MME Form 9
Rev. Nov. 65

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey

OFFICIAL DOCKET FILE

Contract No. 2309 Docket No. 6880

Application
- [ ] 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- [ ] Withdrawn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
- [x] 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
- [x] Final Field Team Report (Tab)
- [x] Operator's Final Report (Tab)
- [ ] Interim Field Team Reports
- [x] Operator's monthly reports and all attachments
- [x] On-site Exam. Report (Tab)
- [ ] Settlement Sheets
- [ ] Drill Logs

Additional Folders:

Left Side

Folders No. _____: Reports
- [ ] Analysis of Semiannual Inspection Reports
- [ ] Project Summary (Interim) by MME Engineers

Right Side

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

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

Folders No. _____: Settlement Sheets

Folders No. _____: Drill Logs

Folders No. _____: Royalty Material

72195-65

Government's Copy

MME Form 51
July 1965

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
U. S. Geological Survey

EXPLORATION CONTRACT
(Short Form)

Docket	Commodity	Contract No.	County	State
OME-6880	Gold	2808	Fergus	Montana

It is agreed DEC 19 1972 (Date), between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and

Viking Exploration, Inc., a corporation

whose mailing address is 820 Denver Center Bldg., 1776 Lincoln Street, Denver, Colorado 80203 hereinafter called the "Operator," as follows:

ARTICLE I. Authority and scope.--(a) This contract, entered into under the authority of Public Law 701, 85th Cong., 2d sess. (72 Stat. 700; 30 U.S.C. § 641 - 646), consists of this form, the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed. The work is a search for new or unexplored deposits of the commodity designated above. The Operator shall begin the work on or before JUNE 1, 1973 (Date), and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 18 months from the date of the contract.

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the work is $28,500.00. The Government will contribute ~~50~~ 75 percent of the total fixed unit costs of the work performed, not in excess of $21,375.00 in accordance with the provisions of Articles 4 and 5.

(c) Interest computation.--Simple interest at the rate of 8¾ percent shall accrue from the dates Federal funds are made available until the period specified for payment of royalty expires, or until the amount of Federal funds contributed is fully repaid with interest.

(d) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. Operator's rights in land.--(a)The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's right of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances:

See Annex I

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Lien Agreement of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached as follows:

See Annex I

(c) The Operator shall preserve and maintain his right, title, or interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a royalty on production and liens for the payment thereof. Two true copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. Performance of the work.--(a) Operator's responsibility.--The work shall be performed diligently, efficiently, in a workmanlike manner in accordance with good mining standards, and in compliance with State laws governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work as specified in Article 1(a).

(b) Government may inspect.--The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract and production operations during the period that royalty is payable to the Government. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. Contribution by the Government.--The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5(b), but all payments by the Government are provisional only, subject to audit. Until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been received, the Government may withhold such sums as are necessary to protect its interests. To the extent that amounts in excess of fixed unit costs or in excess of the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such amounts for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. Reports, accounts, audits.--(a) Operator's records.--The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) Monthly reports.--The Operator shall provide the Government with four copies of monthly reports in three sections as follows:

(1) Operator's Monthly Voucher claiming costs for work performed;

(2) Operator's Progress Report showing the number of units of the various types of work performed; and

(3) a narrative report of the work performed during the reporting period, including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground.

(Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) Final report.--Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with three copies of a final report (in addition to the final monthly report). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) Report of sales.--The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's royalty relates, such as two copies of smelter or concentrator settlement sheets and certified accounts of production and sale or other disposition of production.

(e) Compliance with requirements.--If the Government determines that any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the preparation or completion of same with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. Repayment by Operator.--(a) Certification.--If the Government considers that mineral or metal production from the land covered by the contract may be possible as a result of the exploration work, it shall so certify in writing to the Operator at any time not later than six months after a sufficient final report and final accounting (see Article 5) have been furnished.

(b) Royalty on production.--The Operator, whether or not the producer (for example, if the Operator either transfers or does not retain his interest in the land), shall pay to the Government a royalty on all minerals and metals mined or produced from the land as follows:

(1) irrespective of any certification of possible production--from the date of the contract until the lapse of the time within which the Government may issue such certification or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first; or

(2) if the Government issues a certification of possible production--for a period of ten years from the date of the contract or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first.

(c) Payment of royalty.--(1) The Government's royalty shall be five percent of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business and shown as deductions on the buyer's settlement sheets (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the Operator or producer)), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. No costs of the Operator or producer are deductible in arriving at the "gross proceeds" as that term is here used.

The term "treatment processes" means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

(2) The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be.

(d) Unsold production.--If any production (ore, concentrate, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used in integrated manufacturing or fabricating operations (for instance if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

~~(e) Lien for payment.--To secure the payment of royalty (see Article 6(h)), the Operator hereby grants to the Government a lien upon his interest in the land and upon any production of minerals and metals therefrom until the royalty claim is extinguished by lapse of time or is fully paid.~~

(f) Notice to purchasers.--The Operator or producer shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Government, and this estimate shall be final and binding upon the Operator or producer.

(g) No obligation to produce.--Nothing in this contract shall be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(h) Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals and metals mined or produced from the land.

ARTICLE 7. Termination of the Government's Obligations.--(a) If the Government determines that operations at any time have failed to achieve anticipated results and further work is not justified, the Government may give the Operator written notice thereof, and thereupon:

(1) the Government shall be free of all obligation to pay on account of units of work not then performed; and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

(b) If the Government determines that the Operator is in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon:

(1) the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to royalty and liens to secure the payment thereof, and such rights shall be fully preserved.

(d) The determinations of the Government are subject to appeal under Article 11.

ARTICLE 8. Notices to be given by the Government may be delivered to the Operator or may be sent by certified mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. Officials not to benefit.--No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. Nondiscrimination in Employment.--The provisions respecting nondiscrimination in employment which are required by section 301 of Executive Order 10925, dated March 6, 1961, as amended and supplemented, are attached hereto as Exhibit B, and are hereby incorporated in and made a part of this contract.

B-1

ARTICLE 11. Disputes.--Any dispute arising under this contract which is not disposed of by agreement shall be decided by the Director, U. S. Geological Survey, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Operator. The decision of the Director, U. S. Geological Survey, shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Operator mails or otherwise furnishes to the Director, U. S. Geological Survey, a written appeal addressed to the Secretary of the Interior. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence.

The term "Director, U. S. Geological Survey," as used herein includes his duly authorized representative.

ARTICLE 12. Work Hours Act of 1962 - Overtime Compensation.--This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

(a) Overtime requirements.--No Operator or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate of not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any such calendar day or in excess of forty hours in any such workweek, as the case may be.

(b) Violations; liability for unpaid wages; liquidated damages.--In the event of any violation of the clause set forth in subparagraph (a) of this paragraph, the Operator and any subcontractor responsible therefor shall be liable to any affected employee for his unpaid wages. In addition, such Operator and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the clause set forth in subparagraph (a) of this paragraph, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (a) of this paragraph.

(c) Withholding for unpaid wages and liquidated damages.--The U. S. Geological Survey may withhold or cause to be withheld, from any moneys payable on account of work performed by the Operator or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Operator or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (b) of this paragraph.

ARTICLE 13. Copeland (Anti-Kickback) Act--Nonrebate of wages.--The regulations of the Secretary of Labor applicable to contractors and subcontractors (29 CFR, Part 3), made pursuant to the Copeland Act, as amended (40 U. S. C. 276c) and to aid in the enforcement of the Anti-Kickback Act (18 U. S. C. 874) are made a part of this contract by reference. The Operator will comply with these regulations and any amendments or modifications thereof and will be responsible for the submission of affidavits required of independent contractors thereunder. The foregoing shall apply except as the Secretary of Labor may specifically provide for reasonable limitations, variations, tolerances, and exemptions.

ARTICLE 14. Changes and added provisions.--

The Government shall not make or be obligated to make any contribution to the costs of work performed under this contract until the Operator has submitted an adequate performance bond in the penal sum of $21,375.00 and the bond has been approved by the Government.

Executed in ~~duplicate~~ quadruplicate the day and year first above written.

Viking Exploration, Inc.
(Operator)

By Charles A. Einarsen
Charles A. Einarsen, President
Title

THE UNITED STATES OF AMERICA

By Denis Nenen
Deputy Assistant Director for Administration, U. S. Geological Survey

I, ROBERT L. BRUCE (Name), certify that I am the _____ secretary of the corporation named as Operator herein; that Charles A. Einarsen (Name), who signed this contract on behalf of the Operator, was then President (Title) of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

12/17/72 Martin
Appd. Sol. Office
Chapman 12/8
Stirhemo 12/8/72
Weiss 12/8/72
Mudge 12/14/72
Albers 12/15/72

Robert L. Bruce

CORPORATE SEAL

EXPLORATION CONTRACT
VIKING EXPLORATION, INC.
OME-6880

ANNEX I

The land, including all rights pertaining thereto, referred to in Article 2 of the Contract consists of two (2) patented lode mining claims and five (5) unpatented lode mining claims, all in Sec. 5, T. 16N., R. 20E., Fergus County, Montana, as shown on Figure 1 entitled "Property Map - Spotted Horse Mine, Fergus County, Montana" attached herto and made a part hereof. The patented claims are:

Name	Survey No.	Patent No.
Spotted Horse	2361	16116
Kentucky Favorite	3314	19189

The unpatented claims are recorded in the Records of the County Clerk, Fergus County, Lewistown, Montana as follows:

Name	Lode Locations Book No.	Page
Old Murph	17	238
Asphidity	17	237
George H.	17	236
Puffrey	17	235
Deefy	17	318, 320

The two patented lode mining claims are owned by First Trust Company of Montana, Great Falls, Montana, and are leased to L. C. Hoffman doing business as Blue Range Mining Company, until May 31, 1976. The Blue Range Mining Company is also the locator of the Old Murph, Asphidity, George H., and Puffrey unpatented lode mining claims. These six mining claims have been assigned to Viking Exploration, Inc., ~~a Montana corporation,~~ * by L. C. Hoffman under terms of a Mining Sub-Lease and Option dated February 28, 1972.

Viking Exploration, Inc. is in possession of the Deffy lode mining claim by right of location.

A Performance Bond in lieu of Lien and Subordination Agreements in the amount of $21,375.00 will be furnished by the Operator, and attached and made part hereof.

* a Colorado corporation, qualified to do business in the State of Montana CAE HK

In the event the Operator or any subsidiary thereof at any time during the period expiring ten years from the date of this contract acquires any right, title, or interest in or to any land situated within 600 feet of the mining claims shown on Figure 1 previously referred to, the Operator shall promptly notify the Government of such acquisition and furnish a description of the land and the nature of the right, title, or interest acquired, maps and such other data as the Government shall require, and such land automatically shall become subject to the provisions of this Contract as of the date of acquisition.

OME 6880 (Gold)

STANDARD FORM 25
JUNE 1967 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.801

PERFORMANCE BOND

(See Instructions on reverse)

DATE BOND EXECUTED *(Must be same or later than date of contract)*
December 19, 1972

PRINCIPAL *(Legal name and business address)*
VIKING EXPLORATION, INC.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

TYPE OF ORGANIZATION *("X" one)*
☐ INDIVIDUAL ☐ PARTNERSHIP
☐ JOINT VENTURE ☒ CORPORATION

STATE OF INCORPORATION
Colorado

SURETY(IES) *(Name(s) and business address(es))*
THE TRAVELERS INDEMNITY COMPANY
One Tower Square
Hartford, Connecticut 06115

PENAL SUM OF BOND

MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)
	21	375	00

CONTRACT DATE	CONTRACT NO.
12-19-72	2309

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided,* That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above;

NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL

Signature(s)	1. Charles A. Einarsen Charles A. Einarsen, Pres. *(Seal)*	2. *(Seal)*	Corporate Seal
Name(s) & Title(s) *(Typed)*	1. VIKING EXPLORATION, INC. Attest: Robert L. Bruce Robert L. Bruce, Secretary	2.	

INDIVIDUAL SURETY(IES)

Signature(s)	1. *(Seal)*	2. *(Seal)*
Name(s) *(Typed)*	1.	2.

CORPORATE SURETY(IES)

SURETY A	Name & Address	THE TRAVELERS INDEMNITY COMPANY 101 University Boulevard Denver, Colorado 80206	STATE OF INC. Conn.	LIABILITY LIMIT	
	Signature(s)	1. Robert J. Sunich	2.		Corporate Seal
	Name(s) & Title(s) *(Typed)*	1. Robert J. Sunich Attorney-in-Fact	2.		

25-105

CORPORATE SURETY(IES) (Continued)					
SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT	*Corporate Seal*
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

BOND PREMIUM ▶	RATE PER THOUSAND	TOTAL
	$ 10.00	$ 214.00

INSTRUCTIONS

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)", and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

U.S. GOVERNMENT PRINTING OFFICE : 1967 O—255-154 (80G)

The Travelers Indemnity Company

Hartford, Connecticut

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That THE TRAVELERS INDEMNITY COMPANY, a corporation of the State of Connecticut, does hereby make, constitute and appoint

Gary F. Chinn, L. M. DeHaven, Gary R. Hanson, Herbert J. Harris, M. J. Saucier, E. K. Smith, Robert J. Sunich, all of Denver, Colorado, EACH

its true and lawful Attorney(s)-in-Fact, with full power and authority, for and on behalf of the Company as surety, to execute and deliver and affix the seal of the Company thereto, if a seal is required, bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof, as follows:

Any and all bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof

and to bind THE TRAVELERS INDEMNITY COMPANY thereby, and all of the acts of said Attorney(s)-in-Fact, pursuant to these presents, are hereby ratified and confirmed.

This appointment is made under and by authority of the following by-laws of the Company which by-laws are now in full force and effect:

ARTICLE IV, SECTION 13. The Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President, any Second Vice President, any Secretary or any Department Secretary may appoint attorneys-in-fact or agents with power and authority, as defined or limited in their respective powers of attorney, for and on behalf of the Company to execute and deliver, and affix the seal of the Company thereto, bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof and any of said officers may remove any such attorney-in-fact or agent and revoke the power and authority given to him.

ARTICLE IV, SECTION 15. Any bond, undertaking, recognizance, consent of surety or written obligation in the nature thereof shall be valid and binding upon the Company when signed by the Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President or any Second Vice President and duly attested and sealed, if a seal is required, by any Secretary or any Department Secretary or any Assistant Secretary or when signed by the Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President or any Second Vice President and countersigned and sealed, if a seal is required, by a duly authorized attorney-in-fact or agent; and any such bond, undertaking, recognizance, consent of surety or written obligation in the nature thereof shall be valid and binding upon the Company when duly executed and sealed, if a seal is required, by one or more attorneys-in-fact or agents pursuant to and within the limits of the authority granted by his or their power or powers of attorney.

This power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Directors of THE TRAVELERS INDEMNITY COMPANY at a meeting duly called and held on the 30th day of November, 1959:

VOTED: That the signature of any officer authorized by the By-Laws and the Company seal may be affixed by facsimile to any power of attorney or special power of attorney or certification of either given for the execution of any bond, undertaking, recognizance or other written obligation in the nature thereof; such signature and seal, when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

This power of attorney revokes that dated March 12, 1970 on behalf of Gary F. Chinn, L. M. DeHaven, Gary R. Hanson, Herbert J. Harris, M. J. Saucier, E. K. Smith

IN WITNESS WHEREOF, THE TRAVELERS INDEMNITY COMPANY has caused these presents to be signed by its proper officer and its corporate seal to be hereunto affixed this 13th day of April 19 71.

THE TRAVELERS INDEMNITY COMPANY SEAL

THE TRAVELERS INDEMNITY COMPANY

By E A Houser

Secretary, Surety

State of Connecticut, County of Hartford—ss:

On this 13th day of April in the year 1971 before me personally came E. A. Houser III to me known, who, being by me duly sworn, did depose and say: that he resides in the State of Connecticut; that he is Secretary (Surety) of THE TRAVELERS INDEMNITY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of his office under the by-laws of said corporation, and that he signed his name thereto by like authority.

RUTH H. SOMERVILLE NOTARY PUBLIC CONNECTICUT

Ruth H. Somerville

Notary Public

My commission expires April 1, 1974

EXPLORATION CONTRACT
VIKING EXPLORATION, INC.
OME-6880

EXHIBIT A

The purpose of this project is to explore for gold ore by drifting and crosscutting in Carboniferous limestone near its contact with intrusive syenite porphyry and rhyolite porphyry on the 4 and 6 levels of the Spotted Horse mine.

GENERAL PROVISIONS

The Operator shall provide such supervision, labor, and technical services as may be required to perform the work in a satisfactory manner.

The location, direction, and extent of each work item shall be subject to Government approval.

No work under this contract shall be performed within 100 feet of the outer boundary of the project area.

All drifts and crosscuts shall be not less than 5 by 7 feet in cross section and shall be adequately supported by timber where necessary using standard 8-by 8-inch drift sets or equivalent round timber.

Mine rails shall be not less than 16-pound size, air lines not less than 2-inch diameter, water lines not less than 1-inch diameter, and vent lines not less than 10-inch diameter.

All significantly mineralized areas traversed by the exploration work shall be sampled. A representative bulk sample shall be collected from each round broken in mineralized rock. Channel samples shall be cut normal to the trends of the deposits at intervals of not more than 5 feet.

All samples, from whatever source, shall be split as necessary and one split assayed for gold and silver. The Operator shall store one split of each sample in a suitable container properly identified as to source and location for Government inspection and possible use. With prior Government approval, the Operator may dispose of the stored samples.

True copies of assay certificates, and maps or sketches showing the work completed during the reporting period, the location, width, and assay value of all samples taken, and the geological formations and structures traversed by the drifts and crosscuts shall be furnished monthly to the Government.

The Operator shall provide such supervision, labor, and technical services as may be required to complete the work in a satisfactory manner.

The Operator shall perform all work in such a manner as to maintain the quality of the environment in the vicinity of the project. Waste mineral materials generated in the process of the exploration work shall be stored in a safe manner so as not to degrade the existing quality of adjacent land, air, and streams.

DESCRIPTION OF THE WORK

The proposed work is shown on Figure 2 - entitled "Proposed Exploration, Spotted Horse Mine, Fergus County, Montana" attached hereto and made part hereof.

Starting approximately 30 feet northwesterly from the Spotted Horse Shaft on Level 4, drift north-northeasterly to the contact between the limestone and the rhyolite porphyry. It is anticipated that the work will traverse a zone of brecciated limestone and porphyry. Maximum length of drift is 80 feet.

Starting approximately 75 feet due south from the Spotted Horse Shaft on the 6 level, drift southeasterly along the limestone-syenite porphyry contact for 300 feet to explore for the downward extensions of the Bonanza and Glory Hole veins.

ESTIMATED COST OF THE WORK

Fixed Unit Cost 1/

Drifting and crosscutting 380 feet at $75/ft.	$28,500.00
Government participation at 75 percent	21,375.00

1/ The unit cost includes all costs of labor, materials, equipment purchased, supervision, insurance, assays, mileage, and office expense. The Government retains no equity in any of the equipment or materials used.

EXHIBIT B

EQUAL OPPORTUNITY CLAUSE (FEDERALLY ASSISTED CONSTRUCTION)

EQUAL OPPORTUNITY (APPLICANT)

(a) The applicant hereby agrees to incorporate, or cause to be incorporated, into any contract for construction work, or modification thereof, as defined in the rules and regulations of the Secretary of Labor at 41 CFR, Chapter 60, which is paid for, in whole or in part, with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following Equal Opportunity (Federally Assisted Construction) clause:

EQUAL OPPORTUNITY [1] (FEDERALLY ASSISTED CONSTRUCTION)

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this Equal Opportunity (Federally Assisted Construction) clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(c) The Contractor will send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the Equal Opportunity (Federally Assisted Construction) clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as provided by law.

(g) The Contractor will include this Equal Opportunity (Federally Assisted Construction) clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided, however,* That in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(b) The applicant further agrees that it will be bound by the above Equal Opportunity (Federally Assisted Construction) clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided, however,* That if the applicant so participating is a State or local government, the above Equal Opportunity (Federally Assisted Construction) clause is not applicable to any agency, instrumentality, or subdivision of such government which does not participate in work on or under the contract.

(c) The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of Contractors and subcontractors with the Equal Opportunity (Federally Assisted Construction) clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

(d) The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order No. 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and Federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the Equal Opportunity (Federally Assisted Construction) clause as may be imposed upon Contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D, of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings the administering agency may take any or all of the following actions: Cancel, terminate, or suspend, in whole or in part, this grant [contract, loan, insurance, guarantee]; refrain from extending any further assistance to the applicant under the program with respect to which its failure or refusal occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

[1] On and after Oct. 14, 1968, the term "race, color, religion, sex, or national origin" is substituted for the term "race, creed, color, or national origin," as provided by Executive Order No. 11375, Oct. 13, 1967 (32 F.R. 14303).

