "
60' — 60' 2"	43		<0.01	<0.001			" " "
SEE NEXT PAGE 62' — 63'	44	RUN + CUT	SEE	NEXT	PAGE		
63' — 64'	45	← Cu 0.03	0.06	0.06	4.3	3.8	OLD/NEW
64' — 65'	46	← "	0.04	<0.01			oz/TON
ASSAY 65' — 66'	47		0.04				
66' — 67'	48		0.05				
68' — 69'	49	1748A	0.14 / 0.05				
69' — 70'	1750		0.16				
70' — 71'	51		0.18				
71' — 72'	52		0.20				
72' — 72' 9"	53	0.03 Cu.	0.52				
74' — 74' 9"	1754	0.03 Cu.	0.70				
74' 9" — 75' 4"	1755	0.03 Cu.	0.64				
76' — 77'	1756		0.50	0.50	<0.3	<0.3	
77' — 77' 3"	1757		0.35	0.34	1.5	1.8	
77' 3" — 80'	1758		0.08	0.07	0.3	<0.3	
[illegible] — 91'	1759		0.14	0.14	21.5	19.8	
[illegible] — 92' 4"	1760	1759A 0.02 Cu.	0.02		<0.001		% Cu
[illegible]			0.02		<0.001		

OVER

OLD/NEW . Ag IN oz/TON

USED ASSAYS

NOTE OLD/NEW VALUES Ag IN oz/TON

WELL: Bailey Corehole B-2

Footage	Lab. No.	Instructions	Lab. Analyses Cu.		Ag.		Lithology
		Analyze for Cu. Ag					
93' - 94'	1761		0.02	0.02	10.9	10.5	[illegible]
94' - 95'	62		0.02	0.01	0.3	0.7	" "
95' - 96'	63		<0.01		<0.001		[illegible]
96' - 87'4"	1764		<0.01		"		
97 - 5							
END							
T.D. 88'							
62 - 62'6"	1744		<0.01	<0.01	<	<	OLD/NEW VALUES
62'6" - 63	1744A		0.06	0.05	0.3	<0.3	Ag IN oz/TON

(A) $Cu = \frac{0.67(0.52) + 0.67(0.70) + 0.67(0.64) + 1(0.50)}{3.01}$

$\frac{0.34 + 0.47 + 0.43 + 0.50}{3.01} = \frac{1.74}{3.01} = 0.58\%$ Cu ASSUME SAME ASSAY FOR 5 FT. INTERVAL

(B) $Cu = \frac{0.67(0.52) + 0.67(0.70) + 0.67(0.64) + 1(0.50) + 1.25(0.35)}{4.26}$

$= \frac{2.18}{4.26} = 0.51\%$ Cu ASSUME SAME ASSAY FOR 7.25 FT. INTERVAL

$Ag = \frac{1.65(1.25)}{7.25} = 0.28$ oz FOR 7.25 FT.

(C) $Ag = \frac{20.65(1) + 1(10.7)}{4} = 7.83$ oz @ 4 FT

$Cu = \frac{1(0.14) + 1(0.02) + 1(0.22) + 1(0.02)}{4} = 0.10\%$ Cu @ 4 FT

NEW VALUES
OLD/NEW
Ag IN OZ/TON

WELL: B-11

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
	Analyzed for Cu, Ag		Cu.	Ag.		
0-1	2975		<0.01	<0.0005		[illegible]
1-2	76					"
2-3 Bagged 22 [illegible]	77					[illegible]
3-4	78					"
4-5 WET	2979		0.02			[illegible]
DRY	2980		0.01			[illegible]
5-6'	81		0.20			[illegible]
6-7'	82		0.11			
7-8'	83		0.13			
8-9'	84		0.09			
9-10'	2985		0.08			[illegible] Al_2O_3
10'-11'	86		0.08			
11'-12'	87		0.14			[illegible]
12'-13'	88		0.06			
13-14	89		0.04			[illegible]
14-15	2990		0.05			[illegible]
15-16	91		0.06			
16-17	92		0.07			[illegible] Al_2O_3
17-18	93		0.07			
18-19	94		0.17			
19-20	2995		0.10	<0.0005		
20-21	96		0.15			
21-22	97		0.13			
22-23	98		0.10			
23-24	99		0.30	0.30	<	<
24-25	3000		0.16	0.15	1.3	<
25-26'3"	3001		0.09	0.09	<	0.9

SAMPLES PROB REVERSED ORIG

(2)

NEW VALUES

OLD/NEW Ag IN OZ/TON

WELL: B-11

	Lab. No.	Instructions	Lab. Analyses				Lithology
		Analyze for Cu, Ag	Cu.		Ag.		
~~25'-26'3"~~	~~3071~~						~~[illegible]~~
26'3"-27'	306.9	START	0.20	0.20	1.4	1.5	[illegible]
27'-28'	70		0.05	0.03	0.7	0.8	
28'-29'	71		0.01	<	<	<	
29'-30'	72		0.04				[illegible]
30'-31'	73		0.02				[illegible]
31'-32'	74		0.05				[illegible]
32'-33'11"	3075	END	0.07				
~~33'-33'11"~~	~~3076~~						

(3)

WELL: B-11

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
33'[illegible] - 34'	3008		<0.01	<0.01		[illegible]
34' - 35'	03					
X 35' - 36'	04					
36' - 37'	3005					
37' - 38'	06					
38' - 39'	07					[illegible]
39' - 40'	08					
40' - 41'	09					[illegible]
41' - 42'	3010		0.01			
42' - 43'	11		0.07			
43' - 44'	12		0.05			
44' - 45'	13		0.07			[illegible]
45' - 46'	14		0.05			[illegible]
46' - 47'	3015		0.03			
47' - 48'	16		0.07			
48' - 49'	17		0.06			[illegible]
49' - 50'	18		0.05			
50' - 51'	19		0.06			
51' - 52'3"	3020		0.29			[illegible]
53' - 54'	21		0.02			[illegible]
54' - 55'	22		<0.01			
[illegible]	23		0.02			
[illegible]	24		0.11			
57' - 58'	3025		<0.01			
58' - 59'	26		0.01			
59' - 60'	3027		<0.01			

(4)

B-11

WELL:

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
			Cu.	Ag.		
60' - 61'	3028		<0.01	<0.0005		Rhyolite
61' - 62'	29					
62' - 63'	3030					
63' - 64'	31					
64' - 65'	3032	stop				
65' - 66'						
66' - 67'						
67' - 68'						
68' - 68'6"						

WOLF RIDGE MINERALS CORPORATION

Plan for 1968 Base Metal Exploration and Development Program

Wolf Ridge Minerals Corporation has completed geologic reconnaissance on several hundred square miles of area where several copper and silver mining prospects have been identified. The prospects contain geologically unique copper and silver concentrations and are recognized, mapped, explored, and tested by techniques and know-how developed by the Wolf Ridge exploration staff. This know-how was developed during the past several months. Wolf Ridge's total expenditure for this overall project is about $200,000.00.

Wolf Ridge has completed an initial exploratory drilling program on its 3,500 acre "Merritt" copper and silver prospect. The acquisition and development of the "Merritt" prospect was conducted as a test of the exploration technique.

Table I is a review of the data derived from the discovery holes drilled in the "Merritt" prospect. The table shows that in drilling 40 holes, Wolf Ridge discovered "commercial" grade ore in six and "near commercial" grade ore in two. Not shown on the chart are four other holes which had significant mineralized zones. These were not borderline "economic" cores but do show areas where additional drilling in the vicinity may show "ore" grade material, and they represent target areas where additional drilling is needed to prove adequate reserves for a commercial mine. Proven reserves are calculated to be 261,350 tons

having a gross value of $3,224,200.00.

Table II shows that 63 acres of reserves of the value found in the "Merritt" discovery holes will support a 150,000 T/year plant, for 10 years and earn an after tax 12% discounted rate of return on investment. If either reserves or grade are increased above these values, then the profit can be correspondingly increased. Wolf Ridge now has a proven reserve of 11 acres. See Table II for a breakdown of the projected income from the above sized plant. (Refer to Addendum)

Wolf Ridge now plans to drill 180 additional shallow holes in the "Merritt" prospect to prove necessary reserves prior to planning a mine and mill. The cost of this development project will be $106,000.00. Judging from past experience, and recognizing that the selection of drill sites can be made more intelligently as the empirical data are derived from the previously drilled holes, this drilling program should be adequate to prove reserves sufficient for a mine and mill. The program will, however, only test the reserves located in about one half of the acreage controlled by Wolf Ridge.

The mineralized zones in the "Merritt" prospect occur in sandstones and siltstones which are interpreted to be deltaic sediments. The ore seems to occur on the downstream edges of the delta cusps, and occupies a mineralized belt of a few hundred feet in width and several thousand feet in length. Two zones of deltaic sediments, separated by 20 feet of red shale, have been discovered. Each has a similar mineralized belt. See Plates 2 and 3.

The first zone is the Ryan sand. It is or may be mineralized in the area colored blue on the map. (Plate 2). The second is the B-2 sand zone which is isopached on Plate 3. The projected coring program will be to first drill stratigraphic cross section holes at the indicated intervals along the belt and follow with grid drilling at points of discovery of significant mineralization. The grid drilling will generally be on a 200 foot center module but will be modified to suit conditions of terrain or geology.

Forty cores are projected for the Ryan sand cross-sections. These are to be followed by an estimated 85 cores projected for grid drilling on the Ryan sand. Total footage is projected at 3,600 feet.

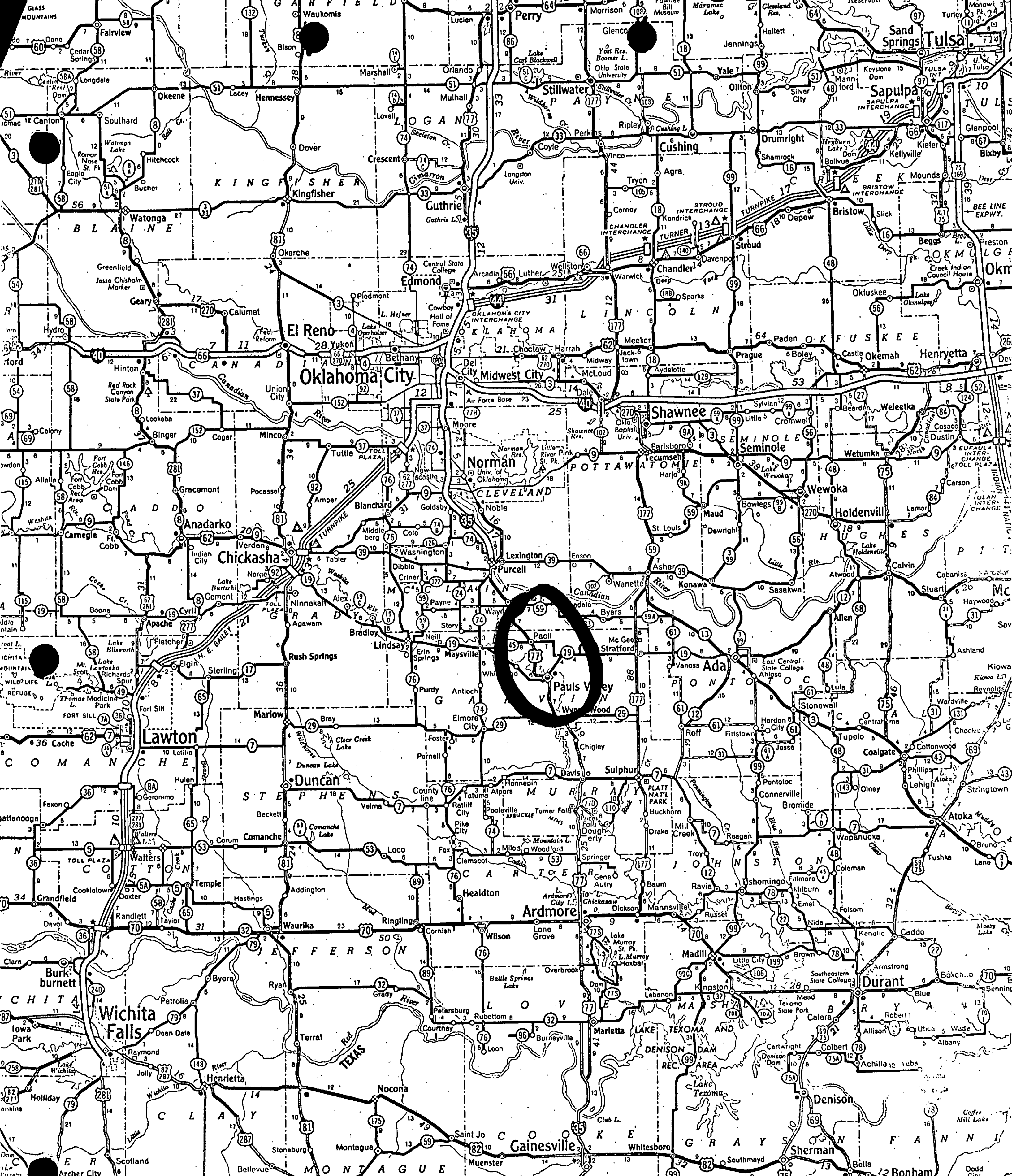
Twenty-five cores are projected for the B-2 sand cross-sections. These are to be followed by an estimated 30 cores projected for grid drilling on the B-2 sand. Total footage is projected at 3,700 feet.

Some of the B-2 sand tests will be at identical locations as some of the Ryan sand cores.

Of the footage drilled, copper and silver assays are contemplated for 3,750 samples. Charges per determination are $2.00, making a total of $15,000.00 for assaying.

The purpose of the coring and assaying project will be to delineate, if possible, a sufficient number of tons of ore to support a plant of the approximate size projected in Table II.

Item 4



<u>Location Map</u>

Paoli Area Circled in Blue

Wolf Ridge Minerals Corporation

Merritt Project

NOTE SILVER VALUES

NEW ASSAY

WELL: Phillips Carlile 3A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	oz/TON Ag. OLD	oz/TON NEW	Lithology
		All — Cu Ag				
Surface – 1'	2235	*	0.01	<0.3	<0.3	
1' – 2'	36	*	0.02			
2' – 3'	37	*	0.03			
3' – 4'	38	Copper *	0.06	0.4	0.4	
4' – 5' (Top)	39	*	0.09	1.2	1.4	
4' – 5' (Bot)	2240	*	0.07	1.9	1.9	" "
5' – 6'	41		0.09	4.7	5.2	" "
6' – 7'	42	0.48% Cu.	0.04	0.9	0.9	2.31 oz
7' – 8'	43		0.05	0.6	0.8	
8' – 10'	2244	*	1.31	2.7	2.7	
10' – 11'3"	45	"	0.22	<0.3	<0.3	
11'3" – 13'9"	46		0.21			" "
13'9" – 15'2"	47		0.24			
15'2" – 16'2"	48		0.13			
16'2" – 17'2"	49		0.19			
17'2" – 18'	2250		0.24			
18' – 19'	51		0.17			
19' – 20'10"	52		0.13			
20'10" – 21'	53		0.10			
21' – 21'7"	54		0.06			" "
21'7" – 22'4"	55		0.40			
22' – 23'6"	56		0.21			
23'6" – 24'7"	57		0.22			
24' – 25'	58		0.42			" "
25' – 27'	59		0.21			" "
27' – 30'	2260 (* IN OVEN)		0.32			" "

$$Cu = \frac{1(0.07) + 1(0.09) + 1(0.04) + 1(0.05) + 2(1.31)}{6}$$

$$= \frac{2.87}{6} = 0.48\% \text{ Cu @ 6FT}$$

$$AG = \frac{1(1.9) + 1(4.95) + 1(0.9) + 1(0.7) + 2(2.7)}{6}$$

$$= \frac{13.85}{6} = 2.31 \text{oz}$$

NEW ASSAY

NOTE NEW SILVER VALUES

WELL: Phillips #4

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag. OLD (oz/ton)	Ag. NEW (oz/ton)	Lithology
5-6	1650		0.03	<0.3		
6-7	51		0.004			
7-8	52		<0.001			
8-9	53		<0.001			
9-11 (9'-10"-11' Lost)	54'		0.002			
11-11'8"	55'		0.03			
12-13	56		0.03			
13-13'8" (13'-14' Lost)	57'		0.04			
14-15	58		0.05			
15-16	59		0.05		<0.3	
18-18'6"	1660		12.02			
18'6"-19'	61		26.7		0.4	
20-21	62	5.07% Cu	0.49		<0.3	0.11oz
21-21'8"	63'		2.62			
22-23	64'		2.26			
23-24	65		2.09			
24-24'6"	66'		0.70	0.6	0.8	
24'6"-25'4"	67'		0.02	<0.3	<0.3	
(Bags) 0-1	~~2484~~ 2483		<0.01			
1-2	2484		<0.01			
2-3	2485					
3-4	2486					
(Bags) 4-5	2487					

CALCULATIONS ON REVERSE SIDE

$$Cu: \frac{0.5(12.02) + 0.5(26.7) + 1(0.49) + 0.67(2.62) + 1(2.26) + 1(2.09) + 0.5(0.7)}{5.17}$$

$$= \frac{6.01 + 13.35 + 0.49 + 1.75 + 2.26 + 2.09 + 0.35}{5.17}$$

$$= \frac{26.30}{5.17} = 5.09\% \ Cu \ @ \ 5.17 \ FT.$$ ASSUME AVERAGE IS THE SAME FOR AN INTERVAL OF 6.5 FT

$$AG = \frac{0.5(0.4) + 0.5(0.7)}{5.17} = \frac{0.2 + 0.35}{5.17}$$

$$= 0.11 \ oz/T$$

NEW ASSAYS

NOTE NEW SILVER VALUES

WELL: Phillips #4A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag. OZ/TON OLD	Ag. OZ/TON NEW	Lithology
5'6" – 6'6"	1668 1		<0.001	<0.3		
6'6" – 7'6"	1669 2		0.006			
7'6" – 8'	70 3		0.022			
8' – 9'	71 4		0.01			
9' – 10'	72 5		0.12			
10' – 11'	73 6		0.14			
11' – 12'	74 7		0.21			
12 – 13	75 8	1.41% Cu.	0.98			
13 – 14	76 9	1.63% Cu.	0.80			
14 – 14'9"	77 10		0.56	<0.3	<0.3	0.05
14'9" – 15'7"	78 11		5.42	0.6	0.8	
15'7" – 16'6"	79 12		0.68	0.5	0.6	
16'6" – 17'3"	80 13		0.07	2.1	1.8	0.03
17'3" – 18'	81 14		0.02	0.6	0.7	

CALCULATIONS ON REVERSE SIDE

(A) Cu: $= \frac{1(0.98) + 1(0.80) + 0.75(0.56) + 0.83(5.42) + 0.92(0.68)}{4.5}$

$= \frac{0.98 + 0.80 + 0.42 + 4.50 + 0.63}{4.5}$

$= \frac{7.33}{4.5} = 1.63\%$ @ 4.5FT

(B) Cu: $= \frac{1(0.98) + 1(0.80) + 0.75(0.56) + 0.83(5.42) + 0.92(0.68) + 0.75(0.07)}{5.25}$

$= \frac{7.38}{5.25} = 1.41\%$ @ 5.25FT

(C) Ag $= \frac{0.83(0.7) + 0.92(0.55)}{4.5} = \frac{0.58 + 0.51}{4.5}$

$= \frac{1.09}{4.5} = 0.24$ oz @ 4.5FT

(D) Ag $= \frac{0.83(0.7) + 0.92(0.55) + 0.75(1.95)}{5.25} = \frac{0.58 + 0.51 + 1.43}{5.25}$

$= \frac{2.52}{5.25} = 0.48$ oz @ 5.25FT

WELL: Phillips Cashole 4A

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze 2x Cu.	Cu.	Ag.		
18'9" – 20'	1682		<0.01	0.002		[illegible]
21' – 22'	1683			<0.001		"
22' – 23'	1684			0.001		"
23' – 23'7"	1685			<0.001		"

ALL PREP'D

WELL: Phillips Cored P-4B

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
0-1'	3282		0.01	<0.001		Gravel
1'-2'	83		0.02			"
2-3' (Bagged samples)	84		0.03			red brown soft
3'-4'	85		0.03			"
4'-5'	3287	NOTE	0.03			gray green soft
4-5' wet	3286		0.03			"
+ 5'-6'	3316	START	0.03			gray
6'-7'	17		0.05			
7'-8'	18		0.09			
+ 8'-9'	19		0.07			
9'-10'	3320		0.16			
10'-11'	21		0.05			
11'-12'	22		0.16			
12'-13'	23		0.07			
13'-14'4"	24		0.09			
Lost 14'4"-16' 16'-17'	3325		0.09			
17'-18'	26		0.15			
18'-19'	27		0.18			
19'-20'	28		0.16			
20'-21'	29		0.23			
21'-22'	3330		0.68			
22'-23'	31	0.49% Cu.	1.05	0.0021	2/3 oz	0.93 oz
23'-24' (4" only)	32		0.30	<0.001		
24'-25'	33		0.22			
25'-26'	34		0.22	0.0037	1 oz	
26'-27'	3335		<0.01	0.0050	1.5 oz	
27'-28'	36			<0.001		
28'-29'	37					
29'-30' (6" only)	3338	STOP				

$$Cu = \frac{1(0.68) + 1(1.05) + 1(0.30) + 1(0.22) + 1(0.22)}{5} = 0.49\% @ 5FT$$

$$AG = \frac{(0.0021)1 + 1(0.0137)}{5(0.0034)} = 0.93 \text{ oz} @ 5FT.$$

WELL: Phillips Corehole P-4C

Footage		Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
			Analyze for Cu Ag				
0-1'	Bagged Samples	3288		<0.01	<0.001		Heavy Fe, Mn Oxide, gy, white, unconsol.
1'-2'		89		0.08			
2'-3'		3290		0.13			
3'-4'		91		0.19			
4'-5'		92		0.16			
4-5' wet		3293		0.17			
5'-6'		3339	START	0.25			gy gm sandy mud
6'-7'		40		0.19			
9'-9'		41		0.09			
9'-10'		42		0.11			gy gm sandy mud
10-11		43		0.11	0.0008		
11-12	(10")	44		0.21	<0.001		
12-13		45	0.25% Cu	0.65	0.0221	6 oz	5.34 oz
13-13'9" 10"	—	3346	STOP	0.11 ~~0.09~~	0.0244	7 oz	
13'9"-15		3750		0.01	0.0115	3½ oz	
15'-16'		57		<0.01	0.0034	1 oz	
16'-17'		52			0.0019	½ oz	
17'-18'		53			<0.001		
18'-19'		3754					

$$Cu = \frac{1(0.65) + 0.75(0.11) + 1.25(0.01)}{3}$$

$$\frac{0.65 + 0.08 + 0.01}{3} = 0.25\% \text{ Cu @ 3 FT}$$

$$AG = \frac{1(0.0221) + 0.75(0.0240) + 1.25(0.0115)}{3(0.0034)}$$

$$\frac{0.0221 + 0.0180 + 0.0144}{0.0102} =$$

$$= \frac{0.0545}{0.0102} = 5.34 \text{ oz @ 3 FT}$$

NEW ASSAY

WELL: Phillips 6A

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Analyze for Cu Ag				
6' – 7' (Bag)	2848	Bagged	<0.01	0.002		
7' – 8' (4")	9	Sampling	↓	0.002		
8' – 9' (4")	50	↓	↓	0.003		
9' – 10' (4")	2851		↓	0.003		
9' – 9'6"	52		0.06 ✓	0.0134	4 oz	[illegible]
~~9'6"~~ 9'6" – 11'	53		0.02	0.001		[illegible]
11' – 12'	54		<0.01	0.002		[illegible]
12' – 13'	55		↓	0.002		
13' – 14'	56		↓	<0.001		
14' – 15'	2857		↓	0.001		
6 – 9 (Bag)	2858		0.05	0.006		
	15	10				

			OLD	NEW	O %	N %
6'-7'	2848 (OMIT)		<0.01	<0.01	0.002	0.0014
7'-8'	49 (" ")		↓	0.01	0.002	0.0016
8'-9'	50 (" ")	0.0[illegible]% Cu.	↓	↓	0.003	0.002
9'-10'	51 (OMIT)		↓	↓	0.003	0.003
9'-9'-6"	52 (USE)		0.06	0.06	0.0134	0.0132
9'6"- 11'-0"	53		0.02	0.03	0.001	0.001
11'- 12'	54		<0.01	<0.01	0.002	0.0017
12'-13'	55		↓	↓	0.002	0.0028
13'-14'	56				<0.001	<0.001
14'-15'	57		↓	↓	0.001	<0.001
6'-9' (BAG)	2858 (USE)		0.03	0.05	0.006	0.0065

2.15 oz

CALCULATION ON REVERSE SIDE

$$AG = \frac{0.0063(3) + 0.5(0.0133)}{3.5(0.0034)}$$

$$= 2.15 \text{ oz @ } 3.5 \text{ FT}$$

$$Cu = \frac{0.04(3) + 0.06(0.5)}{3.5}$$

$$= \frac{0.12 + 0.03}{3.5} = \frac{0.15}{3.5} = 0.04\% \text{ Cu @ } 3.5 \text{ FT}$$

Page 1 of

Phillips Corehole #P-11

WELL: P-11

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
		Analyze for Cu Ag.				
0-1	3033		0.12	<0.001		Soil
1-2	34		0.19			[illegible]
2-3	35		0.22			
3-4	36		0.39			[illegible]
4-5 Dry	37		0.33			
4-5 (wet)	30 38	0.45% Cu.	0.53		0.00g.	
5'-6'8"	30 39		0.35			[illegible]
6-9'	40		0.51			[illegible]
9'-9'6"	41		0.07			[illegible]
10'-11'	42		0.06			[illegible]
11'-12'	43		0.05			
12'-13'	44		0.05			[illegible]
(14") 15'-17' equal of this interval lost	14 3045		0.04			[illegible]
18'7"-19'7"	46		0.02			[illegible]
19'7"-20'6"	AG. RE-RUN 47		0.36	0.0013		[illegible]
20'6"-21'7"	2.30g 48		0.16	0.0074	2g+	[illegible]
21'7"-22'6"	2.80g 49		0.03	0.0060	1.8g	[illegible]
22'6"-23'6"	0.30g 30.50		<0.01	0.0014		
23'6"-24'6"	2.20g 51	0.03% Cu		0.0068	2g	2.27g
24'6"-25'6"	3.70g 52			0.0105	3g	
25'6"-26'6"	2.30g 53			0.0064	2g	
26'6"-28'	1.00g 54			0.0029	3/4g	
28'-29'	30.55			<0.0005		
D24 ORE 29'-30'	56					
30'-31'	57					
31'-32'	58					

$$Cu = \frac{1(0.39) + 1(0.53) + 1(0.51) + 1(0.35)}{4} = 0.45\% \, Cu \text{ @ } 4 \text{ FT.}$$

ASSUME SAME ASSAY
FOR 5FT INTERVAL

$$AG = \frac{2.3 + 2.8 + 0.3 + 2.2 + 3.7 + 2.3}{6} = 2.2 \text{ oz @ } 6 \text{ FT}$$

WELL: Phillips Corehole P-8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Lab. Analyses Ag.	Lithology
		Analyze for Cu Ag			
0-1' Bag	2532		<0.01	<0.001	soil
1'-2'	33				"
2'-3'	34				slt stn, brk red
3'-4'	35				
4'-5'	36				
5'-6'	37				ss, red
6'-7'	38				
7'-8'	39				
8'-9'	40				
9'-10'	2541				
10'-11' (Core)	2091				
DO SMALL-FOR BAG SAMPLE → 12'-13' (Bag)	2092				
13'-14' (Bag)	2093				ss, gray to red
14'-14'7"	2094				ss, pink
START HERE → 16'-17'7"	2095		<0.01	<0.001	ss, pink-red
20'-20'3"	2096				ss, red
21'6"-22'6"	2097				
22'6"-23'6"	2098				
23'6"-24'	2099		0.04		
24'6"-25'6"	2102		0.11		red-gray slt, clyst
25'6"-26'6"	2103		0.09		
26'6"-27'9"	04		<0.01		
27'9"-28'4"	05		<0.01		red slt, clyst
28'4"-29'5"	06		0.03		red slt, clyst
29'5"-30'	07		0.16		clyst, red slt
FINISH HERE → 30'-31'5"	2108		0.05		clyst

WELL: PHILLIPS P8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
14 - 15 (Bag)	~~2104~~ 2100					
15 - 16 (Bag)	~~2105~~ 2101					
19 - 20 (Bag)	2109		<0.01	<0.001		
20 - 21 (Bag)	2110					
21 - 22 (Bag)	2111					
22 - 23 (Bag)	2112					
24 - 25 Bag	2113		0.04			
25 - 26 (Bag)	2114		0.05			
27 - 28 (Bag)	2115		0.03			
28 - 29 (Bag)	2116		0.03	0.001		
29 - 30 Bag	2117		0.01	<0.001		
~~12 - 13 (Core)~~						
~~13 - 14 (Core)~~						
12 - 13 Core	3954		<0.01	<0.001		
13 - 14 Core	3955					
~~[illegible]~~						

WELL: Phillips P-8

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Lab. Analyses Ag.		Lithology
		Analyze for Cu Ag				
TO 31'5" – 32'6"	3956		<0.01	<0.001		
32'6" – 33'6"	57					
DO 33'6" – 34'6"	58					
34'6" – 35'6"	59					
35'6" – 36'6"	60					
36'6" – 37'6"	61					
37'6" – 38'6"	62					
38'6" – 39'6"	3963		0.01			
39'6" – 40'6"	1984		<0.01	<0.001		
40'6" – 41'6"	85		0.01			
41'6" – 42'6"	86		0.01	0.01	<	< OLD/NEW
42'6" – 43'	87		0.03	0.03	0.8	0.7 VALUES
43' – 43'9"	88		0.07	0.08	2.1	1.6 OZ/TON
43'9" – 44'4"	89		0.02	0.02	<	<
44'4" – 45'	90		0.01			
45' – 46'	91		0.02			
46' – 47'	92		0.03			
47' – 48'	93		0.03	0.03	<	<
48' – 49'	[illegible]		0.26	0.24	2.6	2.3
49' – 50'	95		0.05	0.04	<	<
50' – 51'	96		0.06			
51' – 52'	97		0.05			
52' – 53'	98		0.05			
53' – 54'	99		0.02	0.02	<	<
54' – 55' (16)	2000		0.12	0.11	0.3	0.2
55' – 56'	01		0.10	0.09	<	<

WELL: Phillips P-8

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze for Cu, Ag	Cu.	Ag.		
56' - 57'	2002		0.03	<0.01		abundant lrn clystn & gry
57' - 58'	03		0.02	↓		" "
58' - 59'	04		0.06			lrn & gry clstn
59' - 60'	05		0.07			"
60' - 61'	06		0.02			rd. frm clystn
61' - 62'	07		<0.01			lrdy frm clystn
62' - 63'	08		0.01			" "
63' - 64'	09		<0.01			dkgy clystn
64' - 65'	2010					"
65' - 66'	11					rd frm clystn
66' - 67'	12					" "
67' - 68'	13					rd, brn & gry clystn
68' - 69'	14		0.01			
69' - 70'	15		0.01			
70' - 71'	16		<0.01			
71' - 72'	17					
72' - 73'	2018					Clystn gry
73' - 74'						

WELL: Phillips Corehole P-8

Footage	Lab. No.	Instructions	Lab. Analyses. Cu.	Ag.		Lithology
		Analize for Cu Ag				~~[illegible]~~
74' – 75'	2019		<0.01	<0.001		[illegible]
75' – 76'	20		0.01			"
76' – 76'6"	21		0.02			" "
76'6" – 78'	22		<0.01			[illegible]
78' – 79'	23					[illegible]
79' – 80'	2024					" "
80' – 81'	2542		<0.01	<0.001		
81' – 82'	43					
82' – 83'	44					
83' – 84'	45					
84' – 85'	46					
85' – 86'	47					
86' – 87'	48					
87' – 88'	49					
88' – 89	50					
89' – 89'7"	2551					

.05 (7-78)

NEW ASSAY

WELL: B-2

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Lab. Analyses		Lithology
[illegible] - 1' (Bag)	1686		<0.01	<0.001		[illegible]
1' - 2' (Bag)	87					"
2' - 3' (Bag)	88					"
3' - 4' (Bag)	89					[illegible]
4' - 5' (Bag)	1690					" "
5' - 6'	91	NOTE ONLY 5½" CORE				" "
6' - 7'	92					[illegible]
7' - 8'	93		0.01			[illegible]
8' - 9'	94					[illegible]
9' - 9½'	95					" "
10 - 11'	96					[illegible]
11' - 12' 2"	97	NOTE LOST - 11'7'-12'				" "
12½" - 13'	98					[illegible]
13' - 14'	99					
14' - 15'	1700					
15' - 16'	01					
16' - 17'	02					
17' - 18'	03					
18' - 19'	04					
19' - 20'	05					
20' - 21'	06		<0.00	<0.001		[illegible]
21' - 22'	07					"
BAG - 79'	4144		0.37	<0.001		

WELL: Bailey B-2

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
		Analyze for Cu & Ag	Cu.	Ag.		
22' – 23'	1708		<0.01	<0.001		Silt, green gy
23' – 24'	09					" " "
24' – 25'	1710					Sy green gy
25' – 26'	11					" " "
26' – 27'	12					" " "
27' – 28'	13					" " "
28' – 29'	14					" " "
29' – 30½'	15					" " "
31' – 32'	16					" " "
32' – 33'	17					" " "
33' – 34'	18					" " "
34' – 35'	19					Sy, sy, lam gy
35' – 36'	1720					" " " "
36' – 37'	21					" " " "
37 – 38'	22					" " " "
38 – 39'	23					Silt, wh
39 – 40'	24					Silt, gy
40' – 40'6"	25					" " "
40'6" – 41'	26		0.008	<0.001		Silt, gy
41' – 42'4"	27		0.009			" " "
42'4" – 44'	28		0.01			Silt, lt
44' – 45'	29		0.02			" "
45' – 46'	1730		<0.01			" " "
46' – 47'	31					" " "
47' – 48'	32					Silt, dk
48' – 49'	33					" " "
49' – 50'	34					" " "