EXHIBIT B-1

CERTIFICATION OF NONSEGREGATED FACILITIES

The undersigned hereby certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. He certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location under his control, where segregated facilities are maintained. He further agrees that a breach of this certification is a violation of the Equal Opportunity clause in OME Exploration contracts. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. He further agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that he will retain such certifications in his files; and that he will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR CERTIFICATIONS OF NONSEGREGATED FACILITIES

A Certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding $10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

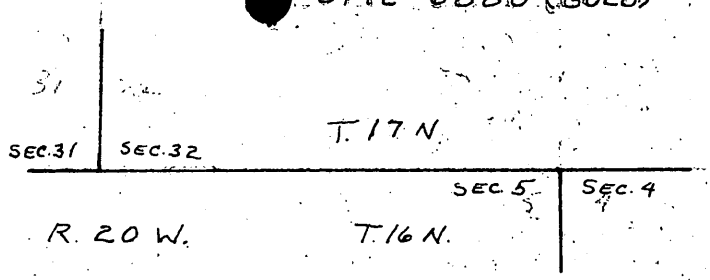
Charles A. Gunvaasen
Signature

President
Title

November 24, 1972
Date

U.S. GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

OME-6880 (GOLD)



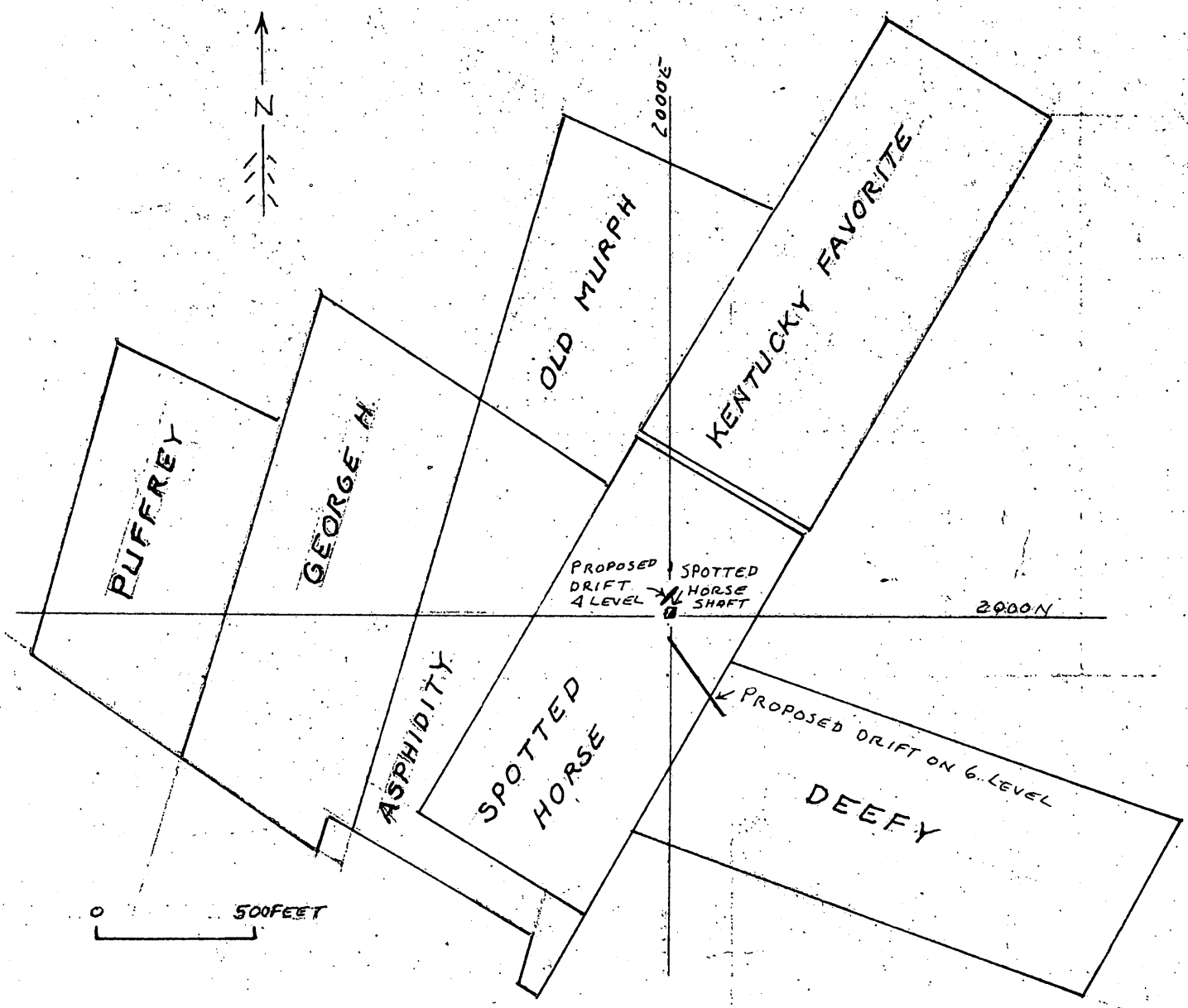


FIGURE 1- PROPERTY MAP- SPOTTED HORSE MINE, FERGUS COUNTY, MONTANA

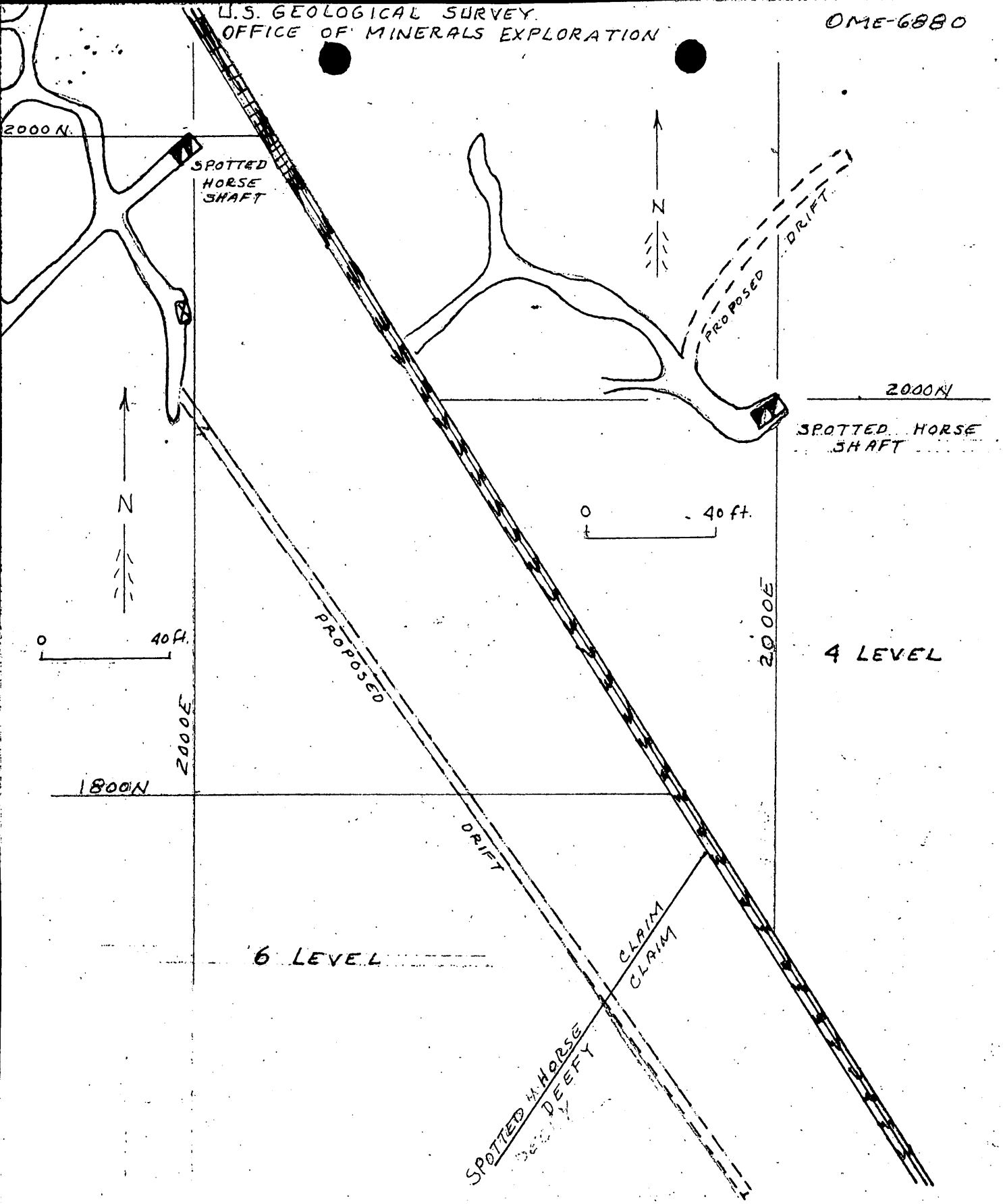


FIGURE 2- PROPOSED EXPLORATION- SPOTTED HORSE MINE, FERGUS COUNTY, MONTANA

MME Form 40
(Revised Nov. 71)

Form approved
Budget Bureau No. 42-R1368

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

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

NAME OF APPLICANT *(Full legal name and mailing address as they should appear on contract if one is executed.)*

VIKING EXPLORATION, INC.
820 DENVER CENTER BLDG.
1776 LINCOLN STREET
DENVER, COLORADO
80203

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER: OME 6880

DATE RECEIVED:

REGION:

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
CHARLES A. EINARSEN	SAME	PRESIDENT
THEODORE D. SHELDON	SAME	VICE PRESIDENT-EXPLORATION
F.M. STEVENSON	1200 SECURITY LIFE BLDG. DENVER, COLORADO	SEC. - TREAS.

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: GOLD

ESTIMATED COST OF PROJECT: ~~$90,292~~ REVISED ESTIMATE $38,077,710

PROPERTY NAME	LOCATION COUNTY	STATE
SPOTTED HORSE	FERGUS	MONTANA

GENERAL INSTRUCTIONS

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

CERTIFICATION

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

MAY 9, 1972
REVISED AND RESUBMITTED: AUGUST 1, 1972
DATED

REVISED SEPTEMBER 5, 1972

VIKING EXPLORATION, INC.
BY *(Signature)* Charles A. Einarsen
PRESIDENT
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

(submit on accompanying pages)

1. Financial Eligibility:

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

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

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

2. Applicant's Rights in Land:

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

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

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

3. Physical Description:

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

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

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

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

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

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

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

4. Accessibility of Property:

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

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

5. Exploration Work:

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

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

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

6. Experience:

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

7. Estimate of Costs:

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

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

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

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

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

(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).]

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

August 1, 1972

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

Re: Spotted Horse Mine
Fergus County, Montana
Revised OME Application

Dear Mr. Kirkemo;

We are submitting herewith two copies of an exploration proposal for the Spotted Horse Mine, Fergus County, Montana. Under separate cover we are forwarding two map tubes each containing a set of 8 colored mine maps, including a surface map and maps of Mine Levels 1 through 7.

As per the suggestion of your office and Mr. Willard Puffet, made to Mr. Larry C. Hoffman of our company, we have revised our program to include only the targets on the 4th and 6th levels. The estimated cost of this work is $38,077.10. We would like to request 75% participation by the OME in this exploration work, or $28,557.83. The time required to perform the work will be about 17 weeks.

Pages two and three of this letter are a listing of the duplicate additional items being enclosed with this application, the two sets being noted "Washington, D. C." and "Spokane".

I hope the information supplied is complete and in proper order for your consideration. Should any questions or problems arise, please let us know so that they may be resolved as promptly as possible.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enclosures
cc: Mr. Larry C. Hoffman
Spotted Horse Mine
Route 3, Box 39
Lewistown, Montana 59457

Mr. Harold Kirkemo
Attach. - 1
August 1, 1972

1. Financial Eligibility.
   (a) The letters enclosed are the letters which accompanied our original application, and are (copies):
   Viking letter April 18, 1972 to Central Bank & Trust, Denver, and letter from Central Bank & Trust April 28, 1972 refusing loan;
   Viking letter April 18, 1972 to First National Bank of Denver (Viking's bank of account) and First National Bank reply April 21, 1972 refusing loan.
   (b) There are no parent, affiliated or controlling companies or organizations having an interest in Viking Exploration, Inc.
   (c) Viking Exploration, Inc. will furnish its share of the exploration costs out of regular corporate revenues. Viking may seek an industry partner to participate in the working interest in the venture.

2. Applicant's Rights in Land.
   (a) Viking Exploration, Inc. is the holder and owner of all right, title and interest in the minerals by virtue of (copies enclosed):
   1. Mining Lease and Option dated May 13, 1968 from First Trust Company of Montana to L. C. Hoffman dba Blue Range Mining Company;
   2. Extension of Mining Lease and Option until May 31, 1972;
   3. Extension of Mining Lease and Option until May 31, 1974;
   4. Extension of Mining Lease and Option until May 31, 1976;
   5. Mining Sub-Lease and Option dated February 28, 1972, from L. C. Hoffman dba Blue Range Mining Company to Viking Exploration, Inc.
   6. Consent to Assignment of Mining Sub-Lease and Option, dated June 26, 1972, executed by First Trust Company of Montana, Lessor.

   There are no liens or other encumbrances against the property.
   (b) The legal description of the lands to be explored is shown on the enclosed copies of plats and Certificates of Location:
   1. Plat of Section 5, Township 16 North, Range 20 East, MPM, Fergus County, Montana, showing location of following claims -
   2. Plat of Mineral Survey 2361, Spotted Horse Lode, Warm Springs Mining District, Fergus County, Montana;
   3. Plat of Mineral Survey 3314, Kentucky Favorite Lode, Warm Springs Mining District, Fergus County, Montana;
   4. Blue Range Mining Company recorded certificates of location:
   -Old Murph Claim, Book 17 Lode Locations, Page 238;
   -Asphidity Claim, Book 17 of Lode Locations, Page 237;
   -George H. Claim, Book 17 of Lode Locations, Page 236;
   - Puffrey Claim, Book 17 Lode Locations, Page 235;
   records of Fergus County, Montana.

VIKING EXPLORATION INC.

2. (b) continued

The exploration targets lie under the Spotted Horse and Kentucky Favorite patented lode mining claims, held under the Mining Sub-Lease and Option (see report, item 3 g., pp.3-4 and Map D). The unpatented claims will not be explored under this program, but may be included in the government lien if the OME so desires.

Part of the unpatented land southeast of the Spotted Horse claim formerly was part of the Ella & Clara May claims (Robertson, 1949, IC 7544).

(c) Form MME 52 is enclosed in quintuplicate, executed by L. C. Hoffman dba Blue Range Mining Company. Viking will furnish a performance bond if necessary. By letter (copy enclosed) the estate trustees for Lessor, First Trust Company of Montana, decline to execute subordination of lien.

3. Physical Description. (See report, item 3 g., pp. 8-13, 68-69 Maps.)

(a) Under separate cover this date, two sets of maps are being sent to you in tubes. Each set contains Surface Map and Map of each Level, 1 through 7 (total 8 maps).

Compressed air is piped from the compressor at the portal through a 2" line to the shaft, and by a 3" shaft column to the 7th level. Two inch pipe connects the shaft, through the 7th level and the winze, to the 8th level.

Shaft is equipped with 3" pump column from sump to 1st level.

25-30 lb. rail on surface and in adit to the shaft. Old rail on 1st, 2nd and 3rd levels is 8 lb/yd. On lower levels is 12-16 lb. rail.

Compressor, storage and shop facilities are located in a 20x36' frame building at the portal. Assay office is located in a 12x36' frame building.

(b) (As described in report, item 3 g., pp. 11-13.) Viking has all interest in recent remedial work conducted by Larry C. Hoffman dba Blue Range Mining Company, who will be in charge of the proposed exploration.

(c) (As itemized in report, item 3 g., pp. 11, 71-74.) And see copies of published information attached:
Articles 9-24-10 and 6-10-16 Mining & Scientific Press; article 1-23-15 Mining & Engineering World; letter 3-23-69 from Frank B. Bryant, Mining Engineer; Weed & Pirsson report pp. 18-20 and "Judith Mountains" pp. 594,599,602-606.

(d) At the present time, ore reserves are not known.

(e) Geologic features of the property are described in the report, item 3 g., Map C, pp. 3-7 et seq.

(f) No sampling has been done in the areas of proposed exploration due to lack of exposure. Assays along the basic contact-fault structures away from the ore shoots are of no significance. The basis for expecting to find ore is discussed in the report, item 3 g., pp. 14-35.

(g) Two copies of report are enclosed, entitled "SPOTTED HORSE MINE, EXPLORATION PROGRAM". Return of these reports, and of Maps (item 3 a.) is requested.

Mr. Harold Kirkemo
Attach. - 2A
August 1, 1972

4. Accessibility of Property.

(a) Viking's representative for all examinations and correspondence will be Larry C. Hoffman, Route 3, Box 39, Lewistown, Montana 59457 (406) 538-8384, or care of Viking Exploration, Inc., 820 Denver Center Building, 1776 Lincoln Street, Denver, Colorado 80203 (303) 825-2209. Mr. Hoffman will be in Lewistown only at the appointed inspection time.

The property may be reached following the maps (A & B) in the report, item 3 g. From Lewistown, north on Highway 119 for about 11 miles, then east on the Maiden Road marked by a historical monument. Proceed about 1 mile past end of pavement on radar base road. Turn off radar base road at Maiden Canyon Resource Conservation Area sign and follow that road to the old cement dam. Mine yard is to immediate right.

Property is accessible from about May 1 to Dec. 15. All mine workings relevant to proposed exploration are open for inspection. The main shaft is traversed by ladders.

(b) The nearest rail depot is at Brooks, about 12 miles west of the mine. Small supplies, light mining tools, and machine shop facilities are available in Lewistown. Heavy mining equipment is available in Billings, Helena and Butte, respectively 130, 200 and 260 miles distant by highway.

Smelters are located at East Helena and Anaconda, 200 and 280 miles from the mine. Both will accept Spotted Horse ore.

Pure water is available at the mine, at the rate of 100 gpm. Single phase 220-110 volt electric power (REA) is wired into the mine, and a 3 phase line (Montana Power) is located at the Lewistown Radar Station, 3 miles distant. All roads are excellent and maintained to the mine yard.

Timber is locally available at reasonable cost.

5. Exploration Work.

(a) Proposed exploration work is described in the report, item 3 g., pp. 38-40. All drifting to be 5' x 7' in cross-section, no timbering or other problems anticipated.

(b) All access roads have been constructed.

(c) Rehabilitation work is in progress; exploration work would begin upon completion of the repair work and execution of the exploration contract. Drifting and raising will progress at the average rate of 4 ft. per day, over the entire project, barring unforeseen difficulties. Progress will begin slowly in initial phases (first 2-1/2 months) with progress increasing as miners are trained.

6. Experience.

Enclosed are copies of Montana State Board of Registration for Professional Engineers and Land Surveyors certificate for Larry Charles Hoffman, with resumes for L. C. Hoffman and for Edward Wieglenda, probable mine foreman.

Also enclosed is the current financial statement for Viking Exploration, Inc. The general background of Viking has been in the field of oil and gas exploration. With the exception of some legal aspects and the actual type of exploration, the type of work done strongly parallels mineral exploration.

VIKING EXPLORATION INC.

Mr. Harold Kirkemo
Attach. - 2B
August 1, 1972

Viking has completed 27 exploration programs from inception to completion. This has included preparing the geologic information and engineering data, assembling crews and equipment, coordinating all aspects, and all associated overhead and support work. As most of this work has been done in association with other companies and individual investors, close budgeting and careful engineering have been a necessity. All projects have been completed within reasonable time-cost projections.

The background of Charles A. Einarsen, President, and of Theodore D. Sheldon, Vice President of Viking Exploration, Inc., is outlined in the following resumes (attached).

7. Estimate of Costs.

(a) No independent contracts are contemplated during this exploration program. Once miners are trained, drifting and raising may be placed on a "contract" basis, with the miners paid a bonus for extra footage broken.

(b) No outside consultants will be used. All services are available. An itemized salary-expense sheet has been prepared and is part of the cost breakdown of this project (see report, item 3 g., Appendix III).

(c) Operating equipment is described on the attached current inventory of Spotted Horse Mine Equipment. See also report, item 3 g., Appendix IV.

(d) See (c) above. Additional equipment has been located and can readily be acquired.

(e) All initial rehabilitation and repairs will be completed before exploration contract is executed.

(f) None.

(g) No repairs necessary other than above. Miscellaneous costs are included in the report, item 3 g., Appendix IV.

WASH. D.C.

MME Form 40
(Revised Nov. 71)

Form approved
Budget Bureau No. 42-R1368

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR FINANCIAL ASSISTANCE IN MINERALS EXPLORATION

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

NAME OF APPLICANT *(Full legal name and mailing address as they should appear on contract if one is executed.)*

VIKING EXPLORATION, INC.
d/b/a BLUE RANGE MINING CO.
820 DENVER CENTER BLDG.
DENVER, COLORADO
80203

APPLICANT DO NOT USE THIS BLOCK

DOCKET NUMBER: 6880

DATE RECEIVED: 8-10-72

REGION: I

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
Charles A. Einarsen	same	President
Theodore D. Sheldon	same	Vice-President Exploration
Earnest S. Baker	735 Petroleum Club Bldg. Denver, Colo.	Sec.-Treas.