NEW ASSAY

NOTE NEW Cu + Ag VALUES

WELL: Bailey Core hole # B-2

Footage	Lab. No.	Instructions	Lab. Analyses Cu. %	Ag. %		Lithology
		Analyze for Cu, Ag				
50' – 51'	1735		<0.01	<0.001		Synth. Dk gy
51' – 52'	36	COMBINED				" " "
54' – 55'	37	ASSAY				" " "
55' – 56'	38					" Dk gy bm
56' – 57'	39					" " "
57' – 58'	1740					" Dk bm
58' – 59'	41					" " "
59' – 60'	42					" " "
60' – 61' 2"	43		<0.01	<0.001		" " "
SEE NEXT PAGE 62' – 63'	44	RUN HEAT Cu	SEE	NEXT	PAGE	
63' – 64'	45	← Cu 0.06%	0.06	0.06	4.3	3.8 OLD/NEW oz/TON
64' – 65'	46	← "	0.04	<0.01		
ASSAY 65' – 66'	47		0.04			
66' – 67'	48		0.05			
67' – 68'		1748A	0.14			
68' – 69'	49		0.05			
69' – 70'	1750		0.16			
70' – 71'	51		0.18			
71' – 72'	52		0.20			Dk gy
72' – 72' 9"	53	0.58 % Cu	0.52			Dk gy
74' – 74' 9"	1754		0.70			" "
74' 9" – 75' 4"	1755		0.64			" "
76' – 77'	1756		0.50	0.50	<0.3	<0.3
78' – 79' 3"	1757		0.35	0.34	1.5	1.8
79' 3" – 80'	1758		0.08	0.07	0.3	<0.3
80' – 81'	1759		0.14	0.14	21.5	19.8
81' – 82'	1760	1759A 0.09 Cu	0.02	<0.001		
82' – 83'			0.22	<0.001		

OLD/NEW . Ag IN oz/TON

OVER

NEW ASSAY

NOTE OLD/NEW VALUES Ag IN oz/TON

WELL: Bently Corehole B-7

Footage	Lab. No.	Instructions	Lab. Analyses Cu.		Ag.		Lithology
		Analyze for Cu Ag					
93' - 94'	1761		0.02	0.02	10.9	10.5	Slight [illegible]
94' - 95'	62		0.02	0.01	0.3	0.7	" "
95' - 96'	63		<0.01		<0.001		Slight [illegible]
96' - 97'4"	1764		<0.01		"		
97 - 5							
END							
T.D. 88'							
62 - 62'6"	1744		<0.01	<0.01	<	<	OLD/NEW VALUES
62'6" - 63	1744A		0.06	0.05	0.3	<0.3	Ag IN oz/TON

(A) $Cu = \frac{0.67(0.52) + 0.67(0.70) + 0.67(0.64) + 1(0.50)}{3.01}$

$\frac{0.34 + 0.47 + 0.43 + 0.50}{3.01} = \frac{1.74}{3.01} = 0.58\%$ Cu ASSUME SAME ASSAY FOR 5 FT. INTERVAL

(B) $Cu = \frac{0.67(0.52) + 0.67(0.70) + 0.67(0.64) + 1(0.50) + 1.25(0.35)}{4.26}$

$= \frac{2.18}{4.26} = 0.51\%$ Cu ASSUME SAME ASSAY FOR 7.25 FT. INTERVAL

$Ag = \frac{1.65(1.25)}{7.25} = 0.28$ oz FOR 7.25 FT.

(C) $Ag = \frac{20.65(1) + 1(10.7)}{4} = 7.83$ oz @ 4 FT

$Cu = \frac{1(0.14) + 1(0.02) + 1(0.22) + 1(0.02)}{4} = 0.10\%$ Cu @ 4 FT

NEW VALUES
OLD/NEW
Ag IN oz/TON

WELL: B-11

Footage	Lab. No. Analyze for Cu Ag	Instructions	Lab. Analyses Cu.	Ag.		Lithology
0-1	2975		<0.01	<0.0005		[illegible]
1-2	76					"
2-3	77					[illegible]
3-4	78					"
4-5	2979		0.02			[illegible]
	2980		0.01			[illegible]
5-6'	81		0.20			[illegible]
6-7'	82		0.11			
7'-8'	83		0.13			
8-9'	84		0.09			
9'-10'	2985		0.08			[illegible]
10'-11'	86		0.08			
11'-12'	87		0.14			[illegible]
12'-13'	88		0.06			
13-14	89		0.04			[illegible]
14-15	2990		0.05			[illegible]
15-16	91		0.06			
16-17	92		0.07			[illegible]
17-18	93		0.07			
18-19	94		0.17			
19-20	2995		0.10	<0.0005		
20-21	96		0.15			
21-22	97		0.13			
22-23	98		0.10			
23-24	99		0.3[illegible]	0.2[illegible]	<	<
24-25	3000		0.16	0.15	1.3	<
25-26'3"	3001		0.49	0.49	<	0.9

Bagged
Bagged
WET
DRY

SAMPLES PROB REVERSED ORIG

(2)

NEW VALUES

OLD/NEW Ag IN OZ/TON

WELL: B-11

Interval	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.			Lithology
		Analyze for Cu, Ag					
~~25'-26'3"~~	~~306.8~~						~~no lithology~~
26'3"-27'	306.9	START	0.20	0.20	1.4	1.5	chalcocite
27'-28'	70		0.05	0.03	0.7	0.8	
28'-29'	71		0.01	<	<	<	
29'-30'	72		0.04				
30'-31'	73		0.02				
31'-32'	74		0.05				
32'-33'11"	3075	END	0.07				
~~33'-33'11"~~	~~3076~~						

cut

cut

(3)

WELL: B-11

Footage	Lab. No.	Instructions	Lab. Analyses Cu.	Ag.		Lithology
33'[illegible] – 34'	3002		<0.01	<0.001	<	[illegible]
34' – 35'	03					
X 35' – 36'	04					
36' – 37'	3005					
37' – 38'	06					
38' – 39'	07					[illegible]
39' – 40'	08					
40' – 41'	09					[illegible]
41' – 42'	3010		0.01			
42' – 43'	11		0.07			
43' – 44'	12		0.05			
44' – 45	13		0.07			[illegible]
45' – 46'	14		0.05			[illegible]
46' – 47	3015		0.03			
47 – 48	16		0.07			
48 – 49	17.		0.06			[illegible]
49 – 50	18		0.05			
50 – 51	19		0.06			
51 – 52'3"	3020		0.29			[illegible]
53' – 54'	21		0.02			[illegible]
54' – 55'	22		<0.01			
[illegible]	23		0.02			
[illegible]	24		0.11			
57' – 58'	3025		<0.01			
58' – 59'	26		0.01			
59' – 60'	3027		<0.01			

(4)

B-11

WELL:

Footage	Lab. No.	Instructions	Lab. Analyses			Lithology
			Cu.	Ag.		
60' - 61'	3028		<0.01	<0.0005		Quartz, [illegible]
61' - 62'	29					
62' - 63'	3030					
63' - 64'	31					
64' - 65'	3032	stop				
65' - 66'						
66' - 67'						
67' - 68'						
68' - 68'6"						

Item 5

Refer to Accompanying
Plate No. 1
Plate No. 2
Plate No. 3
Plate No. 4

WOLF RIDGE MINERALS CORPORATION

Available Personnel and Facilities

STAFF

Geologists:

Irvin Nielsen	B.S. 1952	Geology
Zen Merritt	M.S. 1958	Geology
Dave Phillips	M.S. 1958	Geology
	J.D. 1966	Law

Mining Engineer:

Edward C. Rosar — B.S. 1952 (Production Economist, Cleveland Cliffs 1952-1967)

Chemist:

Derek W. Bailey — Natural Certificate in Chemistry, Bristol College of Science and Technology, 1957

Lab Assistants:

Edward Bosier
Bill Hammerich

Accountant:

Robert C. Young (Consultant)

Auditor:

Arthur Andersen & Co.
1700 Broadway
Denver, Colorado 80202

FACILITIES

Office: Village Inn, Glenwood Springs, Colorado
Laboratory: Rifle, Colorado (primarily equipped for atomic absorption analyses)

WOLF RIDGE MINERALS CORPORATION

MERRITT PROJECT

COST SUMMARY

PERIOD: 6 months

(1)	CORE DRILLING	
	180 holes totaling 7300 feet x 5.60/ft.	$ 40,880
(2)	ASSAYING	
	125 holes x 60 assay/hole x $2.00/assay	15,000
(3)	FIELD GEOLOGY	
	(a) Geologist	
	$1050/month x 4 months	4,200
	(b) Field Technician	
	$400/month x 4 months	1,200
	(c) Miscellaneous Field Expense	
	Core boxes, hole covers, freight, etc.	2,635
	(d) Living and Travel Expenses	
	(inc. rental vehicle)	6,420
(4)	GEOLOGIC AND ECONOMIC EVALUATION	
	(a) Geologist	
	$1050/month x 2 months	2,100
	(b) Mining Engineer	
	$1667/month x 1.5 months	2,500
(5)	MAIN OFFICE OVERHEAD EXPENSE	
	(a) Salaries	19,350
	(b) Office Expenses and Supplies	12,030
	TOTAL	$106,315

WOLF RIDGE MINERALS CORPORATION

TEXAS AND OKLAHOMA PROJECTS

COST DISTRIBUTION

PERIOD: June 1, 1967 to January 31, 1968

(A)	DIRECT EXPENDITURES	
(1)	WRMC - FIELD GEOLOGY	
	(a) Salaries	$ 12,828.46
	(b) Living and travel expenses	10,771.52
(2)	CONTRACT - FIELD GEOLOGY	
	Wilde, Inc. - Texas	8,796.29
(3)	LANDMEN	
	(a) Charles Johns - Texas	2,630.31
	(b) John Houston - Oklahoma	13,682.69
(4)	LEASES	
	(a) Texas	4,283.81
	(b) Oklahoma	26,954.52
(5)	CORE DRILLING	
	(a) Texas	4,673.19
	(b) Oklahoma	14,692.20
(6)	WRMC - LABORATORY	
	(a) Salaries	8,972.32
	(b) Supplies	6,560.49
(7)	OTHER EXPENSES	
	Maps, abstracts, spectro-analyses, etc.	3,945.95
(8)	CORE HOLE DAMAGE PAYMENTS	
	at $25 per corehole	1,225.00
	SUB-TOTAL	$120,016.75
(B)	MAIN OFFICE EXPENSE	
	Operating and equipment	85,496.52
	GRAND TOTAL	$205,513.27

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1008 • Glenwood Springs, Colorado 81601

OME Region III
RECEIVED
MAR 12 1968
Denver, Colorado

March 11, 1968

Mr. J. William Hasler
Office of Minerals Exploration
Region III
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Hasler:

Enclosed are six copies of the Lien and Subordination Agreement properly signed by Mr. Nielsen and bearing the Corporation seal.

I am sorry these are so slow in reaching you but Mr. Nielsen was gone longer than anticipated and he just got them signed.

I have requested a bid from two drilling companies as you requested, and would expect them to be in shortly.

Thank you for your assistance and please contact us if you have a question or require additional information.

Yours very truly,

WOLF RIDGE MINERALS CORP.

Z. S. Merritt

ZSM:rd
Encl. (6)

Office of Minerals Exploration
Building 53 Room 200

June 12, 1969

Mr. David Phillips
Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado 81601

Re: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Dear Mr. Phillips:

In accordance with your written request of June 10, please find enclosed a folder of recorded leases on the Merritt Prospect submitted with your application dated March 4, 1968.

Sincerely yours,

J. William Hasler
mc

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

OFFICIAL COPY
O. M. E.
RECEIVED
JUN 16 1969

INITIALS	CODE
	~~130~~
bd	20
HK	~~20~~
(on leave)	20
	220

Enclosure

cc: Chief, Office of Minerals Exploration
OME-6707
OME chron
Mr. Hasler

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1008 • Glenwood Springs, Colorado 81601

June 10, 1969

OME Region III
RECEIVED
JUN 12 1969
Denver, Colorado

Mr. J. William Hasler
Office of Minerals Exploration
Geological Survey
U. S. Dept. of the Interior
Federal Center (Bldg. 53, Rm. 203)
Denver, Colorado 80225

Re: OME - 6707 (Silver - Copper)
Wolf Ridge Minerals Corporation
Garvin County, Oklahoma

Dear Mr. Hasler:

We would like to request the release of all the copies of the mineral leases which we filed with your office in our OME loan application No. 6707 in the spring of 1968. We have need for these, and since our application was rejected in your letter from Washington dated January 16, 1969, this will eliminate our having to re-duplicate all of these.

Yours very truly,

David P. Phillips

David P. Phillips

DPP:mg

Wolf Ridge Minerals
OME 6707

Roll of maps in
Map file drawer -
labelled White Pine County

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/10/69		120
		220

JUN 1 0 1969

Mr. David Phillips
Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado 81601

Re: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Dear Mr. Phillips:

In accordance with your telephone request today to our Denver office, we are enclosing a folder of recorded leases on the Merritt Prospect submitted with your application dated March 4, 1968.

Sincerely yours,

Harold Kirkemo (gla)

Harold Kirkemo
Chief, Office of
Minerals Exploration

Enclosure

cc: Director's Reading File
Economic Geology File
OME docket
OME Reading File
OME Region III
Mr. Kirkemo

HKirkemo/gla 6-10-69

OME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/10/69	Peterson	120
1/10/69	Kirkemo	120
1/13	Johnson	110
1/14	Kilgore	220
1/14	Cayan	
		110
		220

JAN 16 1969

AIRMAIL

Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado 81601

Re: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Gentlemen:

A careful review has been made of all the information available to us relating to your application for financial assistance to explore the cited property. This review indicates that although bodies of ore-grade material may occur, their irregular distribution and erratic grade of mineralization do not support the expectation of finding an economic mineral deposit. Under these circumstances, Government participation in the proposed work cannot be justified. Accordingly, we must inform you that your application for assistance is denied.

We regret the necessity for this action which, however, is taken without prejudice to the property. Should you perform additional work on the property which discloses evidence that could materially change this opinion, we shall be pleased to consider a new application at that time.

We wish to thank you for your interest in the minerals exploration program and for bringing your property to our attention.

Sincerely yours,

FRANK E. JOHNSON

Frank E. Johnson
Chief, Office of
Minerals Exploration

cc: Director's Reading File
Economic Geology File
OME docket
OME Reading File
OME Region III
Mr. Peterson
Mr. Kirkemo
130

ECPeterson/bsl 1/9/69
Rewritten: HKirkemo/gla 1/10/69

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/10/69		120
1/10/69	Kirkham	120
1/13	Johnson	110
1/14	Kilbourne	220

January 10, 1969

Memorandum

To: The File

From: E. C. Peterson, Office of Minerals Exploration

Subject: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Justification for Denial of Application

The OME field examiner has recommended that the subject application for assistance be approved and a contract prepared in accordance with his revised proposal. However, after reviewing the available information relating to the application, it is recommended that the application be denied, without prejudice, for the following reasons:

1. Previous drilling by the Applicant shows that lenticular pods of mineralized sandstone exist which are essentially non-continuous, and do not extend over areas large enough to contain sufficient reserves to support a profitable mining operation.

In this connection, the drilling indicated that areas immediately north, south, and east of the project site were barren of mineralization. It was also noted that erosion has removed the stratigraphic section containing the mineralized material from the western portion of the property.

2. Copper and silver mineralization is found in separate thin lenses, and because of their marginal values appear not to be economical to mine even with selective open-pit methods.

3. Considering the situation with respect to availability of funds for OME contracting, the Field Officer concedes that other proposals under consideration in Region III offer better chances of discovering significant ore reserves.

Available information suggests that any ore reserves which may exist on the property are small and low grade with little economic potential. However, based on successful mining operations elsewhere in the State on deposits in similar sandstone beds, there exists the possibility that favorable exploration targets may be found on the

Applicant's property. Therefore, it is recommended and the Field Officer concurs that the application for assistance be denied without prejudice to the property. Should the Applicant perform additional work and obtain evidence that exploration is warranted, the OME could consider a new application at that time.

Edward C. Peterson

cc: Director's Reading File
Economic Geology File
OME docket
OME Reading File
Mr. Peterson
Mr. Kirkemo

ECPeterson/bsl 1/9/69
Rewritten: HKirkemo/gla 1/10/69

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/10/69	Peters	120
1/13	Johnson	120
1/14	Kilsgaard	110
		220

January 10, 1969

Memorandum

To: The File

From: Assistant Chief, Office of Minerals Exploration

Subject: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Review of Application

The Applicant proposed an exploration program estimated to cost $106,000 to explore copper and silver-bearing sandstones of Permian age on its property in Garvin County, Oklahoma, about 50 miles south of Oklahoma City. The program would consist of drilling to determine stratigraphic information and to locate additional areas of mineralization, and then to drill around known areas of mineralization on 200-foot centers.