MINERAL(S) FOR WHICH YOU WISH TO EXPLORE: GOLD

ESTIMATED COST OF PROJECT: ~~$90,292~~ revised estimate $38,077.10

PROPERTY NAME	LOCATION COUNTY	STATE
SPOTTED HORSE	FERGUS	MONTANA

GENERAL INSTRUCTIONS

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

CERTIFICATION

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

May 9, 1972
DATED

Revised and resubmitted:
August 1, 1972

Charles A. Einarsen
BY *(Signature)*

PRESIDENT
TITLE

VIKING EXPLORATION INC.

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

(submit on accompanying pages)

1. Financial Eligibility:

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

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

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

2. Applicant's Rights in Land:

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

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

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

3. Physical Description:

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

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

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

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

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

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

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

4. Accessibility of Property:

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

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

5. Exploration Work:

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

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

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

6. Experience:

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

7. Estimate of Costs:

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

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

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

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

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

(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).]

SUPPLEMENTAL DATA

VIKING EXPLORATION INC.

SPOTTED HORSE MINE PROJECT

FERGUS COUNTY, MONT.

FOR

THE OFFICE OF MINERALS EXPLORATION

U. S. GEOLOGICAL SURVEY

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

April 18, 1972

Mr. Marvin Owens
Senior Vice-president
Central Bank & Trust
5th & Arapahoe
Denver, Colorado 80203

Dear Mr. Owens:

Viking Exploration, Inc. is currently planning an exploration program for gold at the Spotted Horse Mine, near Lewistown, Montana. The proposed program is described in the accompanying report by Mr. Larry C. Hoffman, who has worked with the property for several years.

The preparatory and rehabilitation work will be financed by Viking, leaving $124,475 of required exploration capital. Viking would like to borrow 75% of this amount, or $93,356.

I should like you to inspect our three-dimensional transparent mine model in our office so that you can get a better picture of the mine's potential. Once having seen the model I trust you will favor us with a loan for this purpose.

Sincerely yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen

CAE:nd

VIKING EXPLORATION INC.

RECEIVED
VIKING EXPLORATION INC.

THE CENTRAL BANK AND TRUST CO.
ESTABLISHED 1892 Central Park DENVER • PHONE 893-3456

April 28, 1972

Mr. Charles A. Einarsen
President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver,Colorado 80203

Dear Mr. Einarsen:

We appreciate the opportunity to consider your request for a loan in the amount of $93,356 as delineated in your letter of April 18. We also appreciate having the benefit of the material contained in the Spotted Horse Mine Exploration Program brochure.

We have given careful thought to your request and find it necessary to decline the loan. As a matter of explanation, it is the general policy of this bank in extractive industries to loan only on the basis of ore already mined with market assured and not to make any advances for exploration purposes.

None the less, we wish you success in obtaining necessary financing for your exploration and rehabilitation program.

Yours very truly,

THE CENTRAL BANK AND TRUST COMPANY

Marvin F. Owens
Senior Vice President

MFO:dh

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

April 18, 1972

Mr. Robert W. Cowan, Jr., Vice President
First National Bank of Denver
17th & Welton Streets
Denver, Colorado 80203

Dear Mr. Cowan:

Viking Exploration, Inc. is currently planning an exploration program for gold at the Spotted Horse Mine, near Lewistown, Montana. The proposed program is described in the accompanying report by Mr. Larry C. Hoffman, who has worked with the property for several years.

The preparatory and rehabilitation work will be financed by Viking, leaving $124,475 of required exploration capital. Viking would like to borrow 75% of this amount, or $93,356.

Bob, you have already seen the mine model in our office which shows the potential we have for finding substantial new gold reserves. I trust you will favor us with a loan for this purpose.

Sincerely yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen

CAE:nd

VIKING EXPLORATION INC.

Robert W. Cowan, Jr.
Vice President

The First National Bank of Denver
Post Office Box 5808
Denver, Colorado 80217
Telephone 303 893-2211

VIKING EXPLORATION, INC.
RECEIVED APR 24 1972

First of Denver

C.A.E.

April 21, 1972

Mr. Charles A. Einarsen
President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Dear Chuck:

I am in receipt of your letter of April 18, 1972, regarding the Spotted Horse Mine and your request to borrow $93,356.00 for exploration capital.

As we have discussed on previous occasions, I feel that expenditures of this type should be equity financing rather than bank financing and am afraid I must deny this request.

As you indicated, I have reviewed the mine model in your office and have also looked at the exploration program transmitted with your letter of April 18th. While I believe the program does have potential, it is not possible to consider bank financing at this point in the venture.

Best personal regards.

Yours very truly,

Robert W. Cowan, Jr.
Vice President

RWC:blp

VIKING EXPLORATION INC.

THE MINING SUB-LEASE AND OPTION AS SET FORTH IN THE AGREEMENT DATED FEBRUARY 28, 1972, BY AND BETWEEN L.C. HOFFMAN D/B/A BLUE RANGE MINING COMPANY, AND VIKING EXPLORATION, INC., HAS BEEN EXAMINED BY, AND HAS THE APPROVAL OF, FIRST TRUST COMPANY OF MONTANA, TRUSTEE AND LESSOR OF THE SPOTTED HORSE AND KENTUCKY FAVORITE MINING CLAIMS.

Forrest E. Henderson

FORREST E. HENDERSON
PRESIDENT
FIRST TRUST COMPANY OF MONTANA

STATE OF Montana)
)ss:
COUNTY OF Cascade)

ON THIS 26 DAY OF June, 1972, BEFORE ME, A NOTARY PUBLIC FOR THE STATE OF Montana, PERSONALLY APPEARED Forrest E. Henderson, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE WITHIN INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME.

(SEAL)

Maxwell L. McNamer
NOTARY PUBLIC IN AND FOR THE
STATE OF Montana
RESIDING AT Great Falls
MY COMMISSION EXPIRES 4-6-75

VIKING EXPLORATION INC.

MINING SUB-LEASE AND OPTION

VIKING EXPLORATION INC.

THIS AGREEMENT, made and entered into this 28th day of February, 1972, by and between L. C. Hoffman, doing business as Blue Range Mining Company as Lessee, hereinafter referred to as "Hoffman", and Viking Exploration, Inc., a corporation, authorized to do business in the State of Montana, hereinafter referred to as "Viking".

WITNESS THAT:

WHEREAS, Hoffman is the owner of a certain Mining Lease and Option covering the patented mining claims described on the attached "Exhibit A" which is made a part hereof by this reference and incorporated herein; and

WHEREAS, Hoffman has obtained two (2) Extensions of Mining Lease and Option and both Extensions are attached hereto as Exhibits "B" and "C" and by reference are made a part hereof; and

WHEREAS, Hoffman is also the owner of four (4) unpatented mining claims and two (2) millsites as described on the attached "Exhibit D" which is made a part hereof by this reference and incorporated herein; and

WHEREAS, Hoffman is the sole owner of the mining equipment listed on Exhibit "E" attached hereto and made a part hereof; and

WHEREAS, Hoffman has agreed to assign to Viking and Viking has agreed to accept from Hoffman an assignment of First Party's interest in and to said Mining Lease and Option agreement covering the lands described in Exhibit "A" and the four (4) unpatented mining claims and two (2) millsites as described on Exhibit "D" upon and subject to the terms, covenants and conditions hereinafter set forth;

NOW THEREFORE, in consideration of the sum of Ten Dollars ($10.00) and of the mutual covenants and agreements hereinafter contained, it is hereby agreed by and between the parties hereto as follows:

1. FIRST TRUST COMPANY OF MONTANA LEASE:

The leased acreage covered by the lands described on Exhibit "A" and extended by Exhibits "B" and "C" is hereby assigned by Hoffman and accepted by Viking subject to the terms and provisions of that certain Mining Lease and Option dated June 1, 1968, from First Trust Company of Montana to L. C. Hoffman, doing business as Blue Range Mining Company, hereinafter referred to as "Mining Lease and Option".

VIKING EXPLORATION INC.

2. TITLES:

Hoffman does not warrant the title to the patented claims and millsites covered by this Agreement, but shall upon request, furnish to Viking such abstracts and other title papers as Hoffman has in his files, together with copies of the Mining Lease and Option and all intermediate assignments thereof, if any, and copies of all unpatented claims and millsites described in Exhibit "D". Hoffman represents and warrants that the area covered by said unpatented mining claims, and each of them has been and is properly and validly located under the mining laws of the United States of America and the State of Montana; that assessment work on the mining claims, and each of them, has been performed at the time, in the manner, and to the extent required by law; that the mining claims are all in good standing, subsisting and valid at the date hereof, and are free and clear of all liens, encumbrances, leases and claims of third parties, except only rights reserved to the United States in respect of unpatented mining claims generally.

3. CONSIDERATION:

(a) Equipment. Viking hereby agrees to pay Hoffman Seventy Five Hundred Sixty-Nine Dollars ($7569.00) for the equipment now located on the premises of the Spotted Horse and Kentucky Favorite Mining Claims and more particularly described on Exhibit "E", a copy of which is attached hereto, and incorporated herein by this

reference. By acceptance of this sum, Hoffman agrees to deliver said equipment to Viking free and clear of all liens and encumbrances of whatsoever nature and agrees to use these funds for repayment of past loans and debts relative to the mining property so that the mining property assigned to Viking is free and clear of all liens and encumbrances of whatsoever nature. The parties hereto agree that in the event Viking reassigns to Hoffman as set out in the Reassignment Clause hereinafter set forth, then Hoffman shall have the option to repurchase the equipment as set forth in Exhibit "E" plus the depreciated value of any additional equipment purchased by Viking for development of the lands described in Exhibits "A" and "D" during the term of this agreement, less any amounts received for equipment sold during said term.

VIKING EXPLORATION INC.

(b) Royalty. Hoffman shall be entitled to the royalties as set out in paragraph 3 of said Mining Lease and Option, except Hoffman's royalty shall be based upon the net smelter returns less all mining, transporting, milling, smelting and minting costs. However, Hoffman's royalty shall commence only at such time as Viking or its assigns has first paid The First Trust Company of Montana Thirty Thousand Dollars ($30,000.00) as royalty or additional cash purchase price payments as set forth in Article 19 of said Mining Lease and Option.

(c) In the event Viking sells all or an undivided interest in the property herein set forth for other than exploratory or development capital, then Hoffman shall receive twelve percent (12%) of the net profit of Viking which shall be in the form of six percent (6%) cash and six percent (6%) Viking stock. The value of the Viking stock shall be that book value calculated on the day after the closing of the sale of the interest in the mining property. Said net profit to Viking shall be the amount received by Viking in excess of the amount allocated to exploratory or development costs plus the sum of the direct expenditures of Viking allocated to said mining properties and Fifteen Hundred Dollars ($1500.00) per month overhead costs during the term said Mining Sub-Lease and Option has been in force commencing January 1, 1972.

(d) Viking shall use its best efforts to obtain working capital for the necessary exploration and development of said mining property either through sales within the industry or an allocation of a portion of the funds derived from an anticipated Regulation "A" S.E.C. filing by Viking.

4. REASSIGNMENT: Whether or not set out in assignment or assignments made hereunder, Viking agrees that it shall not surrender or relinquish any interest in any lands acquired by assignment from Hoffman hereunder without notifying Hoffman no less than sixty (60) days in advance of surrender or relinquishment, and if Hoffman, within fifteen (15) days following receipt of any notice of intention to surrender or relinquish, requests Viking in writing, Viking shall reassign all interest therein to Hoffman. Similarly, no lease or mining claim acquired by Viking under this agreement shall be allowed to expire for failure to cause a minimum labor upon leased premises equal to One Thousand Dollars ($1,000.00) per month for the duration of this lease, although the aforementioned labor need not be done on a monthly basis, as set forth in paragraph 18 of said Mining Lease and Option. Viking also hereby agrees to do the necessary assessment work to keep in force the four unpatented mining claims and two mill sites set forth in Exhibit "B", but in the event Viking elects not to provide or cause to be provided the funds necessary to complete said assessment work, then Viking shall give Hoffman no less than sixty (60) days notice prior to the particular assessment anniversary date and Hoffman may, within fifteen (15) days following receipt of notice, request and obtain reassignment thereof from Viking.

5. NOTICE:

Except as herein otherwise expressly provided, any notice or other communication required or permitted hereunder shall be deemed to have been properly given or delivered when delivered personally or when sent by certified mail or telegram with all postage and charges fully prepaid to

VIKING EXPLORATION, INC.
820 Denver Center Building
Denver, Colorado 80203

VIKING EXPLORATION INC.

Attention: Mr. Charles A. Einarsen

VIKING EXPLORATION INC.

L. C. Hoffman
d/b/a Blue Range Mining Company
820 Denver Center Building
Denver, Colorado 80203

Attention: L. C. Hoffman

The date of service by mail shall be the date on which written notice or other communication is deposited in the United States Post Office addressed as above provided. Each party hereto shall have the right to change its address for all purposes of this article by notifying the other parties hereto in writing.

6. SURFACE RIGHTS:

The southerly one-half (1/2) of the surface of the Spotted Horse patented lode mining claim, less mineral rights, will be conveyed to Hoffman as sole owner, at such time as the mining claim has been purchased from First Trust Company of Montana. The northerly boundary shall be parallel to the present Spotted Horse southerly end line.

7. FORCE MAJEURE:

The obligations of the parties hereunder shall be suspended to the extent and only so long as performance thereof is prevented by fire, action of the elements, strikes, or other differences with workmen, acts of civil or military authority, acts of the public enemy, restrictions or restraints imposed by law or by regulation or by the order of governmental authority whether Federal, State or local, inability to obtain necessary rights of access, severe inclemency of weather or any other causes reasonably beyond control of said parties whether or not similar to any cause above enumerated. Whenever performance of its obligations is prevented by any such cause, the party so affected shall give notice to the other party as promptly as is reasonably possible.

8. TOPICAL HEADINGS:

The topical headings used herein are inserted for convenience only and shall not be construed as having any substantive significance or meaning whatsoever or as indicating that all of the provisions of this agreement relating to any particular topic are to be found in any particular article.

9. ASSIGNABILITY AND EFFECT OF AGREEMENT:

The terms, covenants and conditions of this agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and, if assigned, their assigns, and said terms covenants and conditions shall be covenants running with the lands covered hereby and the leasehold estates therein and with each transfer or assignment of said land or leasehold estate.

THIS AGREEMENT is executed on the day and year first above written.

L. C. HOFFMAN d/b/a BLUE RANGE MINING COMPANY

By L. C. Hoffman
L. C. Hoffman

VIKING EXPLORATION, INC.

By Charles A. Einarsen
Charles A. Einarsen

ATTEST:

Asst Secretary

VIKING EXPLORATION INC.

EXTENSION OF MINING LEASE AND OPTION

The MINING LEASE AND OPTION Agreement entered into as of the first day of June, 1968, by and between FIRST TRUST COMPANY OF MONTANA, a Montana corporation, as Lessor, and L.C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY, as Lessee, is hereby extended for a period of four years with said extension terminating May 31, 1976.

This extension is made upon the following terms and conditions:

I.

Lessee shall pay Lessor in addition to the payment of royalties as set out in the original Mining Lease and Option $250.00 on or before June 1, 1972, an additional sum of $250.00 on or before June 1, 1973, an additional sum of $250.00 on or before June 1, 1974 and an additional sum of $250.00 on or before June 1, 1975.

II.

In all other respects the provisions of the Mining Lease and Option Agreement dated June 1, 1968, are extended and reaffirmed.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals this 15 day of May 1972.

L.C.HOFFMAN, DOING BUSINESS AS
BLUE RANGE MINING COMPANY

L C Hoffman

FIRST TRUST COMPANY OF MONTANA

BY: Frank B. Henderson
President

ATTEST:

Raymond B. Lewis
Secretary

STATE OF Colorado }
COUNTY OF Denver } ss:

On this 10th day of May, 1972, before me, a Notary Public for the State of Colorado, personally appeared L.C. Hoffman, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

(SEAL)

VIKING EXPLORATION INC.

NOTARY PUBLIC in and for the
State of Colorado
Residing at 820 Denver Center Bldg.
My Commission expires My Commission expires May 25, 1975

STATE OF Montana

COUNTY OF Cascade

On this 15 day of May, 1972, before me a Notary Public for the State of Montana, personally appeared Forrest E. Henderson, known to me to be the President of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

(SEAL)

Marian L. McKenzie
Notary Public in and for the
State of Montana
Residing at Great Falls, Mont.
My commission expires [illegible]

VIKING EXPLORATION INC.

File

VIKING EXPLORATION INC.

EXTENSION OF MINING LEASE AND OPTION

The MINING LEASE AND OPTION Agreement entered into as of the first day of June, 1968, by and between FIRST TRUST COMPANY OF MONTANA, a Montana corporation, as Lessor, and L.C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY, as Lessee, is hereby extended for a period of two years with said extension terminating May 31, 1974.

This extension is made upon the following terms and conditions:

I.

Lessee shall pay Lessor in addition to the payment of royalties as set out in the original Mining Lease and Option $250.00 on or before June 1, 1972, and an additional sum of $250.00 on or before June 1, 1973.

II.

In all other respects the provisions of the Mining Lease and Option Agreement dated June 1, 1968, are extended and reaffirmed.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals this 28 day of Feb, 1972.

L. C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY

L. C. Hoffman

FIRST TRUST COMPANY OF MONTANA

BY: Frank Henderson
President

ATTEST:

Raymond B. Leard
Secretary

STATE OF Colorado)
) ss:
COUNTY OF Denver)

On this 28th day of February, 1972, before me, a Notary Public for the State of Montana, personally appeared L.C. Hoffman, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

(SEAL)

Frances C. Newton
NOTARY PUBLIC in and for the
State of Colorado
Residing at Denver
My Commission expires 2-26-75

VIKING EXPLORATION

VIKING EXPLORATION INC.

STATE OF Montana)
) ss.
COUNTY OF Cascade)

On this 3rd day of March, 1972, before me a Notary Public for the State of Montana, personally appeared Forrest E. Henderson, known to me to be the President of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

Maxine K. Kamfam
Notary Public in and for the
State of Montana
Residing at Great Falls
My commission expires Sept. 5, 1974

(SEAL)

EXHIBIT "B"

VIKING EXPLORATION INC.

EXTENSION OF MINING LEASE AND OPTION

The MINING LEASE AND OPTION Agreement entered into as of the first day of June, 1968, by and between FIRST TRUST COMPANY OF MONTANA, a Montana corporation, as Lessor, and L.C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY, as Lessee, is hereby extended for a period of two years with said extension terminating May 31, 1972.

This extension is made upon the following terms and conditions:

1.

Lessee shall pay Lessor in addition to the payment of royalties as set out in the original Mining Lease and Option $250.00 on or before June 1, 1970, and an additional sum of $250.00 on or before June 1, 1971.

11.

In all other respects the provisions of the Mining Lease and Option Agreement dated June 1, 1968, are extended and reaffirmed.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals this 23 day of March, 1970.

L. C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY

L. C. Hoffman

FIRST TRUST COMPANY OF MONTANA

BY: Frank Henderson
President

ATTEST:
Raymond Heard
Secretary

STATE OF Montana)
) ss:
COUNTY OF Silver Bow)

On this 23rd day of March, 1970, before me, a Notary Public for the State of Montana, personally appeared L.C. Hoffman, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

(SEAL)

Louise Hungerford
NOTARY PUBLIC in and for the
State of Montana
Residing at Butte Montana
My Commission expires Nov 15 1972

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

STATE OF _____)
) ss.
COUNTY OF _____)

On this [illegible] day of March, 1970, before me a Notary Public for the State of Montana, personally appeared Forrest E. Henderson, known to me to be the President of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

[illegible]
Notary Public in and for the
State of Montana
Residing at [illegible]
My commission expires [illegible]

(SEAL)

VIKING EXPLORATION INC.

EXHIBIT "A"

VIKING EXPLORATION INC.

MINING LEASE AND OPTION

This MINING LEASE AND OPTION Agreement entered into as of the 1st day of June, 1968, by and between FIRST TRUST COMPANY OF MONTANA, a Montana Corporation, as Lessor, and L. C. HOFFMAN, DOING BUSINESS AS BLUE RANGE MINING COMPANY, as Lessee.

WHEREAS, Lessors are the owners of the following described patented mining claims situated in Fergus County, Montana, to wit:

"Spotted Horse" and "Kentucky Favorite" Quartz Lode Mining Claims, situated in Fergus County, Montana, designated by the Surveyor General of Montana as Lots 42 and 3314, respectively.

NOW, THEREFORE, in consideration of the sum of Ten Dollars ($10.00) and other valuable consideration paid by Lessee to Lessors, receipt of which is hereby acknowledged, and of the royalties hereinafter reserved and the covenants and agreements hereinafter expressed by Lessee to be faithfully kept and performed, the parties hereto mutually and severally covenant and agree as follows:

I.

RIGHTS GRANTED TO LESSEE

Subject to any existing easement, Lessors do hereby demise, let and grant to Lessee the exclusive right and privilege to mine and dispose of all gold, silver, lead, zinc, copper and other minerals (hereinafter referred to as the "leased deposits"), in, upon, under or belonging to the above described patented mining claims (which said mining claims are hereinafter referred to as the "leased premises"), together with the right to construct all such works, buildings, plants, structures and appliances as may be necessary or convenient for the mining, preparation and marketing of the leased deposits, and the exclusive right to the use of the surface of the leased premises for the exercise of the rights and privileges herein granted.

II.

PROPER OPERATION REQUIRED

Lessee shall conduct all operations on the leased premises in the manner necessary to good minerlike and economical mining so as to develop and take out leased deposits ore with due regard to the development of the leased premises and to the special covenants herein provided.

III.

ACTUAL ROYALTIES

Subject to the provisions of Section XXI hereof, Lessee shall pay to the Lessors on all leased deposits extracted and shipped, or sold

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

from the leased premises during the term of this lease, royalties in the following manner:

(a) 5% of the net mint or smelter returns from ores that will not stand shipping or smelter costs in their natural concentrations as mined.
(b) 9% of the net mint, smelter or mill returns from ores that may be shipped in their natural concentrations as mined.
(c) 13% of the net mint, smelter or mill returns from ores that fall in class (b) ores that contain over fifteen (15) ounces per ton of recoverable gold.
(d) 1% additional royalty for each additional ten (10) ounces per ton of recoverable gold to a maximum of 17%.

Net mint, smelter or mill returns, as used herein, shall mean the gross values as figured by the mint, smelter or mill, less all mint, smelter or mill charges or deductions and all transportation and freight charges.

If the transportation, milling or smelting shall be performed by Lessee the transportation, milling or smelting charges shall not exceed the amount for which similar services could be obtained from an independent responsibile third party operating in the area.

No wall rock or other gangue material shall be introduced into the ore for the purpose of lowering the value of the ore to place it in a lower royalty classification, or for any other purpose except to increase mining or metallurgical efficiency.

Any amount due and payable to Lessors as royalties on any shipment of ores or minerals extracted and shipped and sold hereunder shall be paid by Lessee to Lessors on or before the 15th day of the month next succeeding the calendar month during which Lessee shall have received payment for such shipment.

All payments of royalties hereunder by Lessee to Lessors or any assignee or assignees of Lessors or any of them, shall be deposited to the credit of Lessors in the following bank, to-wit:

First National Bank of Lewistown, Lewistown, Montana

or in such other single depository bank as Lessors may designate from time to time by written notice to Lessee.

In addition to the foregoing royalties, Lessee shall pay the Lessor at it's office in Great Falls, Montana, the sum of $100.00 on or before June 1, 1968, and an additional sum of $250.00 on or before June 1, 1969, if Lessee desires to continue this Lease for the year commencing June 1, 1969.

IV.

STATEMENTS TO BE FURNISHED

Lessee shall, on or before the 15th day of each month hereof during which royalties are payable hereunder, furnish Lessors with a written report showing, as to the shipments with respect to which such

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

royalties are so then payable, the tonnage of the leased deposits extracted and shipped or sold from the leased premises, showing the royalties payable thereon and the amounts, if any, withheld by Lessee as aforesaid on account of any outstanding mineral or royalty interest, and also showing as to shipments which were made during the preceeding month but as to which Lessee shall not have received settlement during said preceeding month, the total tonnage of ores and minerals shipped from the leased premises.

Lessee shall, with said statement, furnish Lessors with duplicate copies of the mill or other purchasers' receipts and settlement sheets for the shipment as to which royalties are accounted on said statement.

All such statements and duplicate copies shall be forwarded to the depository bank for Lessors.

V.

BOOKS AND RECORDS

Lessee shall keep and maintain complete and accurate books of account showing the amount of leased deposits extracted from the leased premises, the amount of leased deposits shipped, sold or treated, and the amount of money received or payable from the sale of such leased deposits.

Lessors and the authorized agents of Lessors shall at any and all reasonable times be permitted to inspect all books and records, including assay reports, of Lessee relating to the leased premises in order to ascertain the correct amount of royalties due Lessors or to determine whether or not the provisions of the lease are being complied with.

Upon termination of this lease, other than through the exercise of the option set out in Section XXI hereof, Lessee shall furnish Lessors with copies of the then most recent mining map or maps and with copies of the drilling logs and assay results as to any drill holes which may have been drilled by Lessee upon the leased premises.

VI.

LESSORS RIGHT OF INSPECTION

Lessee shall allow Lessors and the agents of Lessors, from time to time, to enter upon and into Lessee's workings on said leased premises for the purpose of inspection at such reasonable times as shall not interfere with the regular operation of the leased premises. It is understood and agreed that Lessee shall assume no responsibility for the safety of Lessors or the agents of Lessors when and while upon the leased premises for such purpose.

VII.

TRANSFER BY LESSOR SHALL NOT IMPOSE ADDED DUTIES UPON LESSEE

No transfer of any of the leased premises, which may hereafter occur by operation of the law or otherwise, shall impose upon Lessee any

VIKING EXPLORATION INC.

VIKING EXPLORATION INC

obligations of segregation of production or accounting.

VIII.

STATE AND FEDERAL ENACTMENTS -
INDEMNIFICATION OF LESSORS

Lessee in the operation and development of the leased premises shall be subject to all applicable Federal enactments, the laws of the State of Montana, and all Federal or state rules and regulations regarding Employers' Liability, Workmen's Compensation, Social Security and Unemployment Insurance, and said Lessee covenants and agrees to indemnify and hold harmless Lessors from and against the payment of any and all damages, claims, costs and expenses due to the existence of such enactments, and of any and all claims, costs and expenses in connection therewith under any claim of subrogation provided for by said enactments or otherwise; and Lessee shall further indemnify and hold harmless Lessors from and against any and all damages, claims, costs and expenses arising out of damages to property or injuries to or death of the employees of the Lessee, or any other person whomsoever other than Lessors and those acting under Lessors, where such injury, death, or damage occurs because of or in connection with the use, operation, or development in any manner of the leased premises whether such claims are based upon a right conferred by common law or by statute.

IX.

PROPERTY TO BE KEPT FREE OF LIENS

Lessee shall pay and satisfy all claims for materials, supplies, and labor in connection with the working of said mine and mining property, and shall keep said mine and mining property free of liens or encumbrances of any and every kind, except such as might result from state and county tax assessments not required to be paid by Lessee, or such as may result from the acts of others than the Lessee, Lessee's employees or those on privity with the Lessee.

X.

TAXES

(a) Lessors shall pay all Federal, state and county taxes of any kind assessed against Lessors on account of the receipt of royalties by Lessors herein provided to be paid to Lessors by Lessee.

(b) Lessee shall pay all state and county property tax assessments, if any, upon said leased premises which pertain to the use of said premises for mining purposes hereunder. Lessors shall pay all such tax assessments which may pertain to the use of such premises for other than mining purposes hereunder.

(c) Lessee shall pay all state and county tax assessments upon any and all structures and other improvements, machinery, equipment, tools, supplies and personal property whatsoever placed upon the leased premises by the Lessee.

VIKING EXPLORATION INC

VIKING EXPLORATION INC

(d) Such state and county taxes, if any, as may be assessed because of the severance or production by the Lessee of leased deposits and such state and county taxes, if any, as may be assessed against the leased premises because of additional value placed thereon by reason of the leased deposits therein, shall be prorated between and shall be paid by Lessee and Lessors in proportion to their respective participations in the proceeds thereof; PROVIDED, HOWEVER, that as to any taxes referred to in subsections (b) and (d) Lessee's obligation, in respect to the calendar year in which this lease is executed and in respect to the calendar year in which this lease is terminated, shall, unless Lessee shall exercise the option referred to in Section XXI hereof, be limited to payment of a proportion of such taxes determined by the ratio to 365 of the number of days in such calendar year during which this lease was in force and effect.

XI.

PROTECTION AGAINST LIENS ARISING THROUGH LESSORS DEFAULT

In the event there are any liens or encumbrances against said leased premises, or in the event any liens or encumbrances shall hereafter accrue against the same by acts or neglects of Lessors, then Lessee may at Lessee's option pay and discharge the same, and if Lessee elects to do so, then Lessors agree to repay Lessee upon demand all such sums so paid by the Lessee, together with interest thereon from the date of payment of said sums at the rate of eight per cent (8%) per annum until paid. Lessee may apply any amount so becoming payable to Lessee by Lessors as a credit in payment or reduction of any amount thereafter becoming payable under Section III or Section V hereof.

XII.

TERM OF LEASE

This lease shall be and remain in effect and force for a term of two (2) years from and after June 1, 1968, unless sooner terminated through surrender as hereinbefore set out, or through exercise of the option hereinafter granted to Lessee or through forfeiture. Lessee may not extend this lease except by special arrangement with Lessor, said arrangement to be negotiated at least thirty (30) days prior to the termination of the first term.

XIII.

LAWS AND REGULATIONS

This lease shall be subject to the laws of the State of Montana and to the rules and regulations of the regulatory bodies of such state having jurisdiction thereof, and to all other applicable state and Federal laws, rules and regulations.

XIV.

FORCE MAJEURE

All obligations of Lessee shall be suspended while, but only as long as Lessee is prevented from complying with such obligations, in

VIKING EXPLORATION INC

VIKING EXPLORATION INC.

whole or in part, by strikes, lockouts, acts of God, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials or services in open market, inadequate facilities for the transportation of materials, any state or Federal law, regulation or order, or other matters, exclusive of financial inabilities of Lessee, beyond the reasonable control of the Lessee, whether similar to the matters herein specifically enumerated or not; PROVIDED, HOWEVER, that performance shall be resumed within a reasonable time after such cause has been removed; and PROVIDED FURTHER, that Lessee shall not be required against Lessee's will to adjust any labor dispute or to question the validity or to refrain from judicially testing the validity of any state or Federal order, regulation or law.

XV.

TERMINATION

This lease is made under the condition that Lessee shall perform all of the covenants and agreements herein set forth to be performed by the Lessee. If Lessee shall fail to make payment of royalties when due and payable or shall fail to comply with any of the other conditions or requirements of this lease, Lessor may, upon the giving of thirty (30) days' notice in writing to Lessee of the default, cancel and forfeit this lease unless within said thirty (30) day period, Lessee shall cure the default if the default relates to the payment of royalties or unless within said thirty (30) day period, if the default relates to other than the payment of royalties, Lessee shall undertake in good faith to cure the default and shall diligently proceed to remedy the default.

XVI.

LESSEE'S RIGHT OF SURRENDER

It is mutually understood and agreed that Lessee may at any time surrender and terminate this lease as to all or any portion of the leased premises upon giving to Lessors thirty (30) days' notice in writing and paying to Lessors all royalties and other sums due and payable to Lessors to the effective date of surrender.

Lessee shall, on or before such effective date of surrender, deliver to Lessors a release and quit claim of all rights under this Mining Lease and Option as to the so surrendered property. No partial surrender shall operate to reduce or affect the minimum advance royalties specified herein. Upon complete surrender, Lessee shall be relieved of all obligations hereunder except as otherwise provided in the next preceeding and next succeeding paragraph hereof.

No complete surrender shall relieve Lessee from its obligation to pay any actual royalty, rental or other payments which are due and payable but unpaid prior to the effective date of surrender, or to perform any obligation which may have accrued under Paragraph XX below. However, except as otherwise expressly provided in the first paragraph of this Section XVII, such complete surrender shall relieve Lessee of any obligation to pay any rental or minimum advance royalty

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

payments which, except for such surrender would have been payable after the effective date of surrender. No surrender shall relieve Lessee from its obligation to pay any royalties as to leased deposits mined and shipped or sold prior to the effective date of surrender, or from any obligation hereunder arising out of any act or omission of Lessee prior to the effective date of surrender.

XVII.

REMOVAL OF EQUIPMENT

It is mutually understood and agreed that, in case of forfeiture, surrender or expiration of this lease, all installed underground air and water lines, installed underground power lines, installed underground trackage (rails and ties), shall be and remain a part of the realty and shall revert to Lessors without further consideration or compensation.

It is further understood and agreed that all personal property of Lessee located within or upon the leased premises, and all buildings, machinery, equipment and tools (other than the fixtures to become the property of Lessors as above provided), shall, in case of forfeiture, surrender or other termination of this lease, remain upon the leased premises, and be held as a guarantee in lieu of bond until all terms of this lease with respect to payment of royalties and the preservation of the property shall have been complied with. Upon such compliance with and performance of such conditions and obligations, Lessee shall be entitled to, and may, within ninety (90) days after such termination of this lease or within such extension of time as may be granted by Lessors, remove from the leased premises such personal property and improvements, other than those items which are to remain the property of Lessors as above provided.

XVIII.

MINIMUM OPERATION GUARANTEED

Lessee agrees to perform a minimum labor upon the leased premises equal to one thousand ($1,000.00) dollars per month of duration of this lease, although the aforementioned labor need not be done on a monthly basis, the value of improvements and expenditures upon the leased premises at the time of termination of this lease shall be equal to the number of months this lease was in effect times the amount stated.

XIX.

OPTION - ESCROW

Lessors agree that at any time after Lessee shall have paid to Lessors or to the depository bank for Lessors (as a result of any royalty payments made in accordance herewith and any additional cash purchase price payment or payments which Lessee may elect to make), for

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

Lessors an aggregate sum of Thirty Thousand Dollars ($30,000.00), Lessee shall, upon giving to Lessors written notice and paying to Lessors the sum of Ten Dollars $10.00), have the exclusive rights and option to demand and receive from Lessors, their successors in interest and legal representatives or assigns, a good, sufficient and properly executed and acknowledged quit claim deed conveying to Lessee, or its successor or successors in interest, all of the leased premises particularly described above, together with all and whatsoever the rights, titles and interest therein and thereunder.

Upon delivery of such mining deed to Lessee (grantee) or its successors in interest, the lease provided for in this instrument shall cease and terminate and all rights of the Lessors with respect to the property conveyed by such mining deed and any future royalty obligations of Lessee shall terminate.

IN WITNESS WHEREOF, the parties hereunto set their hands and seals this 13 day of May, 1968.

L. C. HOFFMAN, DOING BUSINESS AS
BLUE RANGE MINING COMPANY

L.C. Hoffman

FIRST TRUST COMPANY OF MONTANA

BY: Frank Henderson
President

ATTEST:

Raymond R. Heard
Secretary

STATE OF Montana)
) ss:
COUNTY OF Silver Bow

On this 13th day of May, 1968, before me, a Notary Public for the State of Montana, personally appeared L. C. Hoffman, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

Louise Hungerford
NOTARY PUBLIC in and for the
State of Montana
Residing at Butte Montana
My Commission expires Nov. 15 1969

(SEAL)

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

STATE OF Montana)
) ss.
COUNTY OF Cascade)

On this 14 day of May, 1968, before me a Notary Public for the State of Montana, personally appeared Forrest E. Henderson, known to me to be the President of the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

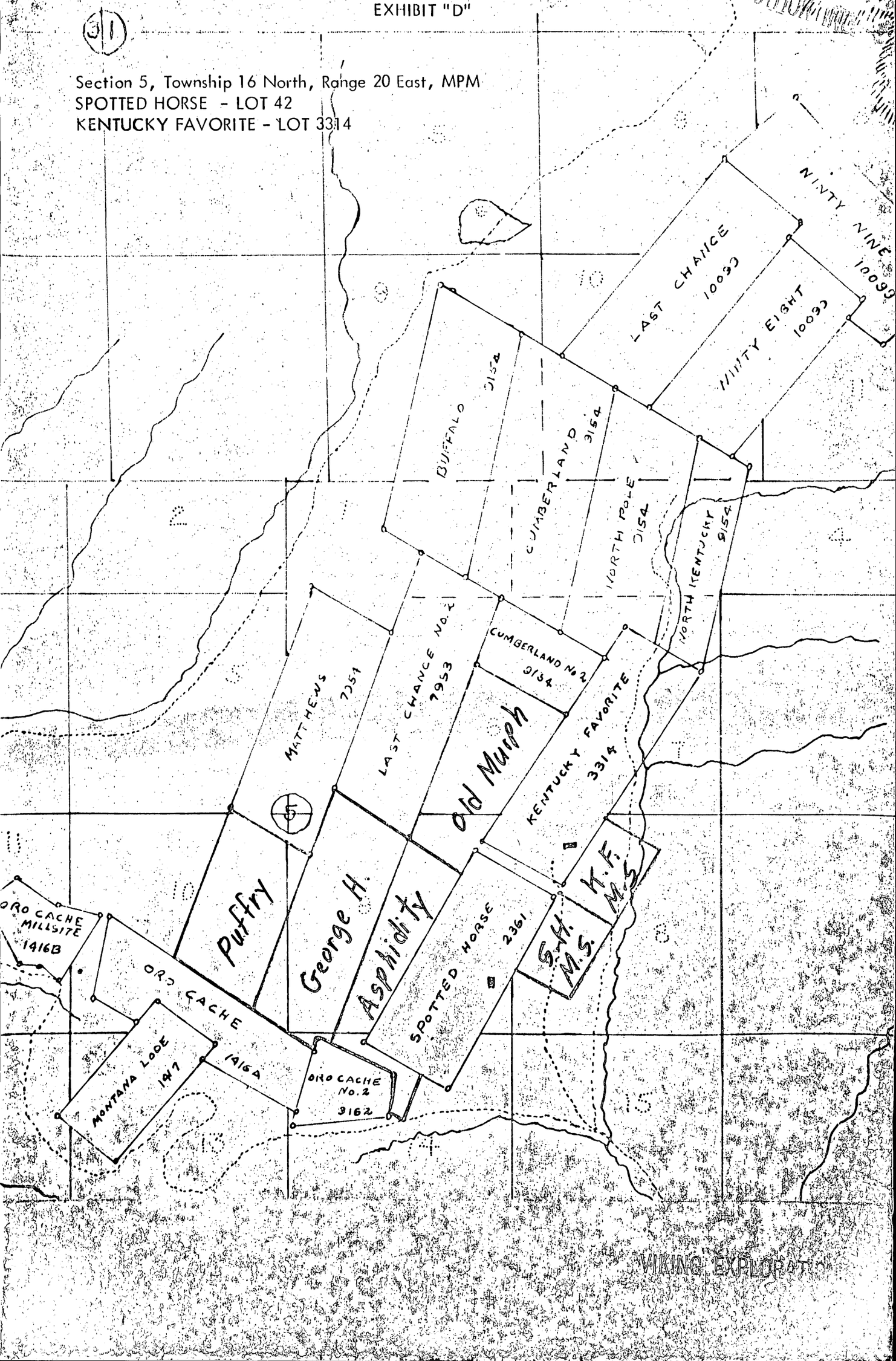
(SEAL)

Jean L. Hanlill
Notary Public in and for the
State of Montana
Residing at Great Falls
My commission expires 3-28-70

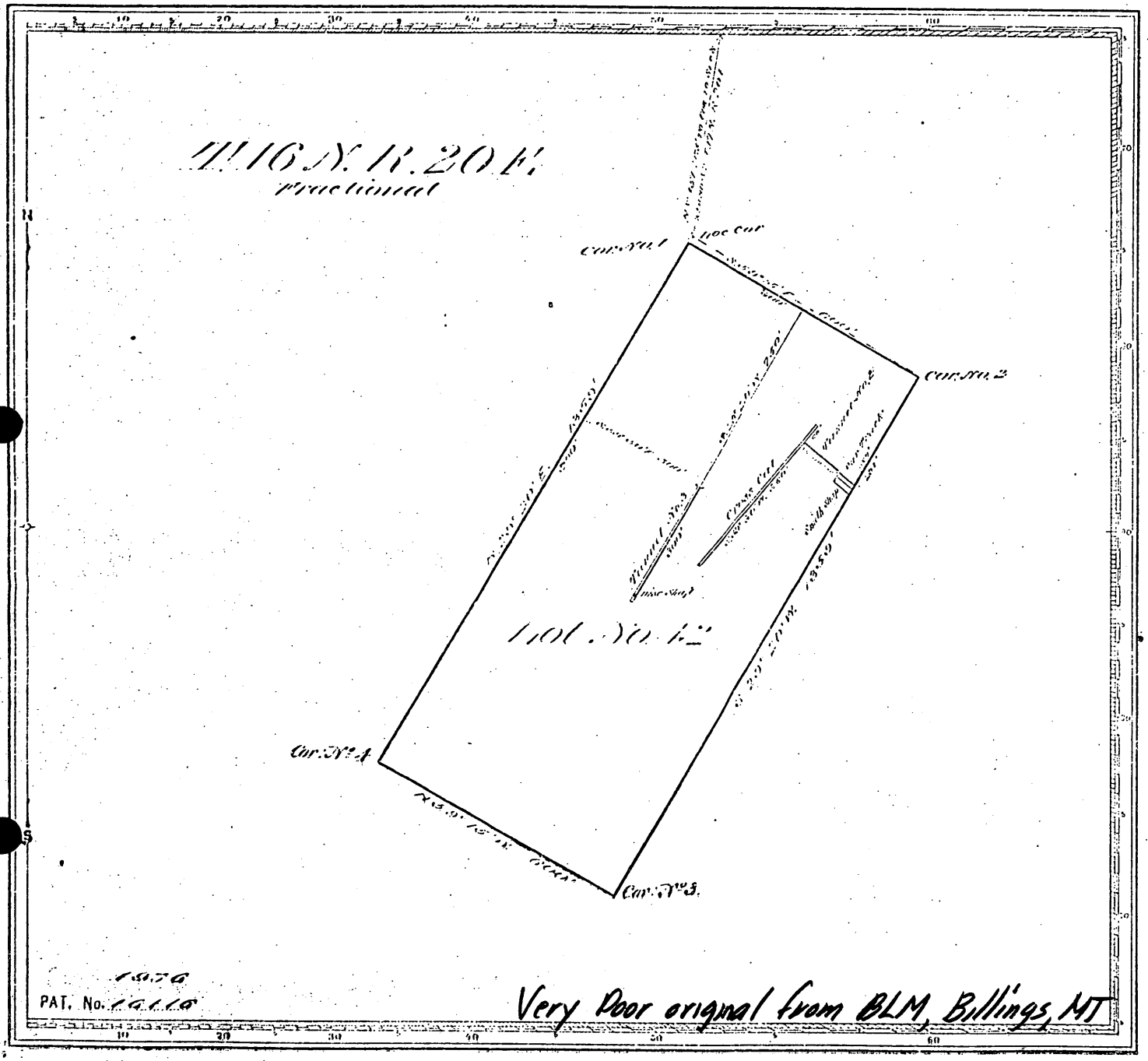
VIKING EXPLORATION INC.