The Merritt prospect is underlain by flat-lying, continental-type, lensy sandstone beds, and by mudstone and shale. The area is dissected by creeks and gullies. Copper occurs here chiefly as microscopic blebs of chalcocite between sand grains and partially replacing them. Chalcopyrite and bornite and oxide minerals of copper are present in minor amounts. Copper is associated mainly with beds of medium- to coarse-grained sandstone and occurs generally in the lower sections of the beds. Silver occurs in fine-grained native form and is found only in fine-grained and silty sandstone, and commonly below the base of the copper-bearing sandstone layers.

The Applicant drilled approximately 34 holes in the area in 1967 with the deepest penetration about 90 feet. Nine holes cut mineralized material. Copper values were encountered, ranging from 0.33 to 4.9 percent copper in lenses 0.5 to 6.5 feet thick. ~~This material ranged in depth from 8 to 24.5 feet thick.~~ This material ranged in depth from 8 to 24.5 feet. Silver values ranging from 2.25 to 20.6 ounces per ton in beds 1 to 2 feet thick were noted in 5 holes. The higher values in silver occurred in one drill hole (B-2) between 80 and 81 feet below the surface.

Mineralized intervals found in individual drill holes generally cannot be extended from hole to hole because of the lenticular and discontinuous nature of the sandstone lenses, and the seemingly erratic nature of the mineralization. The possibility of continuous mineralized beds underlying large areas is not favorable.

Apparently, no mineralization of economic interest was cut in the nine holes drilled north, east, and south of the mineralized area. Owl Creek, bordering the western margin of the property, has removed the favorable sandstone interval there. The Applicant shows on a sketch map of the P4 area, Plate No. 4, that the eastern limit of mineralization is estimated to be 100 to 150 feet east of the P4 area. The probable eastern limit of the mineralized sandstone beds is indicated on the Applicant's Plate No. 2 showing the Ryan sand zone. Considering these lateral limitations and the absence of favorable host rock in some areas because of erosion, the remaining area where mineralized sandstone lenses may occur is about 350 acres.

The Merritt deposit is geologically similar in some respects to the copper deposit now being mined by the Eagle Picher Company in the Creta area, Jackson County, Oklahoma, some 140 miles to the west. Both are shallow red-bed sandstone deposits of Permian age. The principal mineral occurrence in each deposit is fine-grained, interstitial chalcocite.

Published reports of preliminary exploration in the Creta area indicate that the copper content of a 7- to 8-inch thick "lower copper bed" ranges from 2.65 to 4.45 percent, and averages about 3.8 percent copper for approximately 3 miles in the central part of the outcrop belt. An "upper copper bed" has little economic potential because its copper content ranges from 0.38 to 1.27 percent, averaging about 0.8 percent. No silver is reported in either the lower or upper copper beds.

Mineralization in the Merritt deposit appears to be much less persistent than in the Creta area. The average grade of sampled material is about 1.4 percent copper as compared to about 3.8 percent in the Creta area. The presence of silver in the Merritt deposit is interesting, but the possibility of extensive bodies of silver-bearing sandstone appears to be limited as shown by offset-holes drilled near the holes where silver was found in appreciable amounts.

Harold Kirkemo

Harold Kirkemo

cc: Director's Reading File
Economic Geology File
OME docket
OME Reading File
Mr. Kirkemo

HKirkemo/gla 1-10-69

IN REPLY REFER TO:

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

Office of Minerals Exploration
Building 53 Room 203

October 21, 1968

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region III

Subject: OME-6707 (Silver-Copper)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Transmitted herewith is a report of examination on the Merritt Prospect, Garvin County, Oklahoma recommending a proposed exploration program.

I concur with the conclusions and recommendations of the examining geologist; however, under the E. J. Longyear bid on page 23 of the report, there appears to be two different figures for mobilization -- one for $845.00 and another one for moving 2 vehicles from Phoenix, Arizona to Paoli, Oklahoma and return for $564.00. It is recommended that the $564.00 figure be deleted. In the summary cost figures on page 24, the operator lists a Geologist's services for 8 months at $1,050/month, and a Field Assistant for $400.00 per month for 8 months, then requests living expenses amounting to $4,900.00. It is my understanding that the geologist listed here will be the Supervisor-Geologist, and will be on the property full time. If this is so, then the living expenses listed on page 24 cannot be allowed as the salary of $1,050/month should include the living expenses.

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 203

October 18, 1968

OFFICIAL COPY
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Memorandum

To: Chief, Office of Minerals Exploration

From: Jacques F. Robertson

Subject: OME-6707 (Silver-Copper)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Transmitted herewith is the report of examination on the subject property by Jacques F. Robertson. A contract is recommended to explore for copper and silver deposits by diamond drilling 6 areas penetrated by the applicant's discovery holes, involving as much as 6,260 feet of drilling in two phases at an estimated total cost of $67,946.00.

Jacques F. Robertson

Jacques F. Robertson, Geologist
Office of Minerals Exploration

UNITED STATES

DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, SECRETARY

U. S. GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION

REPORT OF EXAMINATION

REGION III

OME-6707 (Silver-Copper)

WOLF RIDGE MINERALS CORPORATION

(Merritt Prospect)

GARVIN COUNTY, OKLAHOMA

By

JACQUES F. ROBERTSON

GEOLOGIST

OCTOBER, 1968

Report of Exam

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2. Sketch Map No. 2 - P3A Area.

3. Sketch Map No. 3 - P11 Area.

4. Sketch Map No.4 - P6A Area.

5. Sketch Map No. 5 - B2 Area.

Introduction

The Wolf Ridge Minerals Corporation of Glenwood Springs, Colorado applied to the Office of Minerals Exploration on March 4, 1968 for financial assistance to explore the property referred to as the Merritt Prospect in Garvin County, Oklahoma. The application is for the metal commodities copper and silver and was assigned docket No. 6707. It was referred to the Region III field office by Mr. Harold Kirkemo on April 16, and field examination was made on May 27 and 28 by Jacques F. Robertson of the U. S. Geological Survey accompanied by Mr. David Phillips, geologist with the company.

The Merritt Prospect is located in sections 7, 13, 18 and 19, T. 4 N., R. 1 E., east of Paoli, which is 47 miles south of Oklahoma City on U. S. Highway 77. Paoli is a rural community of about 500 people located on the Atchinson, Topkea, and Santa Fe Railroad. Pauls Valley, 7 miles to the south of Paoli, is the closest town to the property having suitable accommodations and stores.

The countryside consists of cultivated farms, pastures, and scattered, small woodlands on a topography of gently rolling surfaces 100 to 120 feet above the main stream valleys. The ridges have relatively sharp breaks in slope along their flanks, somewhat more pronounced on the east side. The meandering Washita River, 4.5 miles south of Paoli, flows generally east and appears to be superimposed on the topographic grain of the country. The main creeks flowing south and their tributary drainage form modified trellis patterns. Hundreds of lakes and farm ponds dot the countryside. County roads,

for the most part, follow section lines and with the cultivated fields, give a decided square pattern to the culture.

Geology

The Merritt properties are located on continental-type reddish-gray, fine grained sandstone beds of Permian age. The beds dip gently west between 1° and 2° and their strike, mirrored by the trend of the ridges, is roughly N. 20° E. The intervening shallow valleys and back slopes of the ridges are underlain by relatively softer, interbedded, reddish-gray shaly mudstone and siltstone. The sandstone beds generally display channeling and bedding characteristic of fluviatile sediments.

Although poorly exposed, the beds are subdivided into units (Dott, 1927, p. 124), and correlated with the Wellington Formation (Leonardian) and possibly the Stratford Formation (Wolfcampian) (Hicks, 1956, p. 339).

Dott (1927, p. 126) describes his unit 2 as a tripart succession of mudstone and sandstone, which he tentatively relegates to the pre-Wellington Permian. At the base of unit 2 is about 65 feet of reddish gray to brown mudstone and 40 feet of massive sandstone. Over this lies medium light gray, fine-grained channel sandstone, that ranges from as much as 35 feet thick to as little as 2 feet thick over a distance of a few hundred feet. At the top is about 145 feet of reddish gray mudstone containing thin discontinuous beds of sandstone. The gray, fine-grained channel sandstone is exposed in a large pit 8 miles east of Paoli, in sec. 4, T. 4 N., R. 2 E., in

the Byars 7-1/2' quadrangle. It is stained green in certain layers and is reported to have produced some silver and copper (Dott, 1927, p. 126).

Overlying the shaly mudstone of unit 2, Dott describes his unit 3 (1927, p. 126) as reddish-gray to gray, fine-grained sandstone beds that contain some shaly intervals and grade laterally into shaly mudstone, considered by him to be the basal part of the Wellington Formation. It crops out prominently just east of Paoli and contains the mineralized intervals of copper and silver that are the objects of exploration interest in this application. Stratigraphically higher sandstone and shale "red-bed" units of the Wellington and Garber Formations underlie the areas west and south of Paoli, but are outside the area of interest of this report.

Dott (1927, p. 126) reports a bed of barite rosette concretions at the base of his unit 3 that can be traced several miles southwest from sec. 4, T. 4N., R. 1 E. in the Byars SW 7-1/2' quadrangle. Barite rosettes are found locally at other horizons within this unit and serve as fair markers. Found interbedded near the top of unit 3 are lenses of gray sandstone containing concretions or nodules of calcium and iron carbonate 0.75 inch or smaller in diameter, forming a pseudo-conglomerate. An outcrop 1 mile east of Paoli on the north side of the paved road exposes green-, black-, and brown-stained concretions derived from oxidized copper minerals and also from manganese and iron. A large pit south of the road that exposes beds containing stained concretions is the result of an earlier attempt to work the deposit for copper. Similar stained

nodules are found sparsely scattered in gullies and on ridge slopes for several miles south of the pit. Traces of copper mineralization occur sparsely at other horizons of this sandstone in road cuts, gullies, and outcrops, generally at the bottom or top contacts with shaly mudstone. Because the mineralization is fine-grained and the sandstone and mudstone relatively soft and friable, appraisal of the copper-silver deposits is dependent largely on drill core information.

The preliminary exploration drilling program conducted by the company in 1967 reveals the lithology of the red-beds east of Paoli more correctly that it is described from surface exposures by Dott. The cross-sections provided with the application (Plate No. 4) were constructed from drill hole data, and show a much greater proportion of mudstone than sandstone. The company geologist applied the name 'Tonto Shale' to the mudstone which is more than 100 feet thick. Within it are lenticular and discontinuous sandstone beds 5 to 25 feet thick. One in the upper part of the section is called the 'Ryan Sand' and one in the lower part of the section is referred to as the 'Bailey Sand'. These are informal names only, given by the applicant to facilitate discussions of these units. Also distinguished are several thin beds of silty or shaly sandstone.

Mineral Deposit

The Wolf Ridge Minerals Corporation conducted an extensive surface drilling program in 1967 at shallow depth in the Wellington Formation within sections 7, 18 and 19 of T. 4 N., R. 1 E., on the Byars SW Quadrangle. Concentrations of copper and silver minerals were found in the subsurface sandstone lenses that are interbedded with mudstone;

the mineralization seems to be restricted to such horizons except for a small amount that extends marginally into the mudstone at the contact with the sandstone. Copper occurs in the form of microscopic blebs of chalcocite in the interstices of the sand grains and partially replacing them. Some chalcopyrite and bornite as well as the oxide minerals of copper are also present, but in relatively minor amounts. Silver occurs as native metal, generally so fine grained as to be readily overlooked and only detected through assays. The mineralized sandstone is generally light gray, in contrast to the enclosing beds of reddish gray mudstone. The gray color is apparently caused by alteration and bleaching that accompanied mineral deposition in a reducing chemical environment, whereas the mudstone has remained in its original oxidized condition. The mudstone is only slightly mineralized, probably because it is far less permeable than the sandstone. The mineralization appears to be epigenetic, and probably deposited from dilute, low temperature groundwaters that moved into and along the sandstone layers, in a manner similar to that ascribed to uranium deposits in sandstone beds on the Colorado Plateau.

Interestingly, the drill holes (applicant's report, plate No. 4) show that the silver of possible ore grade is not directly associated with the high copper values, although in some places they overlap. Copper is mainly associated with beds of medium to coarse-grained sandstone and generally in their lower parts; at a few places concentrations of copper extend downward 1 or 2 feet into the underlying beds of relatively finer-grained silty sandstone. For

the most part, however, copper occurs in barely more than trace amounts in the beds of silty sandstone or fine-grained sandstone. Silver, in contrast, is only known to occur in fine grained and silty sandstone, commonly below the base of copper-bearing sandstone layers or quite isolated from any cuprous sandstone. The persistent occurrence of copper and silver in separate deposits forces one to consider them as separate entities, for rarely do they overlap and reinforce one another.

Distribution and Reserves

Twenty-one of the approximately 34 holes drilled by the company in the area during 1967 contain little significant copper or silver values; that is, most of the 21 holes contain only traces to 0.25 percent copper per ton and only traces of silver, or rare isolated values of 0.5 to 1.5 oz. per ton silver. Tabulated below (Table 1) are intervals from 7 drill holes that contain significant copper. Shown in the table are the thickness of mineralized intervals, their weighted average content of copper, thickness of overburden, and the inferred reserve tonnages calculated for a 50-foot radius around each hole.

Table 1. Inferred Copper Reserves

	Drill Hole	% Cu/ton Wtd. Avg.	tons*	thickness (feet)	overburden (feet)
2.0' - 0.87% Cu	P4B	0.67 1.59	3,382	3	20
5.5' - 3.05% Cu	P4-P4A	3.36 19	6,550	5.5	13
8.0' - 0.34% Cu	P4H	0.71 19	5,240	8	8.5
5.0' - 0.33% Cu	B2	~ 0.50 4.1	3,930	6	72 — s
1.0' - 0.51% Cu	P11	~ 0.40 1.62	3,930	6	3 — s
2.0' - 1.31% Cu	P3A	? ~ 0.30 1.67	5,900 ?	9 ?	21 — s
2.0' - 1.31% Cu	P3A	1.31	655	1	8
		Total	29,587		

*A factor of 12 cubic feet/ton was used to convert volume to tonnage.

Drill holes P4 and P4A were drilled 70 feet apart into the same copper-mineralized sandstone bed, so the values encountered have been averaged together. The copper values in the 2 holes range from 0.42% to 19.39%, reflecting an erratic distribution of copper as can be seen in the logs and cross sections (applicant's report, Plate No. 4). The average value of 0.71 percent copper in drill hole P4H, which is 180 feet northwest of P4 and P4A, indicates a great decline in value laterally, as does the submarginal copper values in drill hole P4I, 190 feet to the south of P4 and P4A. From this it is inferred that cuprous sandstone of ore grade does not have great continuity within a bedded deposit, but rather, is restricted to relatively small sandstone lenses, or possibly to paleo-channels or bars of sandstone.

The apparent isolated occurrences of copper in drill hole

B2, P11, and P3A have generally low marginal values. Individually, however, they might indicate the protore fringes of ore-bearing lenses or channels that have not been discovered nor delimited by the few and widely spaced holes drilled to date. Some beds or streaks of higher grade copper may be considered economically minable in conjunction with ore-grade silver deposits encountered in these same holes.

All seven of the holes listed above contain significant silver as well as significant copper, although the silver is not closely associated with the copper. The silver is more generally found in beds of silty, fine-grained sandstone whereas the copper occurs in relatively coarser sandstone beds. Silver was found in 5 other holes that contain only traces of copper. Table 2 lists the grade, tonnage, inferred thickness of mineralized intervals, and thickness of overburden. The computation of inferred reserves is based on a 50-foot radius for each mineralized interval.

Table No. 2 -- Inferred Silver Reserves

Drill Hole	oz. Ag/ton Wtd. Avg.	tons*	Thickness (feet)	Overburden (feet)
B2	4.1	655	1	63
B2	4.91	4,585	7	78
B6	1.45	1,310	2	88.5
P3A	1.67	5,240	8	2
P4A	.9	1,965	3	15
P4B	1.57	2,620	4	21
P4C	3.49	3,275	5	12
P4H	.9	3,930	6	16
P4I	.53	1,965	3	13
P6A	.74	4,585	7	6
P8	.59	4,250	6.5	42.5
P9	.84	2,620	4	7
P11	1.62	3,930	6	20.5
	Total	40,730		

*A factor of 12 cubic ft./ton was used to convert volume to tonnage.

Drill holes P4A to P4I listed in Table No. 2 constitute a group in the middle northern part of section 18 that appear to intersect a silver-bearing silty sandstone layer at 13 to 21 feet of depth (applicant's report, Section C-C', Plate 4). The holes are too widely spaced, however, to establish with any certainty

whether silver occurs with high values between holes. Weighted average assay value from these holes range from 0.53 to 3.49 ounces of silver per ton. Additional holes must be drilled in the area of these holes to determine the limits and values of the silver deposit, and to further explore its extent.