EXHIBIT "D"

Section 5, Township 16 North, Range 20 East, MPM
SPOTTED HORSE - LOT 42
KENTUCKY FAVORITE - LOT 3314



VIKING EXPLORATION



Claim Located Sept 3rd 1871 Recorded July 12th 1875

Mineral Survey No. 2361

LOT No. 42

Helena Land District.

PLAT

OF THE CLAIM OF

Clara N. McAlear

KNOWN AS THE

Spotted Horse Lode

IN Warm Springs MINING DISTRICT,
Powers COUNTY, Montana.
Containing an Area of 15.5 Acres.
Scale of 200 feet to the inch.
Variation 21° 45' E.

SURVEYED December 12th 1873, 1875 BY
George H. Stafford,
U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of
Clara N. McAlear
known as the

Spotted Horse Lode

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or his grantors, and that said improvements consist of Hoist, shaft, 3 tunnels, cross cuts and building valued at $2300.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office, Helena Montana. J. H. Greene, U.S. Surveyor General for Montana

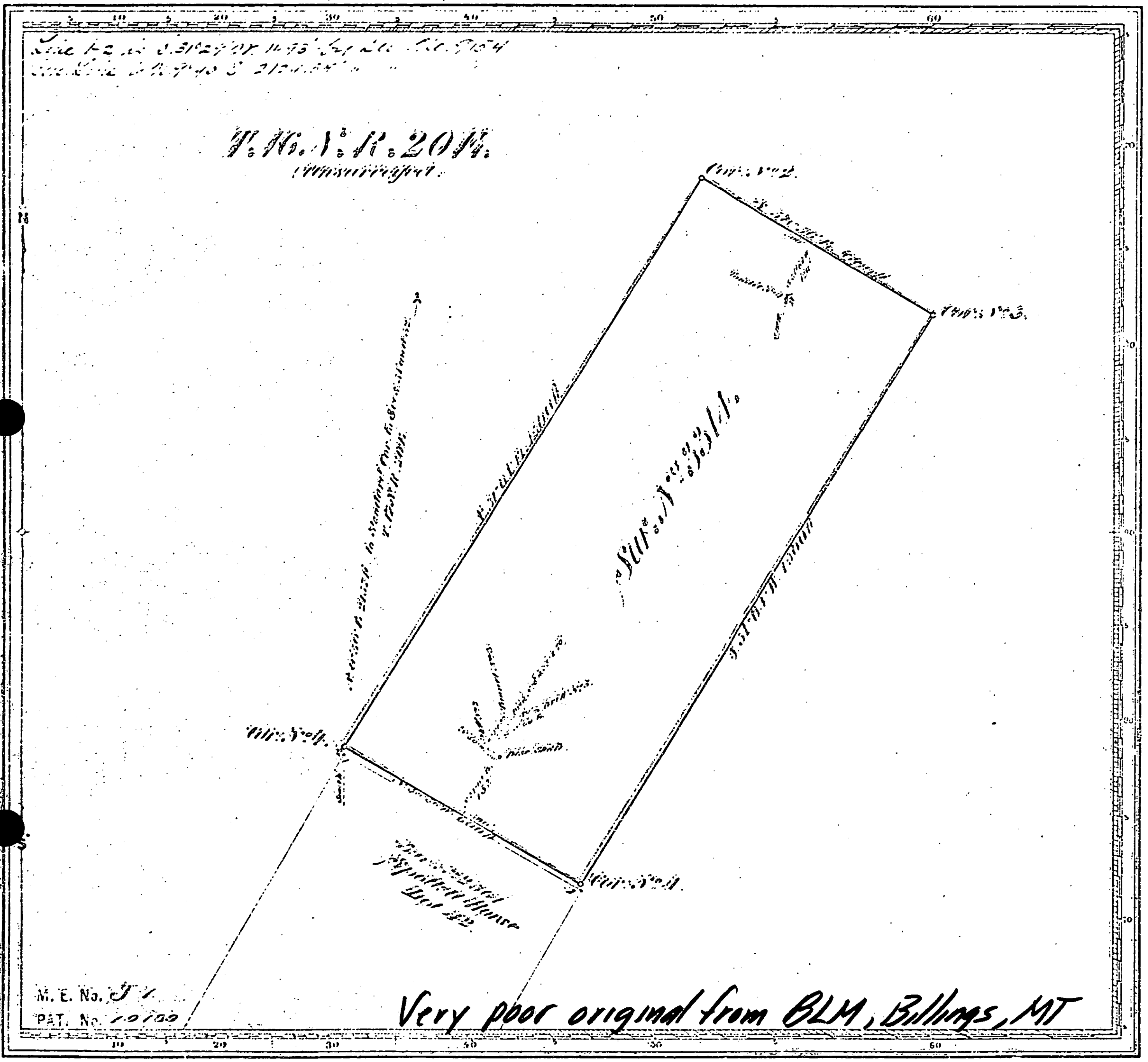
Jan. 12th, 1875.

2361

Index. Claim.
Index. Claimant.
Con. Sheets. 3/6

2361

Con. Line agrees with 2061



3314

Index Claim.
Index Claimant
Con. Sheets. 516, 1677

Claim Located August 15th 1890

Mineral Survey No. 3314

LOT No.
Lewiston Land District.

PLAT

OF THE CLAIM OF

William P. Brainard et al

KNOWN AS THE

Kentucky Favorite Lode

IN Warm Spring Mining District,
Fergus COUNTY, Montana
Containing an Area of 20.66 Acres.
Scale of 200 feet to the inch.
Variation 19° E
SURVEYED November 16-17 1890 BY
William E. Kerr,
U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of
William P. Brainard et al.
known as the

Kentucky Favorite Lode

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants or their grantors, and that said improvements consist of one shaft, stope, two tunnels and two drifts valued at $3210.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office
Helena, Montana, Geo. O. Eaton
Dec. 20th, 1890. U.S. Surveyor General for Montana

3314

45901

NO. 114A — CERTIFICATE OF LOCATION.

VIKING EXPLORATION INC.

CERTIFICATE OF LOCATION

Of the OLD MURPH Quartz Lode Mining Claim

I, Ruth Kelly Hoffman *a citizen of the United States* as Agent of Blue Range Mining Company *of lawful age, do hereby certify and declare as follows, to-wit:*

That on the 22nd *day of* November *A. D. 197*1*, the* Old Murph *Quartz Lode Mining Claim, situate in* Warm Spring Unorganized *Mining District, County of* Fergus *State of Montana, was duly discovered.*

That on said day a written or printed Notice of Location of said claim was duly posted, conspicuously, at the point of discovery on said claim, which said notice contained the name of the locator....., the date of the location (which said date of location was the date of the posting of such notice), and the approximate area of the claim intended to be appropriated.

That thereafter and within thirty days of the posting of said notice of location the locator.... distinctly marked the location of said claim on the ground so that its boundaries could be readily traced, by placing monuments at each corner and angle of said claim, which said monuments consist of trees, post, stumps, stones and boulders described as follows, to-wit:

Beginning at the Cor. No. 1 *of this claim which is* also the Southeast cor. of Cumberland #2 Quartz Lode Mining Claim, Survey No. 9154, *marked* Cor. No. 1 *of the* Old Murph *Lode.*

Thence First Course South-southwest *a distance of* 1200 ± *feet to the* Cor. No. 2 *of this claim, which is* also Cor. No. 1 of the Asphidity Lode *marked* Cor. No. 2 *of the* Old Murph *Lode.*

Thence Second Course West-northwest *a distance of* 600 ± *feet to the* Cor. No. 3 *of this claim, which is* also the Southeast corner of Last Chance #2 Lode, *marked* Cor. No. 3 *of the* Old Murph *Lode.*

Thence Third Course North-northeast *a distance of* 1200 ± *feet to the* Cor. No. 4 *of this claim, which is* also the Southwest corner of Cumberland #2 Lode *marked* Cor. No. 4 *of the* Old Murph *Lode.*

Thence Fourth Course East-southeast / along the South side-line of Cumberland #2 ~~a distance of xxxxxxxxxxxx feet to the~~ Cor. No. 1, *the place of beginning.*

That each tree so marked was at least eight inches in diameter, and blazed on four sides; that each post so marked was at least four inches square by four feet and six inches in length set one foot in the ground, except where solid rock occurred at less depth, in which case the post was set upon such rock, and in all cases such posts were surrounded by a mound of earth and stone at least four feet in diameter by two feet in height, that each stump so marked was squared and was at least eight inches in diameter by four feet in height, and was surrounded by a mound of earth and stone four feet in diameter by two feet in height; that each stone so marked was at least six inches square by eighteen inches in length, set two-thirds of its length in the ground, with a mound of earth and stone alongside at least four feet in diameter by two feet in height; that each boulder so marked was at least three feet above the natural surface of the ground on the upper side of said boulder.

That within sixty days after the date of posting said notice of location:

1. The locator.... named herein sunk a discovery shaft on said claim at the point of discovery..... feet by..... feet, to the depth of at least ten feet vertically, below the lowest part of the rim of such shaft at the surface, and that the cubical contents of said shaft excavated is not less than one hundred and fifty cubic feet. (If you sink a discovery shaft, cancel all of paragraphs 2 and 3.)

2. The locator.... named herein excavated an open cut on said claim at the point of discovery ten *feet wide by* fifteen *feet long and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said cut consists of at least one hundred and fifty cubic feet of excavation. (If you excavate an open cut, cancel all of paragraphs 1 and 3.)*

3. The locator.... named herein excavated a tunnel on said claim at the point of discovery..... feet wide by..... feet in height, and..... feet in length, and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said tunnel consists of at least one hundred and fifty cubic feet of excavation. (If you excavate a tunnel, cancel all of paragraphs 1 and 2.)

That said locator.... did there, in the bottom of said cut *(Shaft, Cut or Tunnel) at the lowest vertical depth thereof, disclose the vein, lode or deposit so located.*

That said locator.... claims 600 *feet in a* Southwesterly *direction, and* 600 *feet in a* Northeasterly *direction, along the course of the vein each way from the discovery shaft, and* 300 *feet on each side of the center of the vein, the same being* 600 *feet wide by* 1200 *feet in length.*

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

That the following reference is hereby made to natural objects and permanent monuments so as to identify said claim, to-wit:

The Old Murph Lode is is Lots 6 and 9 of Section 5, Tp. 16 N., R. 20 E., M. M.

That the following claims adjoin this claim, to-wit: On the North the Cumberland #2 *Quartz Lode Mining Claim. On the South the* Asphidity *Quartz Lode Mining Claim. On the East the* Spotted Horse and Kentucky Favorite *Quartz Lode Mining Claims On the West the* Last Chance #2 *Quartz Lode Mining Claim.*

That the claim is located, marked and designated as aforesaid is named and known as the Old Murph *Quartz Lode Mining Claim, and it is situate in* Warm Spring Unorg. *Mining District, County of* Fergus, *State of Montana.*

That the name of the locator and claimant follows, to-wit:

BLUE RANGE MINING COMPANY

BY Ruth Kelly Hoffman
Agent

Locator and Claimant

STATE OF MONTANA,
County of Fergus } ss.

Ruth Kelly Hoffman *being first duly sworn, on his oath says: That he is a citizen of the United States, and that he is of lawful age, that he is* the Agent of the *the locator and claimant of the* Old Murph *Quartz Lode Mining Claim; that said location is made in good faith; that this "Certificate of Location" is made in good faith, and for the purpose of securing and enjoying all the right and benefits of Chapter 16 of the Laws of 1907 of the State of Montana entitled: "An Act governing the manner of locating, recording and holding possession of mining claims upon the public domain of the United States within the State of Montana," approved February 18, 1907; and that the matters and things stated in the foregoing "Certificate of Location" are true of his own knowledge.*

Ruth Kelly Hoffman

Subscribed and sworn to before me this 14th *day of* March, *A. D. 1972*

Audrey C. Sobol
Notary Public for the State of Montana.

Residing at Lewistown, Montana *My Commission expires* May 1, 1974

45901

Certificate of Location

Of the _____ *Quartz Lode Mining Claim*

Mining District,

County, State of Montana.

STATE OF MONTANA,
County of Fergus } ss.

Filed for Record on the _____ *day of* MAR 14 1972 *A. D. 19*

at 8.50 *o'clock* A. M., *and recorded in Book* 17 *of Lode Locations, at Page* 38

My Rutten *County Clerk.*

By _____ *Deputy.*

Fee, $ 4.00

VIKING EXPLORATION INC

Ruth Hoffman
Court House

45300

NO. 114A — CERTIFICATE OF LOCATION. VIKING STATE PUBLISHING CO., HELENA, MONT.

VIKING EXPLORATION INC.

CERTIFICATE OF LOCATION

Of the ASPHIDITY Quartz Lode Mining Claim

I, Ruth Kelly Hoffman *a citizen of the United States* as Agent of the Blude Range Mining Company, *of lawful age, do hereby certify and declare as follows, to-wit:*

That on the 22nd *day of* November *A. D. 197*1, *the* Asphidity *Quartz Lode Mining Claim, situate in* Warm Spring Unorganized *Mining District, County of* Fergus *State of Montana, was duly discovered.*

That on said day a written or printed Notice of Location of said claim was duly posted, conspicuously, at the point of discovery on said claim, which said notice contained the name of the locator....., the date of the location (which said date of location was the date of the posting of such notice), and the approximate area of the claim intended to be appropriated.

That thereafter and within thirty days of the posting of said notice of location the locator.... distinctly marked the location of said claim on the ground so that its boundaries could be readily traced, by placing monuments at each corner and angle of said claim, which said monuments consist of trees, post, stumps, stones and boulders described as follows, to-wit:

Beginning at the Cor. No. 1 *of this claim which is* within the boundary of the Spotted Horse Quartz Lode Mining Claim, Sur. No. 2361, being 140 feet, more or less, South of the Northwest corner of said Spotted Horse Quartz Lode Mining Claim, *marked* Cor. No. 1 *of the* Asphidity *Lode,*

Thence First Course South-southwest *a distance of* 1500 ± *feet to the* Cor. No. 2 *of this claim, which is a* post *marked* Cor. No. 2 *of the* Asphidity *Lode,*

Thence Second Course West-northwest *a distance of* 600 ± *feet to the* Cor. No. 3 *of this claim, which is a* point on the Southeast line of the George H. Lode *marked* Cor. No. 3 *of the* Asphidity *Lode,*

Thence Third Course North-northeast *a distance of* 1500 feet along the Southeasterly side-line of the George H. Lode to Cor. No. 4 *of this claim, which is* the Southeast corner of Last Chance #2 Quartz Lode Claim, *marked* Cor. No. 4 *of the* Asphidity *Lode,*

Thence Fourth Course East-southeast *a distance of* 600 ± *feet to the* Cor. No. 1, *the place of beginning.*

That each tree so marked was at least eight inches in diameter, and blazed on four sides; that each post so marked was at least four inches square by four feet and six inches in length set one foot in the ground, except where solid rock occurred at less depth, in which case the post was set upon such rock, and in all cases such posts were surrounded by a mound of earth and stone at least four feet in diameter by two feet in height, that each stump so marked was squared and was at least eight inches in diameter by four feet in height, and was surrounded by a mound of earth and stone four feet in diameter by two feet in height; that each stone so marked was at least six inches square by eighteen inches in length, set two-thirds of its length in the ground, with a mound of earth and stone alongside at least four feet in diameter by two feet in height; that each boulder so marked was at least three feet above the natural surface of the ground on the upper side of said boulder.

That within sixty days after the date of posting said notice of location:

1. The locator.....named herein sunk a discovery shaft on said claim at the point of discovery..... feet by.....feet, to the depth of at least ten feet vertically, below the lowest part of the rim of such shaft at the surface, and that the cubical contents of said shaft excavated is not less than one hundred and fifty cubic feet. (If you sink a discovery shaft, cancel all of paragraphs 2 and 3.)

2. The locator.... named herein excavated an open cut on said claim at the point of discovery ten *feet wide by* fifteen *feet long and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said cut consists of at least one hundred and fifty cubic feet of excavation. (If you excavate an open cut, cancel all of paragraphs 1 and 3.)*

3. The locator.... named herein excavated a tunnel on said claim at the point of discovery.....feet wide by.....feet in height, and.....feet in length, and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said tunnel consists of at least one hundred and fifty cubic feet of excavation. (If you excavate a tunnel, cancel all of paragraphs 1 and 2.)

That said locator.... did there, in the bottom of said cut *(Shaft, Cut or Tunnel) at the lowest vertical depth thereof, disclose the vein, lode or deposit so located.*

That said locator.... claims 1000 *feet in a* Southwesterly *direction, and* 500 *feet in a* Northeasterly *direction, along the course of the vein each way from the discovery shaft, and* 300 *feet on each side of the center of the vein, the same being* 600 *feet wide by* 1500 *feet in length.*

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

That the following reference is hereby made to natural objects and permanent monuments so as to identify said claim, to-wit:

The Asphidity Lode is located in Lots 9 and 14 of Section 5, Tp. 16 N., R. 20 E., M. M.

That the following claims adjoin this claim, to-wit: On the North the Old Murph *Quartz Lode Mining Claim. On the South the* Oro Cache #2 *Quartz Lode Mining Claim. On the East the* Spotted Horse *Quartz Lode Mining Claim. On the West the* George H. *Quartz Lode Mining Claim.*

That the claim is located, marked and designated as aforesaid is named and known as the Asphidity *Quartz Lode Mining Claim, and it is situate in* Warm Spring Unorg. *Mining District, County of* Fergus, *State of Montana.*

That the name..... of the locator..... and claimant..... follows, to-wit:

BLUE RANGE MINING COMPANY
By Ruth Kelly Hoffman
Agent

Locator..... and Claimant.....

STATE OF MONTANA,
County of FERGUS } ss.

Ruth Kelly Hoffman *being first duly sworn, on his oath says: That he is a citizen of the United States, and that he is of lawful age, that he is* the Agent of *the locator..... and claimant..... of the* Asphidity *Quartz Lode Mining Claim; that said location is made in good faith; that this "Certificate of Location" is made in good faith, and for the purpose of securing and enjoying all the right and benefits of Chapter 16 of the Laws of 1907 of the State of Montana entitled: "An Act governing the manner of locating, recording and holding possession of mining claims upon the public domain of the United States within the State of Montana," approved February 18, 1907; and that the matters and things stated in the foregoing "Certificate of Location" are true of his own knowledge.*

Ruth Kelly Hoffman

Subscribed and sworn to before me this 14th *day of* March, *A. D. 1972*

Audrey A. Sokol
Notary Public for the State of Montana.

Residing at Lewistown, Montana *My Commission expires* May 1, 1974

45900

Certificate of Location

Of the..... Quartz Lode Mining Claim..... Mining District, ... County, State of Montana.

STATE OF MONTANA, } ss.
County of Fergus

Filed for Record on the..... day of MAR 1 1972, *A. D. 19..... at* 8:50 *o'clock* A *M., and recorded in Book* 17 *of Lode Locations, at Page* 237

May Kadlec
County Clerk.

By..... Deputy.

Fee, $ 4.00 paid

VIKING EXPLORATION INC

45899

VIKING EXPLORATION INC.

NO. 114A — CERTIFICATE OF LOCATION. STATE PUBLISHING CO., HELENA, MONT.

CERTIFICATE OF LOCATION

Of the GEORGE H. Quartz Lode Mining Claim

I, Ruth Kelly Hoffman, as Agent of Blue Range Mining Company, a citizen of the United States of lawful age, do hereby certify and declare as follows, to-wit:

That on the 22nd day of November A. D. 197[illegible], the George H. Quartz Lode Mining Claim, situate in Warm Spring Unorganized Mining District, County of Fergus State of Montana, was duly discovered.

That on said day a written or printed Notice of Location of said claim was duly posted, conspicuously, at the point of discovery on said claim, which said notice contained the name of the locator....., the date of the location (which said date of location was the date of the posting of such notice), and the approximate area of the claim intended to be appropriated.

That thereafter and within thirty days of the posting of said notice of location the locator.... distinctly marked the location of said claim on the ground so that its boundaries could be readily traced, by placing monuments at each corner and angle of said claim, which said monuments consist of trees, post, stumps, stones and boulders described as follows, to-wit:

Beginning at the Cor. No. 1 of this claim which is the Southeast corner of the Last Chance #2 Quartz Lode Mining Claim, Survey No. 7953 marked Cor. No. 1 of the George H. Lode.

Thence First Course South-southwest a distance of 1350 ± feet to the Cor. No. 2 of this claim, which is a point on the North sideline of the Oro Cache Quartz Lode Mining Claim, Survey No. 1416A marked Cor. No. 2 of the George H. Lode.

Thence Second Course North-northwest a distance of 600 ft. ± along the North sideline of the Oro Cache Quartz Lode Mining Claim to Cor. No. 3 of this claim, which is also Cor. #2 of the Puffrey Quartz Lode Mining Claim, marked Cor. No. 3 of the George H. Lode.

Thence Third Course North-northeast a distance of 1350 feet ± along the Southeast side line of the Puffrey Lode to Cor. No. 4 of this claim, which is the Southwest cor. of Last Chance No. 2 Quartz Lode mining claim, marked Cor. No. 4 of the George H. Lode.

Thence Fourth Course East-southeast along the Southerly line of the Last Chance #2 to feet to the Cor. No. 1, the place of beginning.

That each tree so marked was at least eight inches in diameter, and blazed on four sides; that each post so marked was at least four inches square by four feet and six inches in length set one foot in the ground, except where solid rock occurred at least depth, in which case the post was set upon such rock, and in all cases such posts were surrounded by a mound of earth and stone at least four feet in diameter by two feet in height, that each stump so marked was squared and was at least eight inches in diameter by four feet in height, and was surrounded by a mound of earth and stone four feet in diameter by two feet in height; that each stone so marked was at least six inches square by eighteen inches in length, set two-thirds of its length in the ground, with a mound of earth and stone alongside at least four feet in diameter by two feet in height; that each boulder so marked was at least three feet above the natural surface of the ground on the upper side of said boulder.

That within sixty days after the date of posting said notice of location:

1. The locator.... named herein sunk a discovery shaft on said claim at the point of discovery..... feet by..... feet, to the depth of at least ten feet vertically, below the lowest part of the rim of such shaft at the surface, and that the cubical contents of said shaft excavated is not less than one hundred and fifty cubic feet. (If you sink a discovery shaft, cancel all of paragraphs 2 and 3.)

2. The locator.... named herein excavated an open cut on said claim at the point of discovery ten feet wide by fifteen feet long and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said cut consists of at least one hundred and fifty cubic feet of excavation. (If you excavate an open cut, cancel all of paragraphs 1 and 3.)

3. The locator.... named herein excavated a tunnel on said claim at the point of discovery..... feet wide by..... feet in height, and..... feet in length, and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said tunnel consists of at least one hundred and fifty cubic feet of excavation. (If you excavate a tunnel, cancel all of paragraphs 1 and 2.)

That said locator.... did there, in the bottom of said cut (Shaft, Cut or Tunnel) at the lowest vertical depth thereof, disclose the vein, lode or deposit so located.

That said locator.... claims 475 feet in a Southwesterly direction, and 875 feet in a Northeasterly direction, along the course of the vein each way from the discovery shaft, and 300 feet on each side of the center of the vein, the same being 600 feet wide by 1350 feet in length.

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

That the following reference is hereby made to natural objects and permanent monuments so as to identify said claim, to-wit:

The George H. Lode is situated in Lots 9, 10, 14 of Section 5, Tp. 16 N., R. 20 E., M. M.

That the following claims adjoin this claim, to-wit: On the North the Last Chance No. 2, sur. No. 7953 *Quartz Lode Mining Claim. On the South the* Oro Cache & Oro Cache #2 *Quartz Lode Mining Claims. On the East the* Asphidity *Quartz Lode Mining Claim. On the West the* Puffrey & Matthews *Quartz Lode Mining Claims.*

That the claim is located, marked and designated as aforesaid is named and known as the George H. *Quartz Lode Mining Claim, and it is situate in* Warm Spring Unorg. *Mining District, County of* Fergus, *State of Montana.*

That the name..... of the locator..... and claimant..... follows, to-wit:

BLUE RANGE MINING COMPANY

By Ruth Kelly Hoffman
Agent

Locator..... and Claimant.....

STATE OF MONTANA,
County of Fergus } ss.

Ruth Kelly Hoffman *being first duly sworn, on his oath says: That he is a citizen of the United States, and that he is of lawful age, that he is* the Agent of *the locator..... and claimant..... of the* George H. *Quartz Lode Mining Claim; that said location is made in good faith; that this "Certificate of Location" is made in good faith, and for the purpose of securing and enjoying all the right and benefits of Chapter 16 of the Laws of 1907 of the State of Montana entitled: "An Act governing the manner of locating, recording and holding possession of mining claims upon the public domain of the United States within the State of Montana," approved February 18, 1907; and that the matters and things stated in the foregoing "Certificate of Location" are true of his own knowledge.*

Ruth Kelly Hoffman

Subscribed and sworn to before me this 14th *day of* March, *A. D. 1972*

Andrey A. Sokol
Notary Public for the State of Montana.

Residing at Lewistown *My Commission expires* May 1, 1974

45800

Certificate of Location

Of the..... Quartz Lode Mining Claim..... Mining District, County, State of Montana.

STATE OF MONTANA,
County of Fergus } ss.

Filed for Record on the MAR 14 1972 *A. D. 19..... day of..... at* 8:50 *o'clock* A. *M., and recorded in Book* 17 *of Lode Locations, at Page* 336

Mary Pattison
County Clerk.

By..... Deputy.

Fee, $ 4.00

VIKING EXPLORATION INC

45898

NO. 114A — CERTIFICATE OF LOCATION. STATE PUBLISHING CO., HELENA, MONT.

CERTIFICATE OF LOCATION

Of the PUFFREY Quartz Lode Mining Claim

I, Ruth Kelly Hoffman *a citizen of the United States* as Agent of the Blue Range Mining Company *of lawful age, do hereby certify and declare as follows, to-wit:*

That on the 22nd *day of* November *A. D. 1971, the* Puffrey *Quartz Lode Mining Claim, situate in* Warm Spring *Mining District, County of* Fergus, *State of Montana, was duly discovered.*

That on said day a written or printed Notice of Location of said claim was duly posted, conspicuously, at the point of discovery on said claim, which said notice contained the name of the locator......., the date of the location (which said date of location was the date of the posting of such notice), and the approximate area of the claim intended to be appropriated.

That thereafter and within thirty days of the posting of said notice of location the locator.... distinctly marked the location of said claim on the ground so that its boundaries could be readily traced, by placing monuments at each corner and angle of said claim, which said monuments consist of trees, post, stumps, stones and boulders described as follows, to-wit:

Beginning at the ...... *Cor. No. 1 of this claim which is* ~~xx~~ The Southeast corner of the Matthews Quartz Lode Mining Claim, Survey No. 7954 ------------------

marked ...... *Cor. No. 1 of the* Puffrey *Lode,*

Thence First Course South-Southwest *a distance of* 1000 ± *feet to the*

Cor. No. 2 of this claim, which is a point on the North side of the Oro Cache Quartz Lode Mining Claim, Sur. No. 1416A ------------------------------

marked ...... *Cor. No. 2 of the* Puffrey *Lode,*

Thence Second Course North-Northwest along/ the North side of the Oro Cache Claim 600 feet ± ~~xx distance of xxxxxxxxxxxxxx feet to the xxxxxxxxxxxxx~~

~~Cor. No. 3 of this claim, which is a~~ to Cor. No. 3 of this claim, which is a post

marked ...... *Cor. No. 3 of the* Puffrey *Lode,*

Thence Third Course North-Northeast *a distance of* 1000 ± *feet to the*

Cor. No. 4 of this claim, which is adentical with the Southwest corner of Matthews Claim

marked ...... *Cor. No. 4 of the* Puffrey *Lode,*

Thence Fourth Course East-Southeast along / the South end line of the Matthews Claim ~~xx distance of xxxxxxxxxxxxxxx feet~~ *to the Cor. No. 1, the place of beginning.*

That each tree so marked was at least eight inches in diameter, and blazed on four sides; that each post so marked was at least four inches square by four feet and six inches in length set one foot in the ground, except where solid rock occurred at less depth, in which case the post was set upon such rock, and in all cases such posts were surrounded by a mound of earth and stone at least four feet in diameter by two feet in height, that each stump so marked was squared and was at least eight inches in diameter by four feet in height, and was surrounded by a mound of earth and stone four feet in diameter by two feet in height; that each stone so marked was at least six inches square by eighteen inches in length, set two-thirds of its length in the ground, with a mound of earth and stone alongside at least four feet in diameter by two feet in height; that each boulder so marked was at least three feet above the natural surface of the ground on the upper side of said boulder.

That within sixty days after the date of posting said notice of location:

1. The locator.... named herein sunk a discovery shaft on said claim at the point of discovery ...... *feet by* ...... *feet, to the depth of at least ten feet vertically, below the lowest part of the rim of such shaft at the surface, and that the cubical contents of said shaft excavated is not less than one hundred and fifty cubic feet. (If you sink a discovery shaft, cancel all of paragraphs 2 and 3.)*

2. The locator.... named herein excavated an open cut on said claim at the point of discovery ten *feet wide by* fifteen *feet long and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said cut consists of at least one hundred and fifty cubic feet of excavation. (If you excavate an open cut, cancel all of paragraphs 1 and 3.)*

3. The locator.... named herein excavated a tunnel on said claim at the point of discovery ...... *feet wide by* ...... *feet in height, and* ...... *feet in length, and to the depth of at least ten feet, vertically, below the natural surface of the ground, and which said tunnel consists of at least one hundred and fifty cubic feet of excavation. (If you excavate a tunnel, cancel all of paragraphs 1 and 2.)*

That said locator.... did there, in the bottom of said cut
(Shaft, Cut or Tunnel)
at the lowest vertical depth thereof, disclose the vein, lode or deposit so located.

That said locator.... claims 990 *feet in a* Southwesterly *direction, and* 10 *feet in a* Northeasterly *direction, along the course of the vein each way from the discovery shaft, and* 300 feet in a Northwesterly direction and 300 feet in a Southeasterly direction ~~xxxx~~ *on each side of the center of the vein, the same being* 600 *feet wide by* 1000 *feet in length.*

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

That the following reference is hereby made to natural objects and permanent monuments so as to identify said claim, to-wit:

The Puffrey Lode is situated in Lots 9 and 10 of Section 5, Tp. 16 N., R. 20 E., M. M.

That the following claims adjoin this claim, to-wit: On the North the Matthews Sur. No. 7954 *Quartz Lode Mining Claim. On the South the* Oro Cache, Sur. No. 1416A *Quartz Lode Mining Claim. On the East the* George H. *Quartz Lode Mining Claim. On the West the* ..... *Quartz Lode Mining Claim.*

That the claim is located, marked and designated as aforesaid is named and known as the Puffrey *Quartz Lode Mining Claim, and it is situate in* Warm Spring Unorg. *Mining District, County of* Fergus, *State of Montana.*

That the name..... of the locator..... and claimant..... follows, to-wit:

BLUE RANGE MINING COMPANY
By Ruth Kelly Hoffman
President

Locator..... and Claimant.....

STATE OF MONTANA,
County of FERGUS } *ss.*

Ruth Kelly Hoffman

being first duly sworn, on his oath says: That he is a citizen of the United States, and that he is of lawful age, that she is the agent of *the locator..... and claimant..... of the* Puffrey *Quartz Lode Mining Claim; that said location is made in good faith; that this "Certificate of Location" is made in good faith, and for the purpose of securing and enjoying all the right and benefits of Chapter 16 of the Laws of 1907 of the State of Montana entitled: "An Act governing the manner of locating, recording and holding possession of mining claims upon the public domain of the United States within the State of Montana," approved February 18, 1907; and that the matters and things stated in the foregoing "Certificate of Location" are true of his own knowledge.*

Ruth Kelly Hoffman

Subscribed and sworn to before me this 14th *day of* March, *A. D. 1972*

Audrey A. Sobol
Notary Public for the State of Montana.

Residing at Lewistown, Montana *My Commission expires* May 1, 1974

Certificate of Location

Of the..... Quartz Lode Mining Claim
Mining District,
County, State of Montana.

STATE OF MONTANA,
County of Fergus } *ss.*

Filed for Record on the MAR 14 1972 *A. D. 19*
day of
at 8:50 *o'clock* A *M., and*
recorded in Book 17 *of Lode Locations,*
at Page 235

Mary Carlin
County Clerk.
By..... Deputy.
Fee, $ 4.00 paid

Ruth Hoffman
Court House

VIKING EXPLORATION

45898

First Bank System MEMBER

FIRST TRUST COMPANY OF MONTANA

P. O. BOX 2088 • GREAT FALLS, MONTANA 59401

FORREST E. HENDERSON
PRESIDENT

May 9, 1972

Mr. Larry C. Hoffman
Mining Projects Engineer
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Dear Mr. Hoffman:

Please accept this letter as a refusal by our company acting as trustee to sign a lein agreement using MME Form 52 as supplied by the office of Mineral Exploration.

Very truly yours,

President

mmc

VIKING EXPLORATION INC.

Judith Basin, Montana

STAFF CORRESPONDENCE

Judith Basin embraces that portion of Fergus county, Montana, which is drained by Judith river and its tributaries, comprising nearly one-half the area of the county. While the greater part of this is occupied by wheat growers and live stock men, it has a gold-mining industry, the proceeds of which place Fergus county in the lead among the counties of Montana as regards gold production. The principal supply of this metal comes from the mines which are situated in the North Moccasin and Judith mountains, these being detached ranges on the east side of the Judith river. Kendall is the principal mining town of the North Moccasin, and is twenty miles north of Lewistown. In this range are the Kendall, Barnes-King, and Santiago mines. Maiden and Gilt Edge are mining towns, six miles apart, in the Judith range, and are twenty and fifteen miles, respectively, northeasterly from Lewistown. Maiden is one of the oldest mining camps in the county and has such mines as the Cumberland, Spotted Horse, McGinnis, and New Year, while at Gilt Edge is the Gold Reef mine. The Chicago, Milwaukee & Puget Sound Railway Co. owns the railroad from Harlowton, on its main line, to Lewistown, a distance of sixty-five miles, and this branch is being extended northerly to the Missouri river, the route coming within four miles of Kendall. The Utica sapphire mines, noted for the high quality of their product, are situated in the southwestern part of the basin country. The earliest discovery of this region by white men was made by the Lewis & Clark expedition in 1805, when the name it now bears was given to Judith river.

Not much ore is shipped from the Judith basin, as it is generally highly silicious, free from refractory elements, and amenable to successful treatment by cyanidation. Plants of this character are at present in operation at the Kendall, Cumberland, and Gold Reef, and the practice consists of coarse-crushing and direct leaching in vats by the simplest methods, with no separation of sand from slime. The Cumberland mine is owned by James Breen, of Spokane, and his associates, who erected a mill of 100 tons capacity and set it in operation last May. The first ore milled consisted of 2100 tons of dump material that had accumulated; this ran $11.08 per ton. Since that was finished the mill has been operated on ore from the mine. During the first two weeks of August the mill heads showed $12 per ton, the tailing 66c.; the cost of milling was 65c. per ton; cyanide consumption ¼ lb. per ton; lime, 3 lb.; zinc, ½ lb. The aim is now to get mining and milling costs on the basis of $2.50 per ton; and on the results of thoroughly sampling the ore exposed in the mine, it is estimated that it will average not less than $8 per ton. The ore is reduced to ¼-in. size and is given a 5-days' treatment, the extraction being about 93%. It is being arranged to lengthen the period of leaching to six days, and possibly increase the percentage of extraction. The ore consists of oxidized porphyry and cherty limestone, carrying gold in [illegible] free particles, and in the form of rusty gold that may [illegible] from the oxidation of a telluride. In the meantime additional rolls, elevators, and leaching vats are being installed to double the capacity of the mill; and a change from steam to electric power is being made, the plan being to purchase electric power from a local company. The cyanide work heretofore in charge of H. C. Coolidge, is now in control of J. H. McCormack. Mr. Coolidge has been transferred to Mr. Breen's property near Helena. As to the mine, it may be stated briefly that it is situated on the north end of a contact vein that occurs between limestone and porphyry. It was opened ten years ago by Peter Rosso and others, who operated with good success on the high-grade parts of the orebody. In 1909, prior to the sale of the property to Breen and associates, Rosso shipped five carloads of ore to the smelter that netted him $25,000. Most of this rich ore was taken from an intermediate level 80 ft. below the surface. The mine was first opened by a vertical shaft from the surface to a depth of 183 ft., from which three levels were driven; later, a 200-ft. adit was driven to the base of the shaft from the side of the hill. This is called the mill level, as trackage from it leads to the feed floor of the mill. The workings show a body of oxidized ore over 100 ft. wide on each level. On No. 3 level is a stoped-out chamber 72 ft. long, 45 ft. wide, and 32 ft. high, and it does not appear that either wall was cut. On No. 2 level, 86 ft. above No. 3, there is a cross-cut about 100 ft. in ore. Work is in progress on the strike of the vein at the mill level and on the one above it. Albert I. Goodell, formerly superintendent of the Northport smelter, is at the Cumberland as the representative of Mr. Breen.

The old Spotted Horse mine, now under option to James Breen, is adjoining the Cumberland on the south, and is on the same contact. Since taking the option Mr. Breen has had the 440-ft. shaft retimbered, the levels cleaned out and put in order, and the ore exposed has been sampled. On the dump there are estimated to be 30,000 tons of ore which may average $7.50 per ton. It is possible that the ore on the dump and some of that in the mine may be treated at the Cumberland mill. The Spotted Horse ore, however, contains some base material, and its treatment would be more difficult than that of the Cumberland. It is claimed the Spotted Horse, operating from 1893 to 1902, produced ore of the value of $3,000,000, and that the recovery of the gold and silver was by pan-amalgamation. The milling plant was destroyed by fire eight years ago. The owning company, which gave the option, is the St. Paul & Montana Mining Company.

Still farther south on the contact is the McGinnis mine, owned by Conrad-Stanford Co., of Helena. In earlier days it was a good producer and supplied a mill. It is now being operated by lessees who employ a small force and make regular shipments of sorted ore to a smelter at Butte. The last car of ore shipped had a gross value of $70 per ton. The McGinnis ore contains a good deal of visible free gold.

VIKING EXPLORATION INC.

All ore values are for $20/toz gold

The Cumberland, Spotted Horse, and Maginnis are all on the same ore structure.

VIKING EXPLORATION INC.

first period meet at a common center and are sheared by the porphyry of the second intrusive period.

This mineral zone by its geological situation is the most important on Gold hill. Until now no development has been undertaken on this central zone. Under the new management the main shaft has been sunk to the first level and the drift has been carried 82 ft.

This is the first time in the history of the Maiden district that mining operations have been undertaken under experienced geological direction, and the results are certain to have a helpful bearing on the future policy of other properties in the district.

The Spotted Horse Mine.

The Spotted Horse mine is located on the most easterly of the porphyry sheets of the first intrusive period, and at the junction where it is sheared by the Gold hill porphyry of the second intrusive period. The mine workings are 1500 ft. distant from the old workings of the McGinnis mine. The mine was discovered in 1881 and was operated in an indifferent way until 1902. During this period of operations the mine changed hands seven different times. Apparently each owner in his time was satisfied to do just sufficient development work to open up a new ore body, extract the ore in sight and then sell the property. During the 20 years the mine was thus operated the production exceeded $5,000,000 in gold.

In 1902 the property was closed down and remained closed for 10 years. In 1912 the mine again resumed operations, this time under the management of Coolidge, Bryant and associates, and is still being operated by them.

During the past 20 months, with an average working force of 15 men, the mine has produced $200,000 in ore shipped and approximately $145,000 in ore broken down, ready for milling. The mill returns from ore shipped give a general average of $100 per ton.

Four ore chimneys have been opened up at this juncture and worked to a depth of 585 ft. As yet no development has been attempted below this depth.

While these two Gold Hill properties, the McGinnis and Spotted Horse, have produced in the past in excess of $7,000,000, it will be seen by observing the above sketch that the mines are far from being worked out.

Geological deduction infers that there is a larger possible production from the deeper workings than has been produced in the past from the surface workings. Strong evidence has also been gathered that implies higher values as depth increases.

George Wrightson, Jr., a machinist employed by the Leonard mine at Butte, Mont., has received patents for a pump plunger made of porcelain or other vitreous substance, but preferably porcelain. The invention was thoroughly tried out at the Silver Bow mine and gave unqualified satisfaction.

The Northwest Mining Convention Meets in Spokane, Feb. 24.

VIKING EXPLORATION INC.

Under the joint auspices of the Spokane Chamber of Commerce, Mining Men's Club and Spokane Engineering and Technical Association, the most important mining event held in the northwest in recent years will take place Feb. 24 to 27 at the Hotel Spokane. This will be the Northwest Mining Convention and attendant mineral exposition.