Silver occurs in the basal part of a silty sandstone lens between drill holes B2 and B6 at a depth of 78 to 88.5 feet (applicant's report, Table No. 2 and Section A-A', Plate 4.) Here too, more drilling is needed to further explore for silver in this area. It appears that the favorable host rock pinches out to west of B2 and so does the silver. This may also be true to east and northeast of hole B6, but more drilling is needed to verify this. The silty sandstone of these holes appears to be at a lower stratigraphic horizon than the lens outlined by holes P4A to P4I. Other significant silver values are found in the remaining holes listed on Table No. 2, but the holes are so widely spaced as to require the drilling of additional intermediately spaced holes to establish the extent and grade of these finds.

The Wolf Ridge Minerals Corporation claims that it "now has a proven reserve of 11 acres * * * calculated to be 261,350 tons having a gross value of $3,224,200.00," in the Paoli area. The company has assumed that the values encountered in a drill hole may be extended without any reservations to include the ground underlying a circular area of one acre around the hole. Without offset drill holes or other information to sustain or support the

the finds from a single hole, any estimation of reserves must be regarded as inferred rather than proven. Moreover, the use of 1 acre of circular area about a drill hole extends the radius of mineralized ground to almost 120 feet, which is beyond acceptable limits. A more realistic though liberal figure would be a radius of 50 feet, which was used to calculate inferred tonnages of copper and silver in this report. Total copper reserves inferred from the company drilling program and calculated with a 50-foot radius amounts to 29,587 tons, ranging in weighted average values from 0.30 to 3.36 percent copper per ton. Admittedly, nearly half of this tonnage contains only 0.30 to 0.50 percent copper per ton, which may be subeconomic; it represents only 15 percent of the total value, however. The total dollar value of copper in place, at 42 cents a pound, is $286,826.00. Inferred reserves of silver amount to 40,730 tons, ranging in weighted average values between 0.53 and 4.91 ounces of silver per ton. The dollar value of silver in place at $2.20 per ounce is $158,789.00. Tht total value of copper and silver at current prices is $445,615.00, a figure which is considerably less than that claimed by the applicant.

From the data made available by the applicant, it is apparent that copper constitutes about 65 percent of the total metal value of the deposits in the Paoli area, and silver constitues 35 percent. It is quite possible that further drilling might lead to the discovery of additional reserves of silver, so that silver may eventually outrank copper in total value. This is conjecture based on the fact that more holes have penetrated significant silver values than copper values.

Applicant's Proposed Exploration Program

The original exploration proposed by the company envisaged a drilling program so broadly based in the initial stage as to constitute prospecting -- that is, essentially a search for widely spaced mineralized zones in the area. This would be followed by more intensive grid drilling about discovery holes to delineate the deposits and block out reserves. The first stage prospect holes are defined as stratigraphic cross section holes by the applicant, and their proposed locations are shown on the map (applicant's report, plate 2). The applicant proposes doing grid drilling on about 200 foot centers.

Although a sound approach for a long range company program of exploration of the area, the first stage would not qualify for government assistance, inasmuch as it falls into the category of prospecting. The second part, with some modifications, has some merit for expanding on those zones already defined by the company's 1967 drilling. The applicant was asked to review his proposals in light of the above observations, and resubmit some drilling proposals that would satisfy OME regulations.

A revised drilling program was submitted for consideration on June 20, 1968. It includes 8 parts, called stages, which through grid drilling would explore eight different areas considered promising by the applicant. They are each centered about one or more holes drilled earlier by the company in which there are silver values and other showings.

The revised proposal to explore the eight stages or locations as presented by the applicant is enclosed with this report. Proposed drilling at each "stage" or location may be considered as a separate program from the others, but the approach is basically the same. The idea is to drill a set of holes in a square or hexagonal pattern about discovery holes previously drilled by the company that contain silver values. The drilling would then be expanded in a grid if the results of the initial hexagonal drilling were favorable. A maximum of 7,000 feet of drilling is proposed by the applicant, all invested in shallow holes not exceeding 90 feet in depth. The pattern of drilling and amount of drilling at each site would be flexible depending on the results encountered as drilling progressed, and the program could be expanded or curtailed at the discretion of the OME field representative.

Recommendations

A modified drilling program on the Merritt prospect is recommended to further explore the mineralized sedimentary rocks, following generally the lines of the revised program proposed by the applicant. The justification is based on the following criteria:

1) The shallow depth to copper- and silver-bearing strata of ore grade, as demonstrated by the applicant's preliminary drilling in the area. Overburden ranges from 0 to 90 feet, with most of it less than 40 feet.

2) The copper and silver are disseminated through lenticular beds ranging from 1 to 9 feet thick, which is sufficiently thick for profitable exploitation with heavy earth-moving equipment. The ratios of overburden to thickness and grade of ore are favorable

in several areas, and unit volume costs for open pit mining are sufficiently low for a profitable operation.

3) The rock is friable, thus amenable to simple methods of disaggregation to recover the metals; the copper minerals and native silver can be extracted and concentrated at less expense than complex ores, so that mineralized rock of relatively low grade can be profitably mined.

4) Approximately one-third of the holes drilled by the applicant, at widely scattered points in the prospect area, encountered significant values in copper and silver. There is a fair probability that additional drilling, based on the results of earlier drilling will sustain a high rate of discovery.

Logical formulation of an exploratory drilling program on the Merritt prospect requires the assignment of priorities. Weighing the generally low grade and disseminated character of the deposits against the thickness of overburden suggests that the relatively shallow deposits should be explored first. In addition, the mineralized areas should be explored in a logical sequence so that a given area may be related to adjacent areas as closely as possible with the consequence that the trends of the deposits may be recognized and pursued to advantage. The areas recommended for further exploration in order of priority are:

1. The area described as P-4 by the applicant, including the company drill holes P4, P4A, P4B, P4C, P4H, and P4I, in the north central part of section 18 (Applicant's Stage 2).

2. The area around company drill hole P-9, inasmuch as it is a logical extension of the P-4 area to the south, located in the SE-1/4, NW-1/4, sec. 18 (Applicant's Stage 4).

3. The area around company drill hole P-3A, located in NW-1/4, SE-1/4, sec. 18 (Applicant's Stage 5).

4. The area around company drill hole P-11, in the west central part of sec. 18 (Applicant's Stage 3).

5. The area around company drill hole P6A, in the south central part of sec. 18 (Applicant's Stage 6).

6. The area around company drill holes B-2 and B-6 in the southwest part of section 7 (Applicant's Stage 1).

The exploration program in each area can be divided into two related phases, with the second phase dependent on the first phase. They are:

Phase I. A closely spaced grid pattern of drilling about the earlier company drill holes to obtain the pattern of distribution of the copper and silver deposits.

Phase II. Drilling outward from the grid pattern of Phase I, as justified by the results, to determine the extension of significant copper and silver values, and if possible to define the trends of ore channels. This drilling might involve a fence pattern or expanded grid with greater spacing.

Drilling under Phase I for each area can be designed fairly rigidly, but the drilling under Phase II must necessarily be flexible to take advantage of the results obtained under Phase I.

OME-1 - P4-Area -- Total 1,000 feet of core drilling.

Phase I -- It is proposed that 19 holes averaging about 25 feet in depth be core drilled as shown on Sketch Map No. 1, 8 holes of which would surround the company drill holes P4, P4H, and 11 holes would surround company drill holes P4B and P4C. Mineral-bearing strata, so far as known, ranges from 5 to 28 feet below the surface in this area. It is recommended that hole No. 13 between P4B and P4C be drilled first for 50 feet to explore for other possible copper- and silver-bearing strata to that depth. Company holes, D, E. F, G, and J plotted on Sketch Map No. 1 show no significant mineral values at shallow depth, and consequently roughly delimit the southeastern extent of the deposit. Total amount of drilling in Phase I would be 500 feet.

Phase II -- With due consideration for topographic relief and its effect on the lateral projections of mineralized strata, it is proposed that as many as another 20 holes be allowed under Phase II, averaging 25 feet each for a maximum of 500 feet. These additional holes would test the extension or continuity of mineralized strata having significant values that may be penetrated by holes under Phase I. Each hole will be located not less than 100 feet nor more than 200 feet from the nearest ore-bearing hole drilled under Phase I. Succeeding holes might be drilled beyond the initial holes under this second phase to explore the trend or limits of mineralized ground within the total footage permitted.

OME-2 - P9 Area -- Total 700 feet of core drilling.

Phase I -- It is proposed that 6 holes be core drilled to an average depth of 30 feet in an hexagonal pattern about company drill hole P9 as plotted on Sketch Map No. 1. They should be no closer than 100 feet from drill hole P9 nor each other, and not farther apart than 150 feet. Total footage would be about 200 feet.

Phase II -- If warranted by the results of drilling under Phase I, as many as 20 additional holes averaging 25 feet deep are proposed to explore the extensions of mineralized strata having significant values. The holes would be located on rays having hole P9 as center and passing through the mineralized holes drilled under phase I, on a modular interval of at least 100 feet but not over 150 feet. The total amount of drilling under phase II is 500 feet. The drill holes should be located with due consideration for the effect of surface erosion (i.e., the intersection of mineralized strata with the surface of the ground).

OME-3 - P3A Area -- Total 1,000 feet of core drilling.

Phase I -- Seven core holes are proposed to be drilled to an average depth of 40 feet, as laid out by the applicant on 100 foot centers and shown on Sketch Map No. 2. An eighth hole proposed by the applicant is eliminated as being too close to the barren company hole P3. Silver in company drill hole P3A is present immediately below the surface of the ground, so care must be exercised to determine whether or not holes 6 and 7 need to be drilled; this can be determined from the results of drilling

holes 1 through 5 first. Total amount of preliminary drilling would be 280 feet.

Phase II -- An expanded grid or fence pattern of drilling is recommended if significant amounts of copper and silver are encountered by the Phase I drilling. As many as 18 drill holes averaging 40 feet and totaling 720 feet might be justified. A modulus of 100 to 150 feet between holes should be used, at least initially. If a trend of channel of ore-bearing sandstone is indicated by early holes in Phase II, an interval of 200 feet between drill holes may suffice. Some footage may be available from the P9 or P3A programs, depending on drilling results to explore by shallow and widely spaced fence drilling (400 foot modulus) the country between the P3A and P9 areas.

OME-4 P11 Area -- Total 1,600 feet of core drilling.

Phase I - Six core holes are proposed to be drilled in an hexagonal pattern about company drill hole P11 as shown on Sketch Map No. 3. The first hole should be drilled to a depth of 60 feet. If significant mineralized rock is encountered at depth, the remaining 5 holes should be drilled accordingly; if no significant values are found, the remaining holes should be drilled no more than 30 feet. They should be spaced not less than 100 feet from hole P11 and each other, but not more than 150 feet.

Four holes, 7 through 10, should be drilled around company drill hole P-8 on N-S and E-W axes as shown on Sketch Map No. 3 to

an average depth of 60 feet. They should be spaced not less than 100 feet from hole P-8 but not more than 150 feet.

The total amount of drilling in Phase I ranges from a minimum of 450 feet to a maximum of 600 feet.

Phase II -- If the results of the drilling under Phase I warrant it, up to 1,000 feet of drilling is proposed under Phase II. The drill holes should be so placed as to explore the extension of copper- and silver-bearing sandstones containing significant values using a grid or fence pattern with spacings of 100 to 150 feet. Depth of these holes would range from 30 to 60 feet each.

OME-5 - P6A Area -- Total 520 feet of core drilling.

Phase I -- Six holes are proposed to be drilled in an hexagonal pattern around company drill hole P-6, as shown on Sketch Map No. 4, to an average depth of 20 feet. They should be spaced at least 100 feet, but not more than 150 feet from hole P-6 and from each other. Care should be exercised in drilling holes 5 and 6 to account for the effect of topographic relief on drill-hole depth to mineralized strata. For this reason the holes should be drilled in consecutive order of numbers as shown. Total amount of drilling under this phase would be 120 feet.

Phase II -- If drilling is successful in discovering significant values of copper and silver under phase I, it is proposed that more drilling be done on a grid or fence pattern outward from the center of mineralization. A maximum of 400 feet could be allotted to this phase, or as many as 20 drill holes averaging 20 feet deep. Depending on the results as drilling progressed,

some footage might be used for widely spaced holes to explore the areas between company holes P6A, P3A, and P8.

OME-6 - B2A Area -- Total 1,440 feet of core drilling.

Phase I -- Because of the relatively greater depth of drilling to mineralized strata and the marginal values for copper encountered in company drill hole B-2, it is proposed that the area around hole B-2 be explored initially by only 4 holes, each 90 feet deep, located on E-W and N-S axes and spaced at least 100 feet but not more than 150 feet from hole B-2. Total amount of drilling in this phase is 360 feet. The thin intercept of silver-rich strata in hole B-6 does not of itself warrant further drilling in its vicinity under Phase I; the same logic applies to the area around hole B-11 and its general lack of copper or silver values.

Phase II -- If the results of drilling under Phase I are favorable ,it is proposed that further exploration be carried out by grid or fence drilling. As much as 1,080 feet of additional drilling might be authorized. The location and depth of each hole will be based on data from previously drilled holes but no hole will go deeper than 90 feet. The holes should be spaced at least 100 feet apart but not more than 150 feet.

The total amount of drilling recommended under Phase I of the proposed drilling program is 2,060 feet. This would represent a minimum of drilling in 6 separate but contiguous areas. Phase II of the proposed program would be entirely dependent on the information gained from the Phase I drilling. The maximum amount of drilling that conceivably could be done under Phase II amounts to 4,200 feet.

The amount of drilling in each area and the totals are recapitulated below:

Area	No. of holes	Footage Phase I	No. of holes	Footage Phase II	Total
P4	19	500	20	500	1,000
P9	6	200	20	500	700
P3A	7	280	18	720	1,000
P11	6	600	20±	1,000	1,600
P6A	6	120	20	400	520
B2	4	360	12+	1,080	1,440
	48	2,060	110	4,200	6,260

It is suggested that drilling might be conducted in two or more areas concurrently, as each area would be considered independent of the others, at least in the earlier phase. Some widely spaced exploratory drilling between areas may become desirable in more advanced stages of the program.

The applicant has suggested, in the revised proposal submitted, that core drilling be reserved for drilling through the "target horizon or horizons of probable mineralization. Intervals which are known to be barren" would be rotary drilled rather than cored. It should be recognized, however, that not enough is known about the deposits at this time to make firm judgements or predictions about which strata will or will not contain significant mineral values. Besides, the lenticular nature of the fluviatile sandstone beds makes predictions very uncertain. All the holes, for these reasons,

should be core drilled so that the cores may be studied and adequately sampled.

Drilling costs range from $5.60 per foot, estimated by the applicant (using his own crew and driling equipment), to $6.00 and $6.40, bid respectively by E. J. Longyear Co. and Joy Manufacturing Co. The applicant apparently is ready to stand the cost of preparing drilling sites and access roads as well, for no bulldozer costs for such work are listed in the original cost summary submitted by the applicant. Comparative costs listed below for the the total drilling program show that Longyear and Joy drilling bids are fairly close, with Joy Manufacturing Company about $1,810 less.

Joy Manufacturing Company

6,250 NX wire line drilling @ $6.40/ft.	$40,064.00
Mobilization -- lump sum	500.00
Standby time @ $12.00/hr. (50 hrs.?)	600.00
8 mos. water truck rental @ $300.00/month	2,400.00
plus 2400 miles @ $.15/mi. (300 mi./mo. est.)	360.00
Casing lost in hole @ $3.00/ft.	
Estimate 200 feet	600.00
	$44,524.00

E. J. Longyear Company

6,260 NX wire line drilling @ $6.00/ft.	$37,560.00
Mobilization	845.00
2 vehicles (minimum) from Phoenix to Paoli & return	
940 miles x 2 vehicles x 2 round trips x $.15/m.	564.00
Moving, setting up, installing & removing casing,	
standby, etc.	
Estimate 300 hrs. @ $15.30/hr.	4,590.00
8 mos. water truck rental @ $175.00/mo.	1,400.00
plus 2400 miles @ $.20/mi. (300 mi./mo. est.)	480.00
Reaming @ $2.95/ft. Estimate 100 ft.	295.00
Casing or pipe lost in hole (charged at cost)	
200 ft. @ $3.00/ft. (est.)	600.00
	$46,334.00

Although the per foot cost of drilling by the Joy Company is higher, it appears to include moving and setting up of the drill, cementing, installing and removing casing, etc., for which the Longyear Co. makes a separate charge. It is nearly impossible to make a firm estimate with respect to these items in the number of hours involved. The difference in the bids appears to lie principally in this category; Longyear had charged for mileage of personnel, equipment and vehicles from Phoenix to Paoli and return, and more for mobilization, but these costs are balanced by higher costs for water truck rental by Joy.