From every mine in every district of Idaho, British Columbia, Montana, Oregon and Washington will be invited mineral displays, and every effort will be made to bring the investing public into touch with the owners of promising properties. H. H. Shallenberger, a well-known Spokane mining man, is chairman of the committee in charge of the ore exhibition.

The convention side of the event is being arranged by the Spokane Engineering and Technical Association, comprising technical societies in various fields. The Spokane chapters of the American Society of Civil Engineers and American Institute of Electrical Engineers, and the Columbia section of the American Institute of Mining Engineers, each will have charge of a day's program at the convention, which will deal with all problems affecting the mining industry in the Pacific northwest. L. K. Armstrong is chairman of the convention program committee.

F. A. Ross, president of the Spokane Mining Men's Club, and chairman of the executive committee of the Northwest Mining Convention, says that "this event will do much to aid the mining industry generally. By bringing the mine owner, the prospector and the engineer into closer touch with the public in this way we are confident that the importance of the mining industry will be better appreciated by all, and that the industry will receive new impetus both at home and abroad. That mining is one of the dominant industries of this part of the country is realized when we know that Inland Empire mines in 1914 paid dividends aggregating $7,493,171, an increase of nearly $1,000,000 over the amount for 1913."

Coal Exports from United States.—The United States, which produces 40% of the world's coal, exports annually 27,500,000 tons, or about 5% of the output of last year, the total export in the fiscal year being valued at $86,000,000, or less than half the value of coal exports of the United Kingdom and slightly less than those of Germany. Exports of domestic coal have doubled during the last decade, having increased from 8,482,867 long tons in 1904 to 19,664,080 tons in 1914, the latter total being with one exception (1913) the largest on record. In addition to exports consigned to foreign countries, domestic coal laden on vessels engaged in foreign trade for use as fuel amounted in 1914 to 7,811,913 tons and shipments to Hawaii and Porto Rico aggregated 133,501 tons, making total shipments out of mainland ports 27,609,494 with an aggregate valuation of $85,925,001.

VIKING EXPLORATION INC.

VIKING EXPLORATION INC

on limestone. This acid probably was brought by solutions from the intrusive molten magmas and may have aided in dissolving the gold. The gold-bearing limestone of the orebodies is usually silicious, often jasperoid, and is more crystalline than before mineralization. The chief mineral deposits occur in the Carboniferous limestone, and are usually restricted to the upper part of it. This probably results from the upper Carboniferous limestone being thin-bedded with many crevices that mineral-bearing solutions could follow, while the lower Carboniferous is massive and thick-bedded. The limestone near the intrusions has frequently been brecciated, the angular fragments being cemented and replaced by ore. As the intrusive porphyry cooled, its volume would naturally contract and crevices would open along the contacts with the sedimentary rocks, which would serve for the passage of mineral-bearing solutions. The solutions could more easily dissolve the limestone and replace it with sulphides than the shales and sandstones, therefore little mineralization has occurred except in the limestone. Also carbonaceous matter in the limestone may have helped to precipitate the gold, as would also the lower pressure and temperature in the limestone. The orebodies are chiefly restricted to limestone and porphyry contacts, but occasionally shoots are found to extend some distance into the limestone, and sometimes the porphyry itself has been replaced. The gold seems to have been chiefly deposited as a telluride along with quartz, pyrite, calcite, and fluorite. Since the mineralization happened, erosion has removed the overlying rocks and exposed the mineral deposits. Surface waters and the air have oxidized the pyrite, chiefly to limonite, resulting in staining much of the ore a red, yellow, or brown. Practically all of the ore thus far mined is softened and decomposed by the agents of weathering. Free gold is rarely seen.

THE MINES in the Judith mountains require little timber, what is required being cut near-by. A good grade of sub-bituminous coal outcrops in the foot-hills a few miles away. Maiden, the chief town in the Judiths, is situated near the centre of the range and has a population of only a 100. At one time nearly 1000 people lived there. Hilger, on a branch railroad from Lewiston, is ten miles from Maiden and is the nearest railroad point. A daily stage connects with the trains. Lewiston, the county seat of Fergus county, is about 18 miles south-west of Maiden. Placer gold was discovered in Alpine gulch near Maiden in 1880, and quartz claims were located soon afterward. The placers were small and were quickly exhausted, but the production from the quartz mines has been probably $9,000,000.

The most important mines are those near Maiden, and of these the best known is the Spotted Horse, which is the largest producer. This mine was located in 1881 and operated fairly continuously until 1902, when it was closed, not to be re-opened until 1912. Its total production is considerably in excess of $5,000,000. Much of the gold produced during its early operation was from high-grade ore, some being worth $30,000 per ton. The fluoritic gold-ore shipped to the smelter averaged about $100 per ton. A modern cyanide-mill has just been completed and is now in successful operation on the lower-grade ore. The mill has a rated capacity of 50 tons, but its actual capacity is more nearly 75 tons. Before the mill was built, no ore worth less than $20 per ton could be shipped profitably to the smelter, now ore as low as $3 per ton can be milled at a profit. The mill is provided with concentrators, the concentrate being shipped to the smelter. The mine is only developed to a depth of 585 ft., but the geologic conditions are such that it is reasonable to expect large orebodies. Enough ore is in reserve to supply the mill for several months. The mine is now producing about $12,000 in gold per month.

The McGinness mine was located about 1880 and was worked at intervals to 1899. It was then closed until 1909, and since then has been worked chiefly by lessees. New machinery is being installed, and the mill is being overhauled. The McGinness has produced nearly $2,000,000 in gold. The mine is developed to a depth of 426 ft. with over a mile of drifts. It is equipped with a 10-stamp mill, a concentrator for high-grade ore, and a cyanide-plant for the low-grade. As at the Spotted Horse much high-grade ore averaging $100 per ton was shipped to the smelter. The ore of both the Spotted Horse and McGinness occurs in the Carboniferous limestone below steeply inclined sheets of porphyry that serve as the hanging wall of the stopes. The richest ore, consisting mostly of quartz and fluorite, is of a purple color.

The Cumberland mine, near the Spotted Horse, has been operated in recent years by lessees. It has produced about $270,000, mostly in gold. It is developed by a 1000-ft. adit, and is equipped with a 150-ton cyanide-plant. The ore is found at the contact of limestone and porphyry. Above the adit the known ore has been removed, but recently the lessees have found ore of milling grade below the adit in a drift from a winze 40 ft. deep. Further development is now in progress.

The War Eagle is near the Cumberland and since 1910 several shipments of zinc ore carrying gold, silver, and lead have been made. The Cave mine on West Armell's creek has also produced lead-silver ore in recent years. On the north side of the Judiths much development work has been done on the Copper King claim, where copper is the principal mineral. Prospecting has also been done on many other claims around Maiden, among which might be mentioned the Mount Grassy group, which has recently been bonded and sampled.

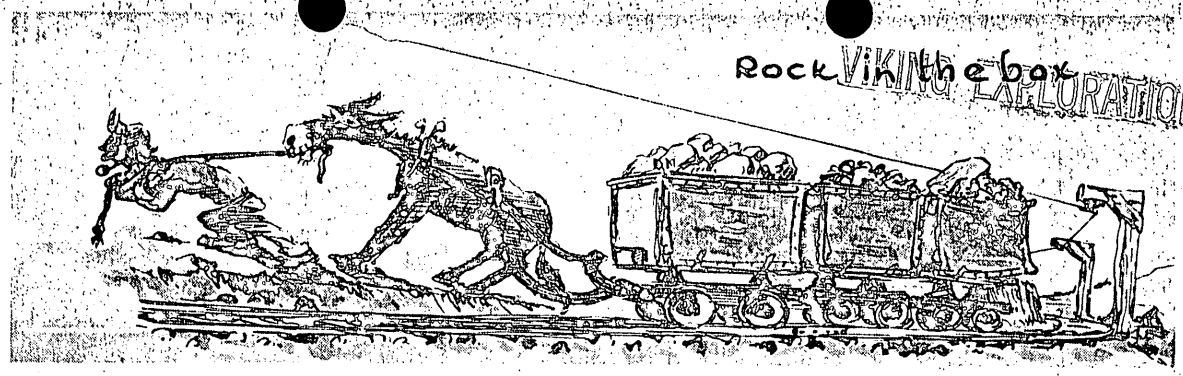
On Elk Mountain at the east end of the range work has been done on a lead-silver claim with encouraging results. The high price of the base metals has encouraged prospecting and work is active on several properties that ordinarily it would not pay to operate.

The Gilt Edge [illegible] on the east side of the mountains south of Maiden. The town is practically deserted today, but for several years following 1898 the neighbor-

VIKING EXPLORATION INC

Rock in the box

VIKING EXPLORATION INC.



FRANK B. BRYANT

MINING ENGINEER

LEWISTOWN, MONTANA

Valle Vista Manor

March 23, 1969.

Mr. Larry Huffman,
Butte, Montan.

Dear Larry:

I know hoo tardy I am in answereing your inquiry of several mo months back but here is the dope. Coolidge kept our records and he gave me this item. Weshipped a little over 2000 tons of ore the smelter returned us something over $116.oo a ton. 95% of it was shipped to the Washoe Sampler, Marquetts was in charge. Richard McCarthy represented us at the sampler. Many of our assysy were umpired and we won them all. Most of this ore was atken down on canvas and broken with single jacks. The last operation to haul their their rock to the rail road to the railroad with borse in wagons. The assay office was the key to our success. We trusted nothing to our eyes. A sample went to the assay office. As many as 2000 in one month. Most of this ore was scavenged off the walls and remaanst left in old stopes. I have no idea what the Horse produced but it produced a lot and still has possibiit ties.

Since seeing the work at the Little Ben in the Little Rockies I think gold Hill has great potential. Immeant to find out.

I hope this covers the information you wanted.

Sincerely yours,

Frank B. Bryant

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

within 2 or 3 miles of the old town of Maiden. Three of these mines - the Spotted Horse, Cumberland, and the Maginnis - were the principal gold and silver producers during early operations. The mines near Gild Edge later became prominent.

The ore deposits in the Maiden area occur principally as veins and as replacements in limestone along and near the contact with syenite porphyry. In general, the ores contain free gold and gold tellurides, along with some sulfides, and usually are associated with a purple-colored fluorite in a quartz, calcite, and a brecciated, altered, limestone gangue. Some of the deposits contain copper, lead, and zinc sulfides and their oxidation products.

In the Gilt Edge area, the ore deposits occur mainly as extensive replacements in limestone and in the altered contacting syenite porphyry. The ores contain no visible sulfides, tellurides, or gold; the gold is exceptionally fine in size, possibly in colloidal form (5). It may be present as an unidentified complex compound. Some of the ores, particularly in the lower levels, contain bitumen, which necessitates roasting them prior to cyanidation.

It has been estimated roughly that the total value of the metals recovered from ores from the Warm Springs district to 1914 was not less than 7 million dollars (25). Total metal-production records for the Warm Springs district before 1932 are not available. From 1932 to 1947, inclusive, the district is credited with a production of gold, silver, copper, and lead valued at $60,091, divided as follows: 1,291.01 ounces gold valued at $36,989, 30,325 ounces silver valued at $21,824, 8,339 pounds copper valued at $1,002, and 5,787 pounds lead valued at $276 (28). No zinc is reported, probably because the zinc contained in the ores shipped to the smelters was not paid for. During this period, production was entirely from ores mined by lessees and prospectors.

Maiden and Gilt Edge are readily accessible by roads during the greater part of the year. However, roads to the outlying mines at higher elevations usually are closed to vehicular traffic from November to May.

Enough water for small mining and milling operations generally was available in the district; it was obtained mainly from springs at higher altitudes and was brought to the mines through pipe lines. Some mines obtained an additional supply from their underground workings.

Timber suitable for general mining purposes is available near the mines in the Maiden area. Forest fires had destroyed large areas of timber in the Gilt Edge area; consequently, timber had to be hauled for greater distances.

Spotted Horse (Au-Ag)

The largest individual producer in the Warm Springs district is reported to have been the Spotted Horse mine. This mine is 1 mile due east of the town of Maiden, on the west side of Maiden Canyon. The property was located in 1881; it was acquired in 1883 by P. W. McAdow, and was worked successfully by him for several years (34). Between 1891 and 1901, the mine was operated more or less successfully by seven different owners (26). In 1900, it was operated by the Johanna Gold Mining Co. (24). It was then idle until 1909,

VIKING EXPLORATION INC.

when 23 tons of ore was mined and shipped by lessees. In 1910 the property was acquired by the Cumberland Gold Mining Co., which, in turn, leased it to Coolidge, Bryant, and Associates, who operated the mine on a small scale from 1912 to 1916 (26). From 1917 to 1935, a few hundred tons of ore was mined and shipped by various lessees. The mine has been idle since 1936. The property, consisting of the Spotted Horse and Kentucky Favorite claims, now is owned by the St. Paul & Montana Mining Co. of St. Paul, Minn.; it is under option to Mrs. Margharite F. McLean, Lewistown, Mont.

No early-day mine production records are available. Weed reports the total production up to 1896 was not less than $1,500,000 (34). Total production up to 1902 was estimated to have been about $3,000,000 (5). Production, from 1909 to 1935, inclusive, is reported to have been 16,277 ounces gold, 14,925 ounces silver, and 206 pounds copper from 17,639 tons of ore (28). $574,040 @ 35.81.70

According to Corry (5), the ore at the Spotted Horse mine has been found in three geological environments - in a fissure vein along the contact between syenite porphyry and massive Carboniferous limestone; in replacement bodies along bedding planes in the limestone; and in replacement bodies in the porphyry. Numerous veinlets extend away from the main fissure and penetrate the country rock on each side. The ore bodies were irregular in form both laterally and vertically; they ranged in size from narrow stringers to bonanza bodies up to 80 feet in maximum width. The oxidized zone extended irregularly to below the 400-foot level. Brecciated limestone or crushed and highly altered porphyry, calcite, chalcedonic silica, and fine-grained or earthy purple fluorite constitute the gangue in which gold occurred free and in the form of sylvanite and possibly other tellurides, along with some sulfide minerals (5).

First development of the deposits was by adits and other shallow workings. A two-compartment shaft was sunk later to a depth of 450 feet. Levels were driven from this shaft, and eventually a winze was sunk 135 feet below the 450-foot level. The No. 1 level, 100 feet below the shaft collar, was driven south and east and opened two ore shoots along the contact. Several thousand feet of other development work was done and other ore shoots were discovered. Small stringers of deep purple fluorite, locally yielding rich pockets of gold, were mined. Six ore shoots were mined on eight levels. Ore shoot No. 4, on the 100-foot level, yielded ore assaying $10 in gold a ton. One ore shoot mined on the eighth level, driven from the winze, yielded 850 tons of ore $32,300 assaying $22 a ton gold (5). No further work has been done from this level to determine the possible continuity of the ore bodies to greater depth or laterally along the contact.

During the first 10 years or so of operation, the ores were treated in a small stamp mill, which formerly had been operated at the Collar mine. About 65 percent of the gold in the ore was recovered by amalgamation. Vanner concentrates containing tellurides and sulfides accounted for about 15 percent of the total recovery by this mill. Tailings were impounded. A 40-ton mill and cyanide plant were installed in 1896. Cyanidation of the tailings extracted 95 percent of their average $12 gold content (35).

3400

The shaft and main adit were closed by caving, and all underground workings were inaccessible when visited in 1948. The mill was dismantled about 1935 and moved to the North Moccasin Syndicate property. Virtually all equipment has been removed from the property, and no buildings remain, except several old cabins.

The contact along which the Spotted Horse ore bodies occur extends northeasterly into the Cumberland mine, where extensive workings were opened and a large production was made from essentially similar ore bodies. The same contact is exposed in the workings at the Maginnis mine, about half a mile southwest of the Spotted Horse.

Maginnis (Au-Ag-Pb)

The Maginnis mine is at the eastern or upper end of the old town of Maiden and just west of the divide between the headwaters of Warm Spring and Maiden Creeks. Organized in 1881, the Maginnis Mining Co. purchased the Montana and Oro Cache lodes. A 10-stamp mill was erected and operated successfully until 1897. When base ores were encountered at depth, the mine was abandoned (34). The Conrad-Stafford Co., Great Falls, Mont., owned and operated the property from 1904 to 1906 (36). In 1907 it was leased to the Gold Reef Lease Mining Co. (33). This company remodeled the mill, erected a cyanide plant, and operated the mine until 1914. The mine was operated more or less continuously by various lessees until 1924. From 1925 to 1940 operations by lessees were intermittent. The mine has been idle since 1940.

When visited in 1948, both of the main adits and the old shafts were caved; all mine workings were inaccessible. The Maginnis properties, consisting of the Montana Lode, Holter Placer, Oro Cache Lode, Oro Cache Extension Lode, and the Oro Cache Millsite, now are owned by Helen E. Wieglenda, Route 3, Lewistown, Mont.

The production made by the Maginnis mine for the years between 1881 and 1899 is not of official record. It has been reported, however, that production during that period was about $1,500,000 in gold and silver (26). Officially reported production from 1904 to 1940, inclusive, was 18,674 ounces gold, 24,255 ounces silver, and 21,807 pounds lead from 34,883 tons of ore (28). 658,140 18320/T It is possible that the lead reported actually came from the Black Bull (Globe) claim, which formerly was owned by the Maginnis Mining Co. The South shaft was sunk on the Montana claim near the divide before 1897. It is reported that about 1,500 tons of lead-silver ore averaging 60 ounces silver a ton was mined from this shaft at one time and shipped to a smelter at Wickes (34).

The main mine was worked through two adits, one about 300 feet long and the other about 1,450 feet. A winze was sunk for 225 feet from the lower adit at a point about 800 feet in from the portal. Several levels were driven from the winze. Up to 1910 about 9,000 feet had been developed (32).

The ore bodies were similar in character to those in the Cumberland and Spotted Horse mines. They occurred mainly in a fissure vein along the contact of Carboniferous limestones with the Gold Hill intrusive mass of syenite porphyry and as replacement bodies in the limestone. Numerous large cavities were encountered in the limestone; one of these was more than 150 feet deep (34).

VIKING EXPLORATION INC.

being about $10 a ton. There are many such claims, and there is no doubt that considerable bodies of low-grade ore of this character exist.

ORE DEPOSITS IN LIMESTONE NEAR CONTACT WITH IGNEOUS ROCKS.

This class of deposits is by far the most important and the most productive type in all of the mines which have been considerable producers of ore. The Spotted Horse, Maginnis, and Giltedge properties are of this description. The two former mines are located, as will be described, on the contact of the Gold Hill porphyry mass with the heavy Paleozoic limestones. The contact, as shown in fig. 54, p. 600, has a broken, irregular wall, with a general pitch toward the porphyry. If it were of a less irregular character the limestone would form the hanging wall, as, indeed, at times it does. In these mines the best and richest ore is not found directly at the contact, but a short distance beyond, in the shattered limestone. The Giltedge and New Years ore bodies differ from this only in occurring on the under contact of an inclined porphyry sheet intruded in the limestone.

The association of the gold and fluorite seems to be an intimate one. In a general way it may be said that the amount of gold present is found to increase with the proportion of fluorite. Thus the facts show that the highest-grade ores and richest ore bodies have been found in the Spotted Horse workings, the ores carrying the larger proportion of fluorite. The Maginnis ores carried less fluorite and less gold, when the general character of the ore is considered. The New Years, which shows fluorite masses, is a still lower grade ore, and the Giltedge properties, whose ores are of low grade, show none of the brilliantly purple fluorite noticeable in the ores of the mine previously mentioned, although colorless fluorite is sparingly seen.

SOURCE AND DEPOSITION OF THE ORES.

Owing to the fact that detailed examinations of the mine workings were not practicable, but little can be stated concerning the source of the ore other than may be deduced from surface observations. The descriptions already given have shown that the chief and thus far the only valuable ore deposits worked occur in the brecciated contact zone between intruded igneous rocks and limestones. These intrusions are either irregular and break up abruptly through the limestones, or they occur as sheets intruded between layers of them. Faults are found near the site of greatest mineralization, but it is believed that the brecciation of the limestone would of itself furnish an available channel for uprising mineral-bearing waters. Later movements undoubtedly occurred, however, as the brecciated ores show fragments of rhyolite-porphyry in limestone, and this proves brecciation after the cooling of the igneous intrusion. Differential shrinkage—that is, the shrinkage of the cooling igneous rock and the different shrinkage of

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

in the district, being found in the main masses of porphyry, in their contacts, and in the dikes and sheets. It appears therefore safe and reasonable to say that there are considerable bodies of low-grade gold ore present in this district which have not been developed.

The contact zone of the Gold Hill porphyry, between the Spotted Horse and Maginnis mines, should prove a favorable development ground. Under proper conditions several small mines, conservatively managed and intelligently conducted, may find profitable returns in this district, even though the chance of finding bonanza ore bodies like those in the Spotted Horse may never be realized.

If the future shows a considerable mining development in this region, the scarcity of water may be much felt, while that of timber will inevitably become a serious problem.

DESCRIPTIONS OF MINING PROPERTIES.

MAGINNIS MINE.