For the purpose of estimating total costs of the proposed drilling program the figures furnished by the Joy Manufacturing Co. are accepted as the lowest commercial bid. The estimated total cost for drilling is shown as the first item in the summary below. Duration of project is estimated to be 8 months unless 2 drills are used.

Summary of Project Costs

1.	Core drilling, 6,260 ft. (See itemized cost of Joy bid above)	$44,524.00
2.	Assays, 1,200 samples @ $3.00 ea. avg.	3,600.00
3.	Core boxes, 522 @ $1.00	522.00
4.	Salaries, etc. for technical support --	
	a. Geologist, $1050/mo. x 8 months	8,400.00
	b. Field assistant $400.00/mo. x 8 months ?	3,200.00
	c. Living expenses, $10.00/day x 2 x 245 days	4,900.00
	d. Travel (vehicle) 1,000 mi./mo. @ $.10mi. x 8 mos.	800.00
	e. Air travel from company office, Glenwood Springs to project area and return $125.00 x 2 x 2 trips	500.00
5.	Miscellaneous (payroll taxes, shipping charges, hole covers, field and office supplies	1,500.00
	Estimated Total Cost	$67,946.00

Item 2 of estimated costs for assays assumes for the purposes of calculation, that 2 determinations would be made on each sample. As was pointed out in the discussion of the mineral deposits, however, copper and silver do not commonly occur together. It is altogether likely that many samples will have only one determination, for which assay laboratories normally apply an extra charge of 50 cents.

A typical assay schedule includes $1.50 for a single determination and $2.50 for gold and silver. Assay of a single sample for gold, silver and copper costs $4.00. Gold is generally negligible in the Merritt Prospect, and except for an occasional check assay is not worthwhile. The nature of the deposits may require that more samples be assayed for a single metal than is presently indicated, with the overall effect of increasing assay costs.

Living and travel expenses under Item 4 may be underestimated, but comes close to the estimate made by the applicant. Miscellaneous expenses of $1,500.00 under Item 5 is shear guesswork; it just seems like a more realistic figure than the company's $2,635.00

Conclusions

The Merritt Prospects of the Wolf Ridge Mineral Corporation east of Paoli, Oklahoma contain copper and silver-bearing, friable sandstone and silty sandstone beds at shallow depths of 2 to 90 feet. Copper occurs mainly in the sulfide mineral, chalcocite, but also in the carbonate mineral, malachite, close to the surface; silver is in the native form. The minerals occur as fine to very fine grains that are disseminated in the interstices of the host rocks. Copper values range from submarginal (below 0.3 percent) to a rare high of nearly 20 percent per ton, but the mean range of significant values is from 0.71 to 3.36 percent copper per ton. Significant silver values range from 0.5 to a high of 21 ounces per ton, but the highest weighted averages from any hole is 4.91 ounces per ton. Copper and silver of ore grade do not seem to occur together in the

same bed; silver commonly, although not everywhere underlies cuprous mineralized rocks.

Separate calculations of inferred copper and silver reserves based on the data available from the company drilling done in 1967 show 29,587 tons of rock containing 682,900 pounds of copper, and 40,730 tons of rock containing 72,180 ounces of silver. Gross value of the deposits is $445,615, with copper accounting for $286,826 or 65 percent of it, and silver $158,789 or 35 percent. This might have a bearing on the percent participation allowed by the government if financial assistance is favorably considered.

The applicant originally requested assistance for a program of widely distributed holes in the Paoli area, designed to find unsuspected deposits of copper and silver in the sandstone beds. This would have been followed by more intensive drilling around the discovery holes. The first part of this program constitutes prospecting and would not be eligible for OME assistance. The second part of the applicant's proposed program has some merit, so the applicant was asked to revise its proposal to conform more closely with OME requirements. The revised program submitted by the applicant includes grid drilling in 8 areas in the vicinity of earlier drilled holes that contain significant copper and silver values.

The OME representative recommends a diamond drilling exploration program on the Merritt Prospect, modified from the original program proposed by the applicant. It involves a total of 6,260 feet of vertical core drilling in 6 separate but contiguous areas. The areas were drilled by the applicant in 1967 and sandstone beds containing

significant amounts of copper and silver were discovered at shallow depths. The applicant, however, needs assistance to explore the lateral extend and continuity of the deposits, and to outline possible reserves in copper and silver that would warrant development of the deposits. The drilling program is divided into 2 phases for each area. Phase I is rigidly planned to explore with a minimum of vertical holes the immediate area about the applicant's earlier discovery holes. Phase II is based on the findings of Phase I; if warranted, drilling would be designed to expand on the trends indicated under Phase I, by grid and/or fence patterns of drilling. Most of the drilling involves a modular interval of at least 100 feet but not more than 150 feet between drill holes. An hexagonal, square, or polygonal pattern is designed for Phase I of each area depending on the number and arrangement of discovery holes.

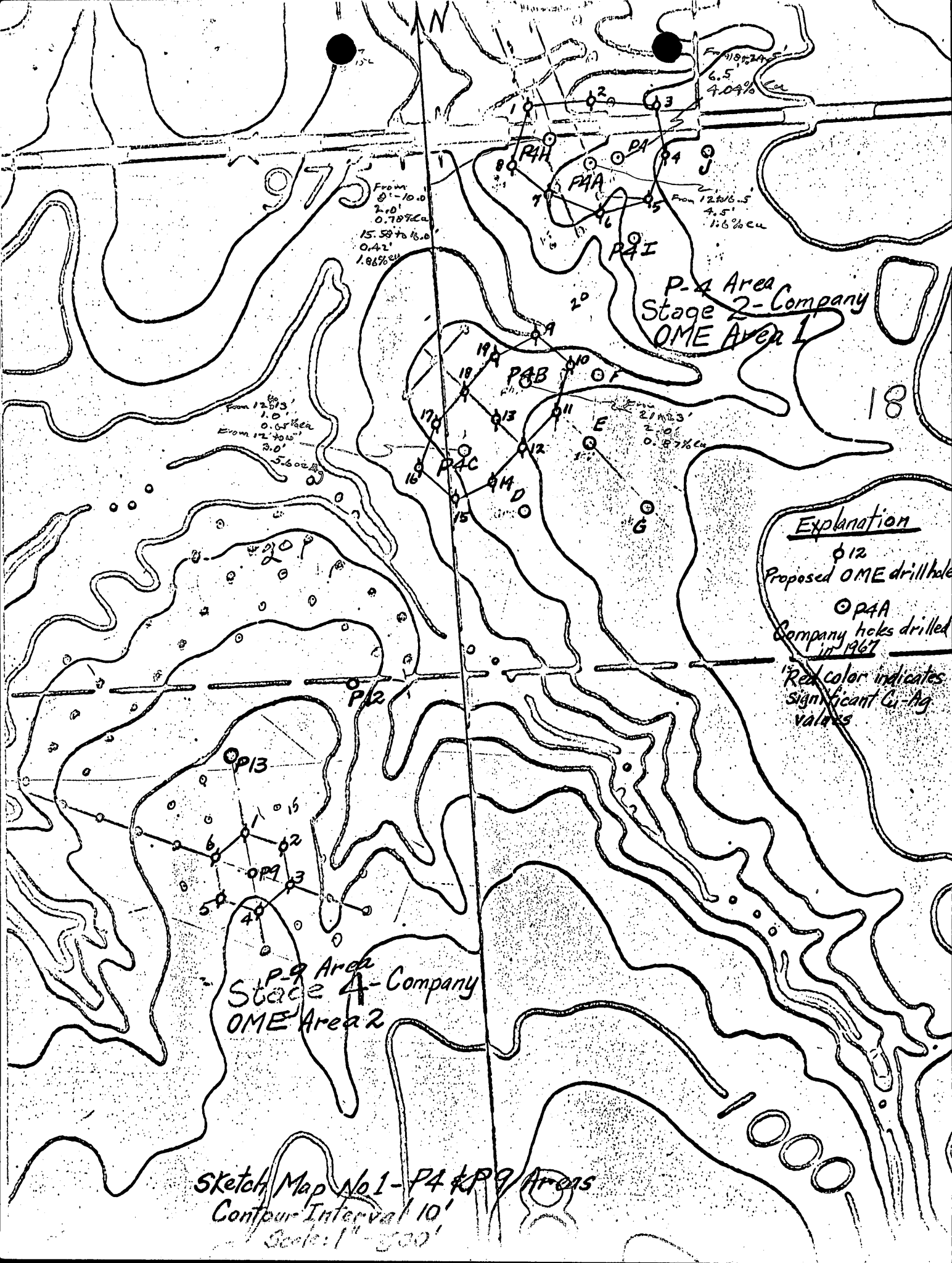
Phase I of the drilling program proposes a minimum of 48 holes to explore the 6 areas, with a total of 2,060 feet. This represents roughly one-third of the total footage possible under the program, and would cost an estimated $23,000. Phase II, if fully carried out would involve roughly 110 holes with a total of 4,200 feet of drilling, costing $45,000. These figures do not take into account preparation of drill sites and access roads, which the applicant has indicated it would bear itself. The maximum amount of drilling under Phase II probably will not be realized, but some exploratory holes may be suggested between areas or along certain mineralized trends as the program develops.

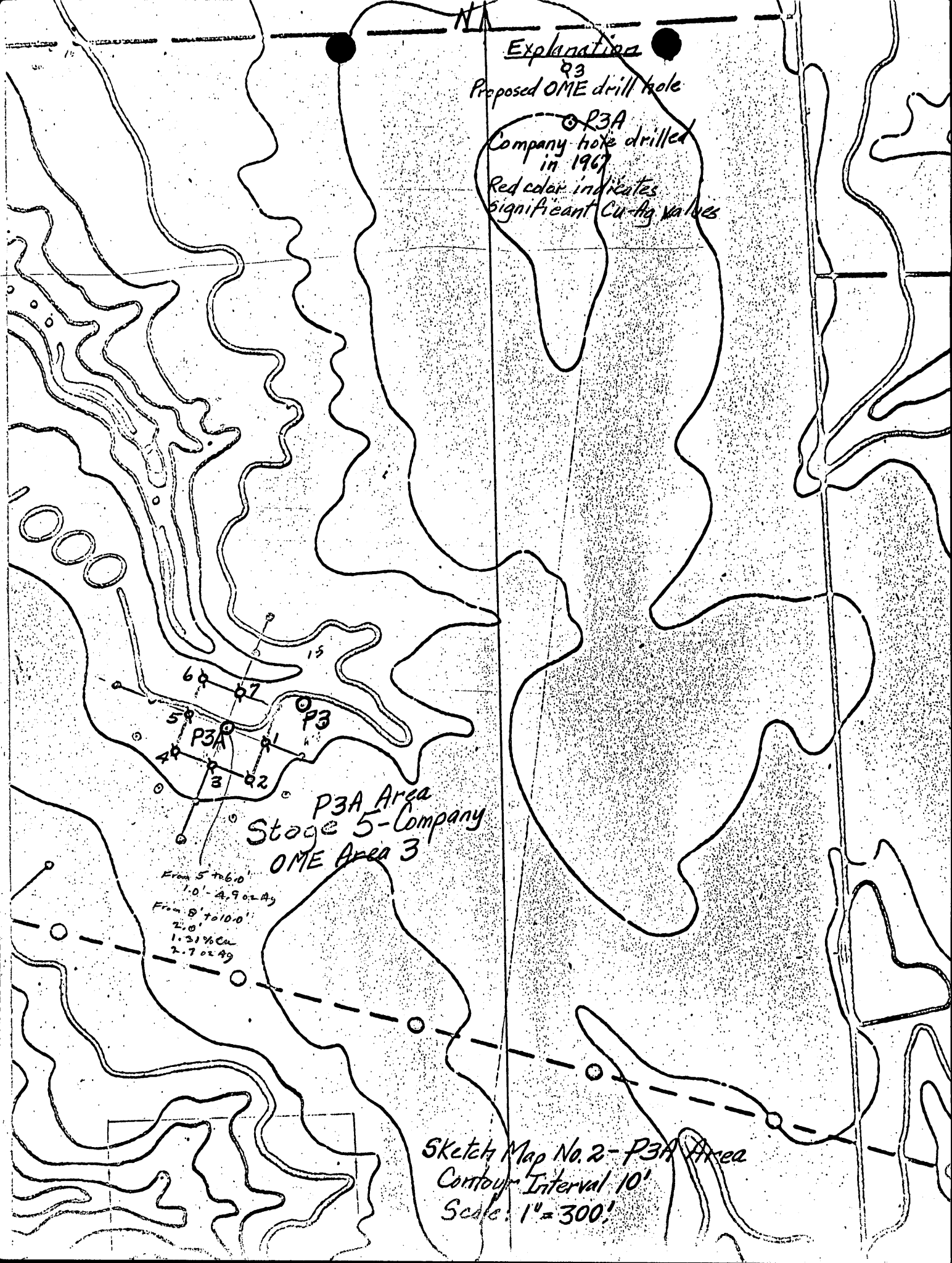
There is a fair probability that Phase I of the drilling program will discover considerably more new reserves of copper and silver than those presently discovered by the applicant. If such results are discovered under Phase I, Phase II of the drilling program could further delineate the extent of the deposits of low-grade copper and silver.

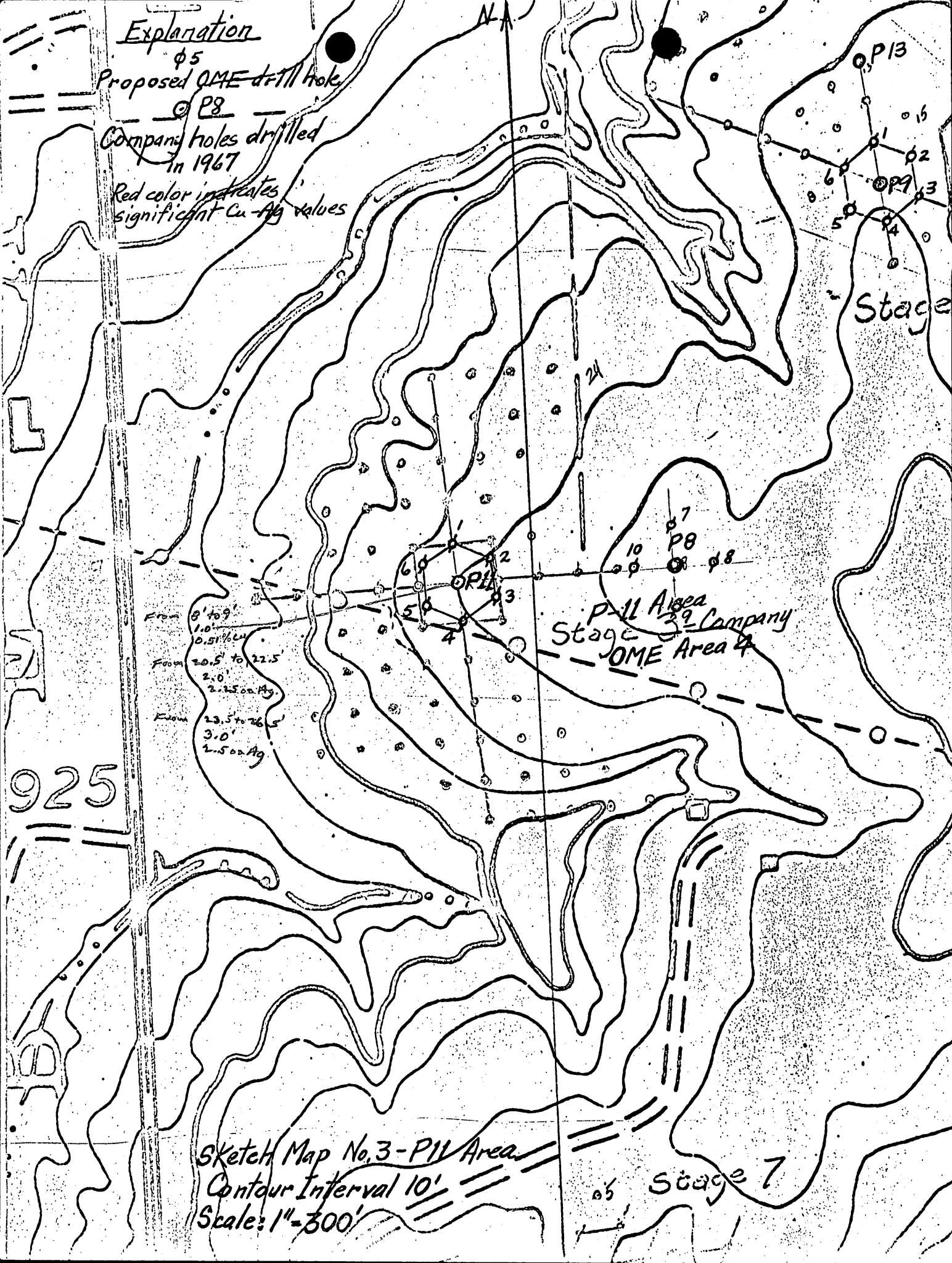
References Cited

Dott, Robert H., 1927, Garvin County: in Oil and Gas in Oklahoma, in Oklahoma, Vol. II, Oklahoma Geological Survey, Bull. No. 40, p. 119 - 43 [1930].

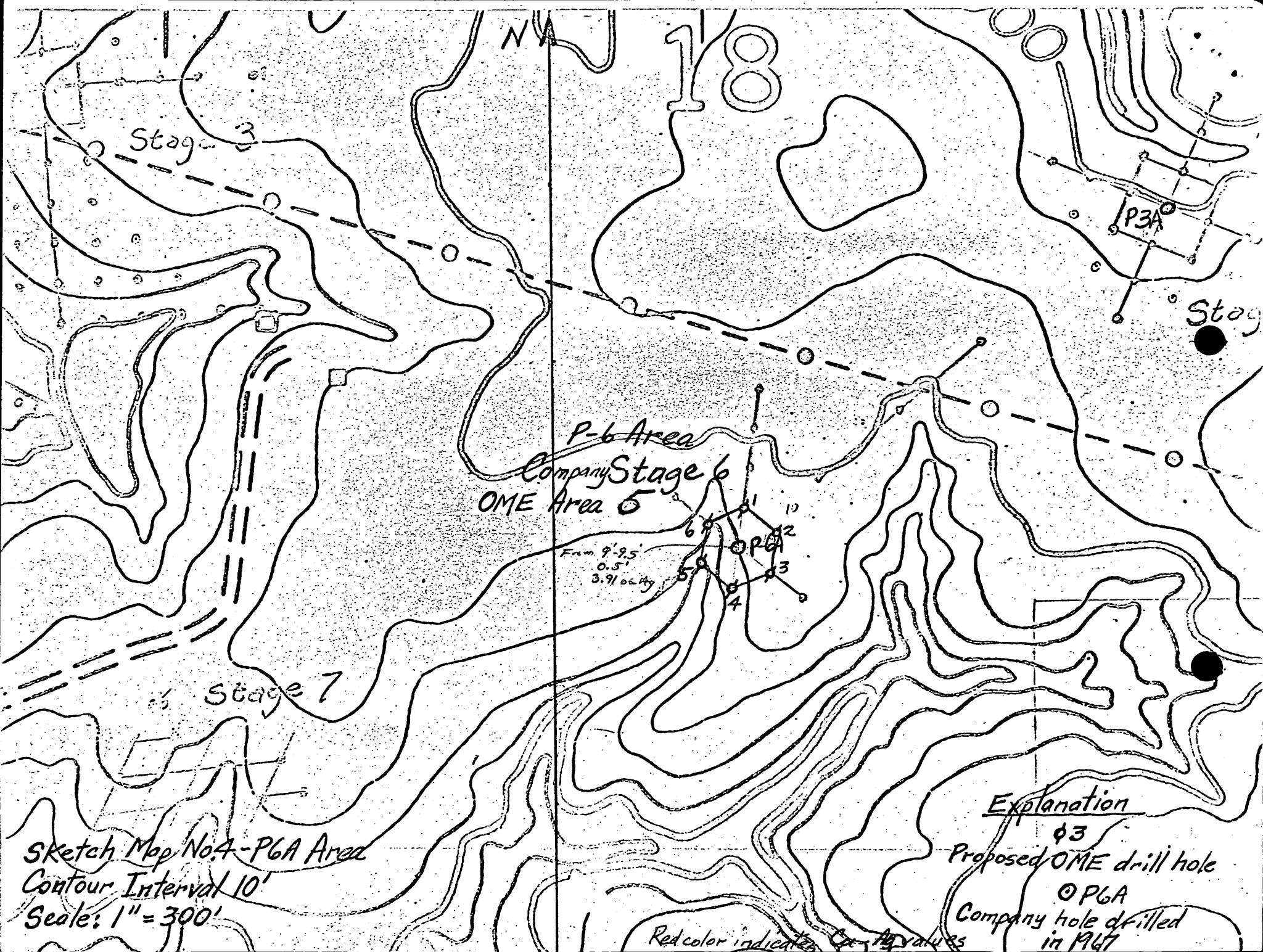
Hicks, I. Curtis, 1956, Paul's Valley Field, Garvin County, Oklahoma: Petroleum Geology of Southern Oklahoma, Vol. I, Am. Assoc. Petroleum Geologists Symposium, p. 337-54.


N
975
P-4 Area
Stage 2-Company
OME Area 1
P4H
P4A
P4I
P4B
P4C
P12
P13
P9
P-9 Area
Stage 4-Company
OME Area 2
Explanation
Proposed OME drillhole
P4A
Company holes drilled in 1967
Red color indicates significant Cu-Ag values
1000
Sketch Map No 1 - P4 & P9 Areas
Contour Interval 10'
Scale: 1" = 500'

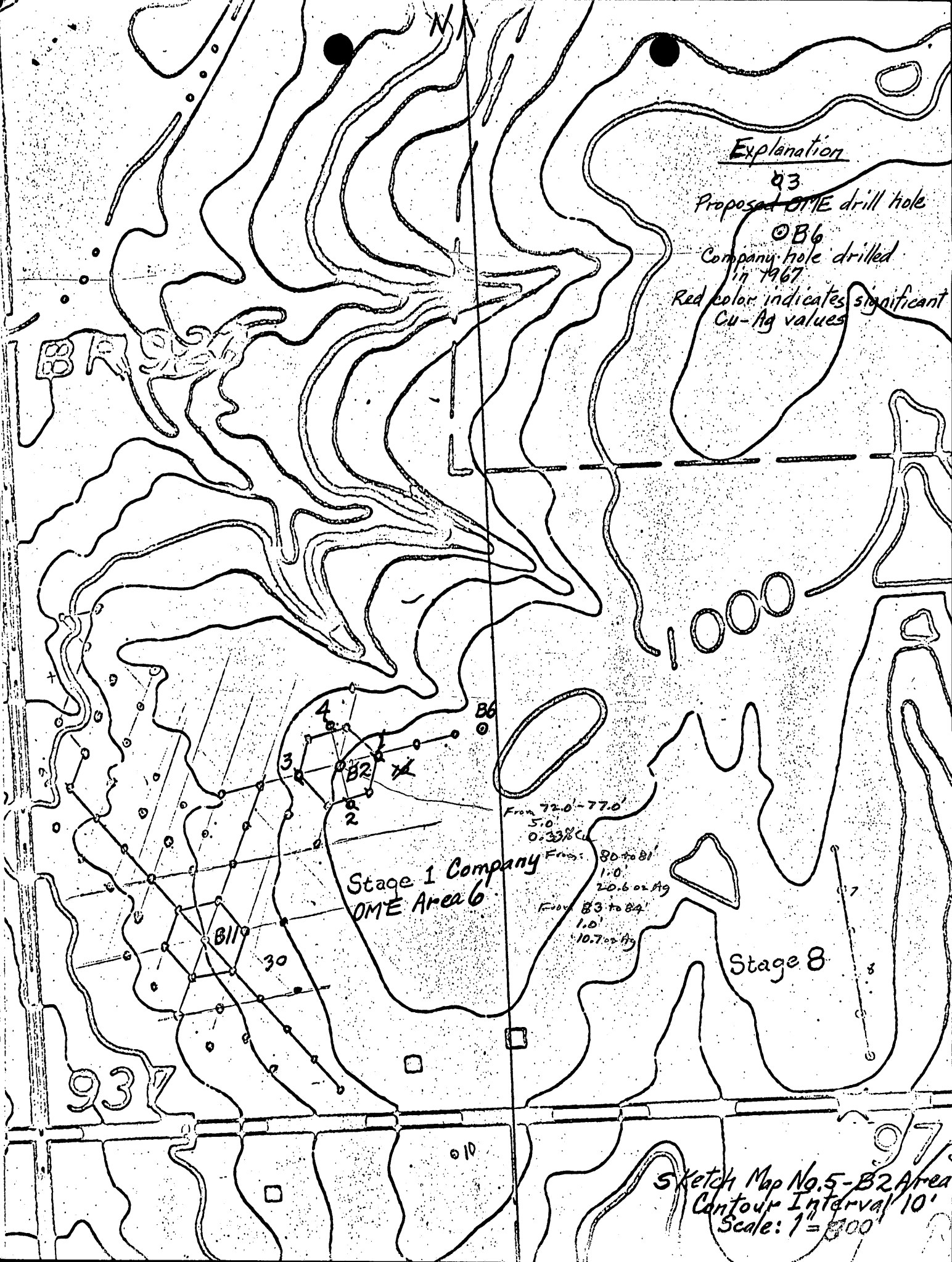

N
Explanation
P3
Proposed OME drill hole
P3A
Company hole drilled in 1967
Red color indicates significant Cu-Ag values
15
6
7
5
P3A
P3
4
1
3
2
P3A Area
Stage 5-Company
OME Area 3
From 5' to 6.0'
1.0' - 4.9 oz Ag
From 8' to 10.0'
2.0'
1.31% Cu
2.7 oz Ag
Sketch Map No. 2 - P3A Area
Contour Interval 10'
Scale: 1" = 300'



Sketch Map No. 3 - P11 Area
Contour Interval 10'
Scale: 1" = 300'



Sketch Map No.4 - P6A Area
Contour Interval 10'
Scale: 1" = 300'



Sketch Map No. 5 - B2 Area
Contour Interval 10'
Scale: 1" = 800'

Office of Minerals Exploration

Building 53 Room 203

June 17, 1968

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Mr. Zen Merritt
Wolf Ridge Minerals Corporation
P. O. Box 1008
Glenwood Springs, Colorado 81601

Subject: OME-6707 (Silver-Copper)
Wolf Ridge Minerals Corpoation
Merritt Project
Garvin County, Oklahoma

Dear Mr. Merritt:

This is to confirm our telephone conversation of this morning, for you to meet with Mr. Jacques Robertson Thursday, 2 o'clock P.M., in this office to discuss the above-stated subject.

Sincerely yours,

J. William Hasler

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

cc: Chief, OME ✓
OME-6707
OME chron
Mr. Hasler

Copy to R-III

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1008 • Glenwood Springs, Colorado 81601

April 18, 1968

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Mr. Harold Kirkemo, Assistant Chief
Office of Minerals Exploration
U. S. Geological Survey
Washington, D. C. 20242

Re: OME-6707 (Copper-silver)
Wolf Ridge Minerals Corp.
Merritt Prospect
Garvin County, Oklahoma

Dear Sir:

Copies of your Performance Bond and Affidavit of Individual Surety forms have been received by this office.

Since it would be both time consuming and costly to obtain all the required Lien and Subordination Agreements signed by the owners of the various properties, Wolf Ridge is both willing and able to furnish the required Performance Bond covering the Government's share of the estimated cost of the work in the event of a contract. St. Paul Fire & Marine Insurance Co. of Minnesota will issue this bond.

As your letter of April 4 requested only a statement of whether or not Wolf Ridge was willing and able to furnish this bond, we will take no further action until we hear from you.

Sincerely yours,

David P. Phillips

David P. Phillips

DPP:ms

Copy to R-III

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1008 • Glenwood Springs, Colorado 81601

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April 16, 1968

6707

Mr. Harold Kirkemo, Assistant Chief
Office of Minerals Exploration
U. S. Geological Survey
Washington, D. C. 20242

Dear Sir:

Enclosed are two copies of the drilling bid just received from Joy Manufacturing Company. I hope this will furnish the required data.

You may be interested in knowing that we have also found anomalously high gold values in our assays of some of the Paoli cores. These have not been of commercial significance to date, but they were of sufficient interest to initiate study by the Heavy Metals Branch of the U. S. Geological Survey.

Please contact us if you need additional data.

Very truly yours,

WOLF RIDGE MINERALS CORPORATION

Z. S. Merritt

ZSM:rd

(219) 872-7221

JOY MANUFACTURING COMPANY
900 WOODLAND AVENUE • MICHIGAN CITY, INDIANA 46360

April 12, 1968

Wolf Ridge Minerals
Post Office Box 1008
Glenwood Springs, Colorado 81601

Attention: Mr. Z. S. Merritt

Dear Mr. Merritt:

Thank you for inviting us to bid on your proposed drilling program near Pauls Valley, Oklahoma. Our prices are based on the information contained in your letter dated April 2nd and on the information which you provided on our Core Drilling Questionnaire.

We submit the following prices:

Mobilization - Lump Sum	$500.00.
NX Wire Line Drilling - 0. to 750. feet	$6.40 per foot.
Standby Time for your convenience	$12.00 per hour.
Casing lost or ordered left in place	$3.00 per foot.
Water Truck Rental	$300.00 per month plus 15¢ per mile.

Wolf Ridge Minerals will furnish core boxes.

Wolf Ridge Minerals will make and maintain suitable access roads to the drill sites.

If our prices are acceptable, we will be ready to start the work three (3) weeks after notice to proceed.

Yours truly,

JOY MANUFACTURING COMPANY

J. M. Murray, Manager
Contract Drill Division

JMM:rh

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
4/16/68	Peterson	120
		120
	(on leave)	110
4/16	Cal	220
		120M

APR 16 1968

AIRMAIL

Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado

Re: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Gentlemen:

This will acknowledge your letter of April 10, 1968, enclosing additional information in support of the subject application for financial assistance.

The application is now being referred for further consideration to Mr. J. William Hasler, Field Officer, Region III, Office of Minerals Exploration, Room 203, Building 53, Denver Federal Center, Denver, Colorado 80225.

Mr. Hasler will notify you if he requires additional information and to arrange for an on-site examination of the property, if necessary.

A Standard Performance Bond Form 25, and a Standard Affidavit of Individual Surety Form 28 are enclosed for your study. We regret that these forms were not forwarded with our letter of April 4.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo, Assistant Chief
Office of Minerals Exploration

Enclosures

cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Mr. Peterson
Region III

ECPeterson/bsl 4/16/68

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
4/16/68	Peterson	120
		120
	(on leave)	110
		220

120M

APR 16 1968

AIRMAIL

Memorandum

To: Field Officer, Region III

From: Assistant Chief
Office of Minerals Exploration

Subject: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

The subject application is referred to Region III for a field examination if warranted, and recommendations.

The Applicant has furnished most of the information requested in our letter of April 4. Still lacking, however, is the one additional drilling bid, and Lien and Subordination Agreements. In this connection, it appears that the Applicant will provide a Performance Bond in lieu of the Agreements if a contract is granted.

Based on the drill core data furnished, copper is the major eligible metal present, and it is doubtful whether the property can qualify for Government assistance at 75 percent allowed for silver. Although this is apparently a low-grade deposit the possibilities are interesting.

We note that the Applicant proposes two separate phases or stages of exploration. As stated in the application, the first phase is to locate additional areas of mineralization. This appears to be prospecting and may not be eligible for OME assistance.

A review of the Applicant's revised cost estimates indicates that allowances for personal services and related costs are high, and would necessarily need trimming if a contract is recommended.

For your records, we are enclosing the duplicate copy of the material submitted by the Applicant in response to our letter of April 4.

Harold Kirkemo

Harold Kirkemo

Enclosure

cc: Economic Geology File
OME File
OME Reading File
Mr. Peterson - 130
ECPeterson/bsl 4/16/68

Office of Minerals Exploration
Building 53 Room 203

April 15, 1968

~~120~~
120 M
110
~~120B~~

Mr. Irvin Nielson
Wolf Ridge Minerals
P. O. Box 1008
Glenwood Springs, Colorado 81601

Subject: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Project
Garvin County, Oklahoma

Dear Mr. Nielson:

I received your letter dated April 8, 1968, also addressed to Mr. Dan Shawe and Mr. J. D. Vine, both of the U. S. Geological Survey.

You requested the Survey's assistance in a study of the Merritt "red bed" sandstone copper deposits in Garvin County, Oklahoma, and requested that the discussion of the deposits be considered "company confidential" and that no data be published.

Insofar as the Office of Minerals Exploration is concerned "all" applications are considered as company confidential, as I have informed you during our several conferences in this office. During the course of processing of OME applications this office confers with the other geologists within the Geological Survey, especially those that have mapped or studied, or who are otherwise familiar with a particular property. We feel it is good practice to obtain as much geologic data and knowledge as possible about an area in order to make a better and more knowledgable appraisal of a property. Although we do this all information in our files is still considered as company confidential. The Survey geologists we confer with are informed of this and they act accordingly.

No information obtained as a result of any Office of Minerals Exploration contract can be published by the Geological Survey without formal consent of the party with whom the contract was executed.

Sincerely yours,

J. William Hasler

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

cc: Mr. D. R. Shawe
Mr. J. D. Vine

Chief, OME
OME chron
Wolf Ridge Application
Mr. Hasler

944

OME Region III
RECEIVED
APR 17 1968
Denver, Colorado

April 17, 1968

Mr. Irvin Nielson
Wolf Ridge Minerals Corp.
P.O. Box 1093
Glenwood Springs, Colorado 81601

Dear Mr. Nielson:

We do not now have sufficient staff in the Heavy Metals Branch to become involved in a study of the sedimentary copper deposit Mr. Merritt talked to me about. However, in view of the fact that Mr. J. D. Vine of the Geological Survey has agreed to have some work done on your drill cores, and because you have applied to Mr. J. W. Hasler of OME for assistance, perhaps you will be able to get the help you had hoped for from the Survey.

We in Heavy Metals Branch are certainly interested in the deposit described to us by Mr. Merritt and I hope to be able to keep informed of whatever work that the Survey does through Mr. Vine and Mr. Hasler. Needless to say I will handle the information, as they will, as "company confidential."

Sincerely yours,

Daniel R. Shawe, Branch Representative
Branch of Heavy Metals

cc:
DRF
Economic Geology RF
Br. of Heavy Metals RF
S. C. Creasey
J. W. Hasler
J. D. Vine
D. R. Shawe

DRS:jm

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1008 • Glenwood Springs, Colorado 81601

April 10, 1968

OFFICIAL COPY
O. M. E.
RECEIVED
APR 15 1968
INITIALS CODE
bel 130
on leave 120
110

Mr. Harold Kirkemo, Assistant Chief
Office of Minerals Exploration
U. S. Geological Survey
Washington, D. C. 20242

Re: OME-6707

Dear Sir:

In accordance with your correspondence of April 4, 1968, we submit the following:

1. Xerox copies (2) of our recent financial statement and audit (It should be noted that this financial statement shows the book value and liquid assets of Wolf Ridge Minerals Corporation but does not reflect the potential value of its various mineral assets.)

2. Xerox copies (2) of a drilling bid submitted by E. J. Longyear Drilling Company (Only one bid is submitted as the second bid has not yet been received.)

3. Xerox copies (2) of our letter soliciting a drilling bid from the Joy Manufacturing Co.

We did not receive the Standard Performance Bond Form 25 or the Standard Affidavit of Individual Surety Form 28 which were mentioned in your correspondence. We would appreciate receiving the forms as early as possible. Our standard lease form carries a 10-year primary lease period and is automatically extended by payment of yearly rentals. If required, we can post a bond, or we can put the 1968 rental and/or option payments in escrow until such time as the OME contract is completed or it is mutually decided to terminate a lease due to proven lack of mineral potential.

We believe that this mineral deposit is equally as important, economically, for silver as for copper. The economics shown in Table I of Item 3 of the loan application are based about equally on copper and silver values.

The highest silver assays were 10 and 20 ounces per ton in the B-2 corehole and are included in a minable interval of 5 feet averaging 7.4 ounces per ton. These values would be considered significant in most ore deposits. In relation to the national demand for silver, it is especially significant that this sedimentary prospect is both in a new horizon for silver exploration and also will be the nucleus of an entirely new mining district. The U. S. Geological Survey is currently engaged on a multi-million-dollar project to study related sedimentary deposits of silver and gold, in areas where results have been much less encouraging than those of our "Merritt" project.

In summary, we believe that our "Merritt" prospect should qualify as a silver prospect on the basis of its potential in opening up both a new source of silver and a new silver mining district, even though our results to date may be considered as secondary to copper.

In accordance with your request that we revise our cost estimate, a new cost estimate sheet is being submitted.

All our invoices and records are now in from our initial exploration project and we are able to better judge costs and timing for the proposed 1968 project. On the initial project, 2565 feet of core were cut in a period of 3 months at a contractor cost of $19,061.73; the drilling rate was 855 feet per month. We believe that with our operating experience in the area, more opportune field conditions, and a combination of auger and conventional drilling along with coring will combine to give us increased penetration efficiency. We therefore project our monthly penetration rate at 1000 feet, giving the project an estimated duration of about 7 months.

The combination of drilling methods mentioned above refers to instances when it may be more prudent to drill through known barren zones and then core objective zones, or to drill or auger through top soil or zones of poor recovery, especially near the surface.

We have altered our assaying program to include the entire 180 holes, instead of only 125 holes, but we feel we can reduce the number of assays per hole from 60 to 50 and still maintain adequate coverage.

Overhead and office expenses have been eliminated as you suggested and some consulting services are added. We hope this is more in line with your normal procedure.

If you need additional data, please contact us and we will submit them.

Yours very truly,

WOLF RIDGE MINERALS CORPORATION

Z. S. Merritt

ZSM:rd:ms
Encs.

WOLF RIDGE MINERALS CORPORATION

MERRITT PROJECT

COST SUMMARY

PERIOD: 7 months

(1)	TOTAL DRILLING	
	180 holes totaling 7350 feet of hole x $5.50/foot	$40,150
(2)	ASSAYING	
	180 holes x 50 assay/hole x $2.00/assay	18,000
(3)	FIELD GEOLOGY	
	(a) Geologist	
	$1200/month x 7 months	8,400
	(b) Field Assistant	
	$500/month x 7 months	3,500
	(c) Miscellaneous Field Expense	
	Core boxes, hole covers, freight, etc.	2,635
	(d) Living and Travel Expenses	
	(including rental vehicles)	10,080
(4)	CONSULTING EXPENSES	
	Engineering and Geologic Consultants	
	$75.00/day x 7 days/month x 7 months	3,675
	Living Expenses $16.00/day x 49 days	784
	Travel expenses, 8,000 miles x $.12/mile	960
(5)	MAIN OFFICE OVERHEAD EXPENSE	
	Bookkeeping and supplies, $100/month x 7 months	700
		$88,884

April 2, 1968

Joy Manufacturing Company
Contract Drilling Department
Michigan City, Indiana

Re: Solicitation of Core Drilling Bid

Gentlemen:

Wolf Ridge Minerals Corporation is contemplating a coring program for the coming field season to include approximately 7300 feet of NX coring in the area of Shawnee, Oklahoma. Most of the core holes will average less than 100 feet, although the occasion may arise wherein a hole would be carried to 700 feet.

The subject area is underlain by Permian "red beds" consisting of claystone, siltstone, and very friable, fine-grained sandstone.

We would appreciate your making a bid on the following basis:

To furnish one core rig equipped with 750 feet of wire line, core tools to include a Longyear NQ series core barrel, a driller, a helper, and a water truck.

We prefer your bid be made on a footage basis, but we will consider a combination footage-hourly bid.

Your completed form is enclosed.

Thank you for your consideration.

Yours very truly,

Z. S. Merritt

ZSM:ms
Enc.

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

March 15, 1968

Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado 81601

Attention: Mr. Irvin Nielsen,
Vice President

SUBJECT: DRILLING PROPOSAL COVERING YOUR PLANNED CONTINUATION EXPLORATORY WORK IN THE VICINITY OF PAOLI, OKLAHOMA

Gentlemen:

1. In response to your Mr. Merritt's letter request dated March 7, 1968, we are pleased to submit our unit price proposal to cover your continuation drilling program in the state of Oklahoma.

2. Our understanding of your program is as follows:

The minimum footage will approximate 7,000 linear feet in a series of NQ size drill holes of which none are expected to exceed 700 feet in total depth. Most of the holes will average less than 100 feet in total depth.

The formation and drilling conditions will be comparable to what was experienced on the program we just finished for you in the same general area.

The starting date will be April 1 or shortly thereafter.

3. For this program, we propose to furnish one truck-mounted drilling rig together with all the required accessory equipment including water and service vehicles.

Initially, we would operate the rig on a one shift basis, six days per week.

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 experience we gained in carrying out your last program, we are pleased to submit the following unit price proposal:

a) Mobilization and demobilization of personnel and drilling equipment.....$845.00 lump sum/rig plus 15 cents per mile, per vehicle, from our Phoenix location to jobsite and return.

b) Diamond, rotary or auger drilling (Rotary or auger drilling will be for collaring only) -

	NQ Size
0 to 500 feet in depth.....	$6.00 per foot
500 to 750 feet in depth.....	$6.45 per foot

c) Reaming, if required and where applicable, will be carried out in all sizes and depths at.....$2.95 per foot

d) Time spent by crews performing cementing activity, installing or pulling casing or performing other necessary hole stabilizing and hole plugging activity will be invoiced at.....$15.30 per hour with 2-man crew.

e) Time spent moving from hole to hole including rigging operations in excess of four allowable hours per hole will be invoiced at.....$15.30 per hour with 2-man crew.

f) Cement, drill mud, additives or other hole stabilizing or plugging material consumed in the program will be invoiced to you at our jobsite cost plus a 10% handling charge.

g) Casing or pipe lost or left in drill holes will be invoiced at our replacement cost, f.o.b. jobsite basis.

h) Standby time or delays for your convenience or for which you are responsible will be invoiced at.....$15.30 per hour for each 2-man drill crew.

i) Water truck service will be furnished on the following basis -

(1) Truck rental.....$175.00 per month plus 20 cents per mile traveled while engaged in water hauling activity.

(2) If because of expansion of program or otherwise, it should become necessary to hire a separate, full time water truck driver in order to properly supply the drill with water, it is understood that we will make a charge of $3.50 per hour to cover the individual's labor, payroll taxes, insurance and other related expenses involved.

(3) If the helper can be utilized in performing the water truck driving without subjecting the drilling operation to unusual delays, no charge will be made for his service.

(4) Any charges arising from the purchase of water at the source will become invoiceable to you.

(5) It is understood that you will construct and maintain, where required, the necessary access roads for use by the drill and water truck.

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

6. It is understood that if such should be required, you will construct the necessary drill sites involved.

7. Cores and/or samples of the material drilled will be turned over to your representative at the drill sites in containers furnished by you or by the Longyear Company as outlined above.

8. Statements will be rendered promptly at the end of each month covering all invoiceable operations performed during the month. Payment will become due upon your receipt of statement.

9. We appreciate the opportunity to submit this unit price proposal to you. We sincerely trust that we will be selected to carry out this additional drilling program for you.

Sincerely,

E. J. LONGYEAR COMPANY

J. R. Miller

Manager, Southwestern Zone
Contract Drilling Division

J.R.Miller:jag

ACCEPTED:

Company_____

By_____

Date_____

WOLF RIDGE MINERALS

Suite 110 Village Inn • Phone (303) 945-7457 • Post Office Box 1508 • Glenwood Springs, Colorado 81601

OME Region III
RECEIVED
APR 9 - 1968
Denver, Colorado

April 8, 1968

APR 11 1968
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JHP | 110
SO | 120 P

Mr. J. W. Hasler, Ofc. of Minerals Exploration
Mr. Dan Shawe, Bldg. 25, Federal Center
Mr. J. D. Vine, Bldg. 25, Federal Center
Denver, Colorado 80225

Re: OME-6707

Gentlemen:

Wolf Ridge desires to have the U.S.G.S. review its information on its "Merritt" project with the goal of arriving at a geologic theory of how the deposits originated. Our interest in the origin of the deposits is directly related to use of that knowledge in predicting where we may find similar deposits. If the U.S.G.S. agrees to freely discuss these aspects of the deposits with us and agrees not to publish these data or speculations on the origin of these deposits for one year after Wolf Ridge has had the information, we will give the U.S.G.S. our full cooperation.

If we cannot have exclusive use of the results of the U.S.G.S. studies for the one year period, we will refuse to permit the U.S.G.S. studies and will employ a geochemist and do the same work privately.

We also request that the Office of Minerals Exploration does not give our information to anyone without our written consent.

We hope this letter makes our position crystal clear and hope that we can cooperate with the U.S.G.S. to advance the science without sacrificing the obligations of the company to its stockholders.

Yours truly,

Irvin Nielsen

Irvin Nielsen

IN:rd

4/11/68
Jim Vine & Hasler have additional background on this. Vine has corresponded with Nielsen concerning U.S.G.S. interest. Hasler will acknowledge this letter and assure Nielsen that no contact or any results are held confidential. JP

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 Garvin, State of Oklahoma, described as follows:[2] ~~in attached leases and land plat. Book and page number of the recording in the official records~~ of Garvin County, Oklahoma are shown on each attached lease form.

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

Wolf Ridge Minerals Corporation[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.)

None

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 11th day of March, 19 68.

Irvin Nielsen	(Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Samuel R. Freeman (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Irvin Nielsen (Name), who signed this agreement was then Vice Pres. and Manager (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.

(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:

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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

Wolf Ridge Minerals Corporation 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.)

None

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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 11th day of March, 19 68.

Irvin Nielsen (Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)	
Irvin Nielsen		
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	

I, Samuel R. Freeman (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Irvin Nielsen (Name), who signed this agreement was then Vice Pres. and Manager (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.

Samuel R. Freeman (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/

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Wolf Ridge Minerals Corporation 3/

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(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/

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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.)

None

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

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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 11th day of March, 19 68.

Irvin Nielsen (Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)	
	(Street) (City & State)	
(Seal)		
	(Street) (City & State)	
(Seal)		
	(Street) (City & State)	
(Seal)		
	(Street) (City & State)	
(Seal)		
	(Street) (City & State)	
(Seal)		

I, **Samuel R. Freeman** (Name), certify that I am the **Secretary** (Title—Secretary, etc.) of the corporation named herein; that **Irvin Nielsen** (Name), who signed this agreement was then **Vice Pres. and Manager** (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.

(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

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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

Wolf Ridge Minerals Corporation[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.)

None

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 11th day of March, 19 68.

Irvin Nielsen	(Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Samuel R. Freeman (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Irvin Nielsen (Name), who signed this agreement was then Vice Pres. and Manager (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.

(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 Garvin, State of Oklahoma, described ~~as follows:~~[2] in attached leases and land plat. Book and page number of the recording in the official records of Garvin County, Oklahoma are shown on each attached lease form.

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

Wolf Ridge Minerals Corporation[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.)

None

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 11th day of March, 19 68.

Irvin Nielsen	(Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)
	(Seal)	(Street) (City & State)

I, Samuel R. Freeman (Name), certify that I am the Secretary (Title—Secretary, etc.) of the corporation named herein; that Irvin Nielsen (Name), who signed this agreement was then Vice Pres. and Manager (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.

(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

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To the United States of America:

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Wolf Ridge Minerals Corporation[3]

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Irvin Nielsen (Seal)	P.O. Box 548 (Street) Glenwood Springs, Colo. 81601 (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	
(Seal)	(Street) (City & State)	

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(Corporate Seal)

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OFFICIAL FILE COPY

Date	Surname	Code
4/4/68	Paterson	120
	(on leave)	110
		120
4/4	cal	220
		120M

AIRMAIL

APR 4 1968

Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado

Re: OME-6707 (Copper-Silver)
Wolf Ridge Minerals Corporation
Merritt Prospect
Garvin County, Oklahoma

Gentlemen:

A preliminary review of your application for exploration assistance indicates that the following additional information is needed to continue its processing.

Please furnish new bank correspondence. The letters to the banks should state the amount of the loan (estimated Government participation), purpose, date, and terms requested. In lieu of bank correspondence a recent financial statement of the Wolf Ridge Minerals Corporation may be submitted.

The drill log data indicate that the silver content of the deposit may be too low to qualify the property for Government assistance at 75 percent of acceptable costs allowed for silver in the event of a contract. The information suggests the copper content would constitute the major share of the ore value and, therefore, Government contribution to allowable costs would be limited to 62-1/2 or perhaps even 50 percent. If you believe otherwise, you should provide additional data to support this view.

Since Wolf Ridge Mineral Corporation does not own the numerous parcels of land where work is contemplated, it will be necessary for you to furnish the required Lien and Subordination Agreements signed by the owners of the various properties. If the agreements cannot be obtained, please advise whether the Company is willing and able to furnish a Performance Bond or Affidavit of Individual Surety covering the Government's share of the estimated cost of the work in the event of a contract. In addition, please comment on what provisions have been made for extending the leases that expire in the fall of 1968. A Standard Performance Bond Form 25, and a Standard Affidavit of Individual Surety Form 28 are enclosed for your study.

Please note that the bulk of the funds provided under an OME contract are to be used for exploration purposes, not overhead. Reasonable allowances are made for supervision and technical services. However, allowances for full-time non-supervisory engineers and geologists are not allowable costs in a contract. Also, office expenses including bookkeeping are held to a minimum. Normally $50 - $75 per month is considered sufficient for this purpose.

In view of this, please furnish a revised cost estimate reflecting more moderate costs for a geologist-engineer-supervisor, part-time consultant, and office expenses.

To date we have not received the drilling bids mentioned in your letter of March 11.

This request for additional information should not be construed as a commitment by the Government to grant an exploration contract. We shall hold the processing of the application until the data are received.

Sincerely yours,

Harold Kiriamo (gla)

Harold Kiriamo, Assistant Chief
Office of Minerals Exploration

cc: Director's Reading File
Division File
Economic Geology File
OME File
OME Reading File
Mr. Peterson
Region III

ECPeterson/bsl 4/4/68

March 27, 1968

Wolf Ridge Minerals Corporation
Post Office Box 1008
Glenwood Springs, Colorado 81601

Subject: OME-6707

Gentlemen:

Your application for exploration assistance, dated March 4, 1968, submitted to our office at Denver, Colorado, has been assigned Docket No. OME-6707.

Please identify all future correspondence relating to your application by this docket number.

Sincerely yours,

Frank E. Johnson
Chief, Office of
Minerals Exploration

Copy to Region III