This mine was located in the earlier period of the camp, and in 1881 passed into the hands of a corporation known as the Maginnis Mining Company, which purchased the property known as the Montana and Oro Cache Quartz Lode and a year or two thereafter erected a 10-stamp mill. An investment of several hundred thousand dollars was made in the mill and power plant and in obtaining a water supply, for which a 6 by 6 inch flume several miles long was constructed. The mine was worked from 1881 to 1894 under several superintendents, but the returns to the company were unsatisfactory and the mine was closed down. From 40 to 50 men were employed in the mine and mill. The ore is considered free milling, though it is stated that not more than 65 to 70 per cent of the assay value was saved. The cyanide process, so far as is known, has never been tried on this ore, though some of the tailings have been treated in this way with indifferent success. The mine is located at the very head of Warm Spring Creek, at the upper end of the town of Maiden and just under the divide to Maiden Gulch. A view of it is given in the accompanying plate (Pl. LXXXIV). At this point the porphyry mass of Gold Hill comes in contact with the infold of strata lying between the Alpine and Crystal Peak laccolithic dome, as described elsewhere in this work, and the porphyry abuts against the Carboniferous limestone, a mass of the ledge belonging to the top of the Carboniferous series lying still uneroded on the divide and being seen from below as a prominent block-like crag against the sky line, as seen in Pl. LXXXIV. An examination of the mine workings shows that the ore is the characteristic one of the Gold Hill contact zone as found here and in the Spotted Horse mine.

The ore body of the Maginnis mine consists largely of a crushed and brecciated limestone, recemented and hardened by silica (quartz) and showing crystals and masses of quartz and calcite. Fluorite occurs

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

milling gold ore, and its character shows that the lode is likely to yield favorable results if careful, systematic exploitation is conducted for rich ore bodies.

SPOTTED HORSE MINE.

The Spotted Horse mine has been the great gold producer of the region and is one of the noted gold mines of the State. It is situated on the slopes of Gold Hill, a mile and a half from Maiden, near the ravine cut by a branch of Maiden Creek. (See Pl. LXXXV and fig. 47.) The mine was located in 1881 by Messrs. Anderson and Jones, who sold it to Messrs. P. W. McAdow and B. Dexter. Mr. McAdow became sole owner in 1883, and worked the mine very successfully for five or six years and then bonded it to the so-called Jay Gould Mining Company, composed of Helena people, for $500,000. The mine was worked by these parties for a year or two without much success and they then relinquished the bond. Mr. McAdow again worked the mine very successfully for several years, and finally sold it, in the winter of 1893, to the Double Eagle Gold Mining Company, composed of Chicago people. They worked the mine a year and a half, were not successful, and it fell to the lien holders, by whom it was sold to the present owners.

The ore body occurs at or near the contact of massively bedded white limestones with the intrusive mass of Gold Hill porphyry. The surface outcroppings of these rocks are shown in the sketch map (fig. 47) given with the detailed description of the geology of this place. The ore occurs wholly in the limestones, for although the porphyry is mineralized, it is of too low grade to work, and is generally base. The ore body consists of a breccia, or mass of fragments of broken rock, chiefly limestone, but carrying porphyry fragments as well, near the contact. The limestones were altered by the intrusion of the porphyry mass, being rendered more crystalline, as is so commonly the case, in the contact zone about intruded bosses of igneous rock, but few contact minerals have been observed. The processes of ore deposition and late surface alteration have changed the character of much of the rock and formed the clayey and shaly masses met with in mining.

The Cambrian rocks occur on both sides of the gulch adjacent to the mine, but in the workings they are not encountered. There is reason to believe that here, as elsewhere in this region, they would prove poor ore carriers. These rocks are faulted against the massive white Carboniferous limestones.

The ore body is extremely irregular. It appears to be similar to that of the Maginnis mine; that is, it occurs apparently where the porphyry projects into the limestone in jagged masses, and the contact has been brecciated, and the diagram given with the description of the Maginnis mine also illustrates the mode of occurrence of the ore body here.

Fig. 54*a* shows the workings of the mine as surveyed in 1889, the later workings having been sketched in. This shows the extreme

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

irregularity of the workings and the unequal distribution of the ore. In every case where the levels have been driven into the ground immediately between the two shafts, rich ore bodies have been found, but this has been done only after drifting through barren ground. No systematic prospecting of the property has been done, although it would appear to offer extremely favorable conditions for diamond-drill work.

A cross section of the workings, so far as developed in 1889, is shown in fig. 54*b*. Later surveys have not been obtainable.

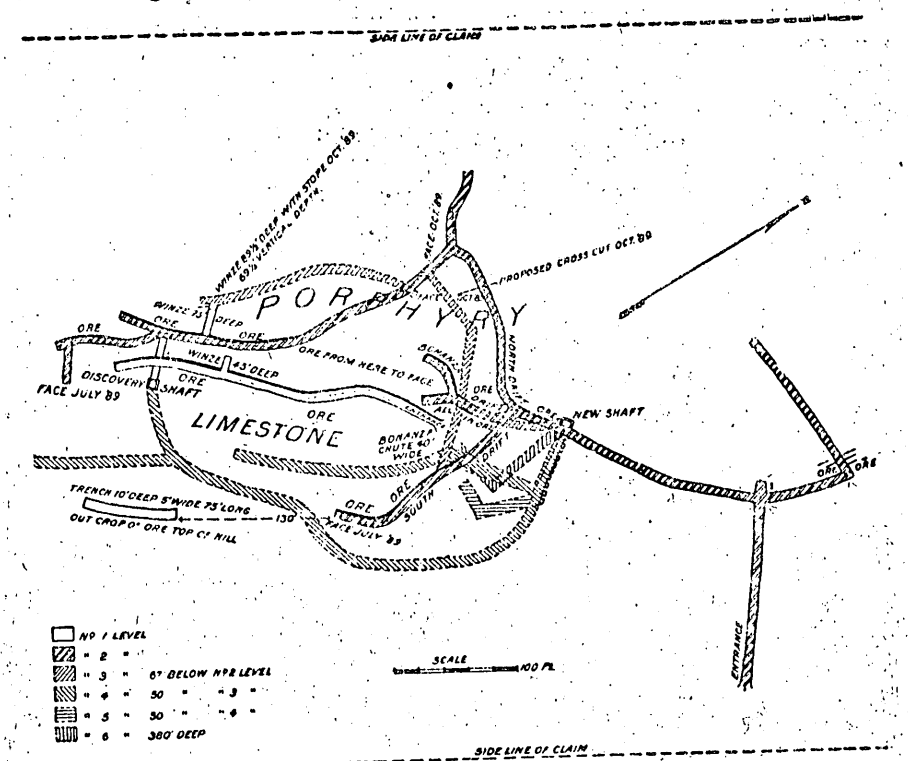


FIG. 54*a*.—Ground plan of workings of Spotted Horse mine, October, 1889, from survey by G. T. Wickes; fourth, fifth, and sixth levels of later workings sketched in.

notes in back pocket

No. 7 Level 420'
No. 8 Level - 450'
No. 9 " - 585'
(4515)

Pl. LXXXV shows the hoist, mill, and general aspect of the surrounding slopes. On the extreme left of the view the Carboniferous limestones form a hummock on the hillside, and in this a bonanza of rich ore was found in 1893, which yielded $30,000, the body of rich ore being less than 10 by 25 feet across, and perhaps 15 feet deep. In the plate the distinction between the porphyry mass of Gold Hill, seen in the background, and the limestones of the mine, upon which the buildings all stand, is not very apparent, as no prominent outcrops occur. The distinction is more apparent near the mouth of Spotted Horse Gulch, where the limestones form the heavy outcrops seen in Pl. LXXIX, p. 528.

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

The Spotted Horse ores vary greatly in appearance, though the same general characters prevail throughout. The richest ores consist of coarsely crystalline, light-gray limestone, carrying fragmental masses of fluorite impregnated with gold. Other ores are of limestone of varying grain crossed by fractures or seams of earthy material, with parallel arrangement. The fluorite occurs both as angular masses replacing limestone fragments and in specks and particles in the compact limestones. The limestone is seen to be such, and not vein calcite, by its structure and by the calcite grains replacing fossils. The ores often show considerable secondary alteration and solution, forming open cavities lined with secondary calcite crystals. Bowlders occurring in the soft, clayey parts of the deposit show a center of cemented limestone, fluorite, and porphyry fragments, surrounded by

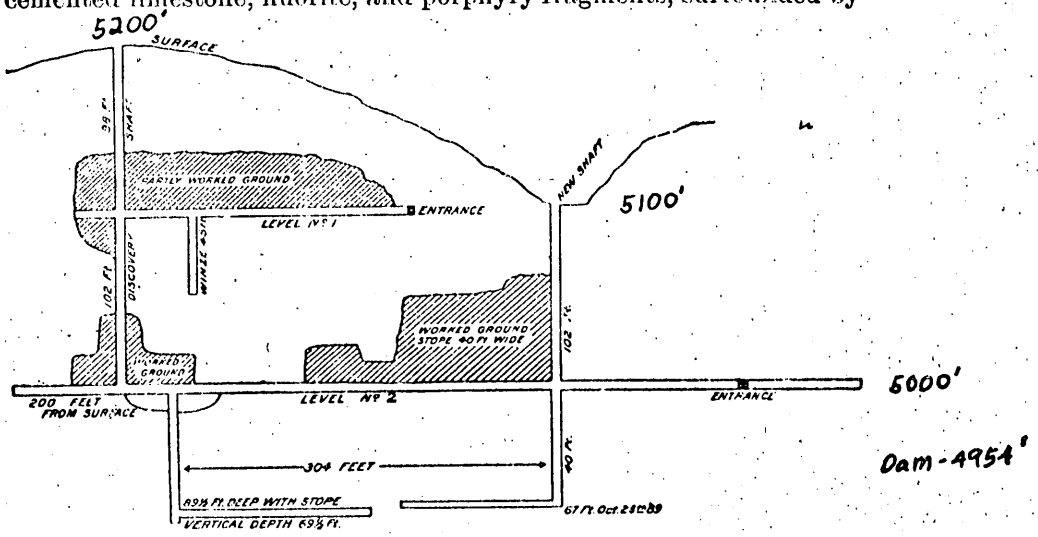


FIG. 54b.—Spotted Horse mine; vertical section through shaft and workings, October, 1889.

concentric rings of soft, earthy brown material. The fluorite occurring as replacement of angular limestone fragments shows a contact film of brown ferruginous oxide, which may represent impurities of the original limestone, expelled during replacement. The coloring of the fluorite seems deepest where the limestone carries most organic matter. The shaft sunk upon the adjoining claim, the Kentucky Favorite, develops mineralized porphyry, which is of too low grade to work, though containing unaltered specks of telluride. The rock shows considerable pyrite and is quite thoroughly altered. Under the microscope this low-grade ore is seen to be a rhyolite (quartz)-porphyry of the type described in the chapter on the igneous rocks, but it has been greatly altered and changed by various agencies. It consisted originally of crystals of feldspar of small size, and occasional rare ones of quartz, embedded in a very dense, compact groundmass

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

of quartz and alkali feldspar in extremely minute, microscopic grains. In the process of alteration this character has been much changed, and the feldspars are largely converted into masses consisting of fibers and scales of sericite, a variety of muscovite. Originally also a ferromagnesian mineral, probably pyroxene, was present, and this has been leached out and replaced by masses of calcite, often retaining the shape of the original crystal; this occurs also at times in the altered feldspars. Scattered through this are many small masses and distinct crystals of pyrite which occur embedded sometimes in the calcite, sometimes in the altered feldspar, and sometimes in the groundmass. Where the surface of the pyrite has been ground off in the process of making the section there is often seen by reflected light minute dark spots, which may be due to some mineral embedded in it, but they are so small that their exact character can not be determined. The alteration of the porphyry is clearly that produced by the action of hot, solvent solutions, which have altered the original minerals and deposited the calcite and probably the pyrite.

The Spotted Horse mine is now owned by Mr. John L. Bright, of Columbus, Ohio, and Albert L. Losinger, of Maiden, Montana, the former owning a three-fourths interest. It is understood that a stock company will shortly be formed to operate the property. The mine was bonded for $30,000. The work done under the new ownership consists chiefly in the working out of the ore body exposed at the time of purchase and in the opening of the adjoining claim, the Kentucky Favorite, by means of a drift from the Spotted Horse shaft, run in a northwesterly direction. This drift starts from the second level at a depth of about 125 feet. The present owners have discovered several shoots of ore on the second and third levels, situated in close proximity to the 80-foot stope. The ore in these shoots was exceptionally high grade and consisted principally of tellurides; it was shipped to the Montana Smelting and Refining Company of Great Falls. The amount extracted did not exceed 100 tons, but the high value made it an extremely desirable ore to handle. The mill was closed down in April, awaiting a supply of coal from the neighboring mines. Previous to that the mill was running on an ore averaging $17 per ton, taken partly from the mine and partly from the surface working known as the "Open Cut," situated in the southeastern corner of the Spotted Horse claim, where the ore body has yielded some $35,000 from a space about 7 feet wide and 15 feet long. This bonanza was worked out under the former management, but considerable low-grade ore has been extracted by the present management from the vicinity of this ore shoot.

The pans of the mill have been replaced by copper plates, which were found to do quite as good work as that accomplished by the pans.

The old tailings are now being worked in a small cyanide mill with

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

a capacity of about 40 tons per day, an extraction of 95 per cent (an average of $11 per ton) being made, a total amount of about 2,500 tons of tailings being available for work. The mine shaft will be sunk deeper by the present owners during the coming year.

The ore is treated in a 20-stamp mill, in which the free gold is extracted. The base minerals of the ore, said to be largely sulphides with telluride of gold, were concentrated and shipped for smelting. A letter from Mr. P. W. McAdow states that under his ownership about 65 per cent of the ore was free milling and 35 per cent telluride. The vanner saved 15 per cent of the tellurides, and 20 per cent was lost in the tailings and was carried down Maiden Creek.

The mine is not a wet one, barely enough water being obtained to supply the boilers of the hoist. For milling it has been found necessary to pump water from the head of Collar Creek Canyon, a lift of 300 feet and a distance of 2 miles.

The mill and hoisting plant were in poor condition in 1896, the mine and mill both requiring a considerable investment for satisfactory working.

FLORENCE MINE.

This mine was located by John Kemper in 1881. It consists of a tunnel cut in the limestone of Crystal Peak. The mine was worked only a short time, a number of years ago. At that time about 25 tons of very rich silver ore were shipped, of which 17 tons gave $9,000. The mine has not been worked to any extent since.

The Florence mine is situated in the limestone east of the porphyry mass, and the ore body occurs along the contact of limestone and a lesser porphyry intrusion. The ore appears to be mainly dog-tooth spar (calcite), stained and colored by copper carbonates, with green pyroxene characteristic of altered metamorphosed limestones, due to the proximity of eruptive rocks.

PILGRIM MINE.

This is a small working on the side of the mountain below the Florence. It consists of a thin seam of very rich silver ore, but the lead was too narrow and the limestone too hard for profitable working.

BUTCHER KNIFE MINE.

In Alpine Gulch this is the only prospect being actively pushed at the present time. An intrusive sheet lies in the calcareous Cambrian shales, and both are cut by a feldspar porphyry dike. The ore is along the contact between the porphyry and the limy, altered shale. A shaft 60 feet deep on the hill heads to a tunnel 180 feet long, driven to meet it. Some of the ore pans free gold; no general assay has yet been made and no ore has been shipped. Three or four men are employed in the mine.

Below the mouth of Alpine Creek, J. Wocasek has shipped small amounts of rich silver ore obtained from an open pit in the limestones.

VIKING EXPLORATION INC.

The Montana State Board of Registration for Professional Engineers and Land Surveyors

Certifies That

Larry Charles Hoffman

Has Passed the Examination and Is Enrolled in The State of Montana

AS

ENGINEER IN TRAINING

In Testimony Whereof This Certificate Has Been Issued by the Authority of the Board.

CERTIFICATE NO. 3190 *ISSUED* July 18, 1969

This Certificate Shall Expire Ten Years After Date of Issue.

CHAIRMAN

SECRETARY

VIKING EXPLORATION INC.

LARRY CHARLES HOFFMAN

Mr. Larry Charles Hoffman is Mining Projects Engineer of Viking Exploration, Inc. He is a 1969 graduate of Montana College of Mineral Science of Technology (formerly Montana School of Mines) and is a registered E.I.T.

Mr. Hoffman has been associated with mining since early childhood, starting as a helper around a mine owned by family friends. Naturally curious and with an inclination toward things mechanical, he soon decided upon mining as a career. In the years that followed he became familiar with nearly all mining methods and equipment, as well as ore processing practice. As a helper, miner, mechanic, and engineering aide, all facts of the mining industry could be seen and absorbed.

In 1960, Mr. Hoffman began seriously acquiring and re-building mining machinery with the idea of eventually operating a small mine. In 1961, while still in high school, he worked as a miner on the Minuteman missile installations in Montana and helped re-design shaft sinking equipment for the work. In 1962 he was hired by P&D Enterprises to operate an aggregate pit and crushing plant, a position held full time during the night shift until graduation from high school in June 1963, and shortly thereafter on day shift. He then seriously began operation on several mines and prospects in the Central Montana area, d/b/a Blue Range Mining Co. In addition to his own projects, he also did contract mining and surveying work for others. While several other small miners failed, the Blue Range Mining Co. managed to remain solvent and continue to acquire more and newer equipment.

Mr. Hoffman entered Montana Tech in September of 1964 and worked his way through college, as a contract miner for the Anaconda Company in Butte, Montana, The Machinery Center in Cobalt, Idaho, and several smaller companies. Along with two other students he formed a contract surveying team in his junior and senior years, and worked for many small mines as well as Cominco, American, International Nuclear, and Cyprus Mines.

In June of 1968 he acquired a lease on the famous old Spotted Horse mine in the Judith Mountains of Central Montana. His interest in the mine resulted from a lifelong association with Mr. Frank Bryant, one of the last operators of the mine, and the only mining engineer ever to work on the property. The mine was completely caved in and reputed to be flooded, but Mr. Hoffman's knowledge of the mine indicated it might be re-opened. During his last year in college he maintained interest and research work on the mine, worked as a contract surveyor to meet school and mine expenses, was president of the student chapter of the AIME, wrote a regular column for the school newspaper, and carried 22 semester credit hours. During this time he was named to Who's Who in American Universities & Colleges, was awarded the national and state AIME Student Paper Award in Mining, and maintained a "B" average.

After graudation Mr. Hoffman devoted most of his time to the re-opening of the Spotted Horse Mine, doing occasional contract work to help meet expenses. As a small operator, he designed and implemented all ventilation, pumping, hoisting, haulage, and re-opening procedures, as well as the sampling program. Several new pieces of equipment were designed and built to solve the peculiar problems of re-opening an old mine. Forced to close the mine late in 1971, due to lack of exploration capital, he worked briefly for Pend Orielle Mines and Continental Laboratories before joining Viking Exploration, January 1, 1972.

Mr. Hoffman is a Junior Member of AIME and belongs to the Montana Mining Association.

EDWARD WIEGLENDA

Mine Foremen (probable)

Intimately associated with mines & mining since 1937. Extremely intelligent, self taught, practical mining man. Expert miner, assayer, mechanic, and foreman. Vast experience initiating and operating small mines, exploration programs, and miner training programs.

Resume:

1937-1939 - Worked with uncle, George H. Wieglenda on numerous prospects and mines in the Spotted Horse area, mostly in the Maginnis mine adjoining the Spotted Horse to the southwest.

1939-1942 - Assayer, mill hand, heavy equipment operator, North Moccasin Mines Syndicate, Lewistown, MT.

1942-1945 - Airforce aircraft mechanic and flight engineer.

1946-1947 - Mining leases and construction work.

1948-1951 - Mechanic, Harlem, MT.

1951-1956 - Mine operator, Gold Bug mine, Landusky, MT., supervised all work.

1956-1961 - Superintendant of mines and mills for Northern Milling Co. at Zortman & Townsend, MT., trained full mine and milling crews from farm hands.

1962 - Construction work-Kaiser Engineers

1963 - Mechanic, Denton, MT.

1964-1966 - Maint. foreman for mill & power plant, Continental Explorations, Tucson, Arizona.

1967-1968 - Little Rockies Mining Co., Ltd, mine foreman, Landusky, MT.

1969-1971 - Niseka Mining Co., Ltd., mine foreman, Landusky, MT.

Both Mr. Wieglenda and Mr. Hoffman have followed the ups and downs of small mines and are very much aware of the problems and hazards involved, as well as innumerable time and money saving methods.

VIKING EXPLORATION INC.
VIKING EXPLORATION INC.

VIKING EXPLORATION, INC.
BALANCE SHEETS
AS OF JUNE 30, 1972
Unaudited - Prepared Internally

ASSETS		LIABILITIES & Shareholders' Equity	
Current Assets		Current Liabilities	
		Notes Payable-First Natl. Bank	$ 40,500
Cash	$ 23,261	Notes Payable-Hickerson Oil Co.	$ 4,246
		Notes Payable-C. A. Einarsen	$ 78,406
		Accounts Payable	
		Trade	$ 21,268
Accounts Receivable			
Trade	$ 4,371		
		Accrued and with-held payroll taxes	$ 1,368
Total Current Assets	$ 27,632		
		Accrued Interest	
		Shareholder	$ 933
		Other	$ 126
		Total Current Liabilities	$146,847
Properties and Equipment at Cost		Long-term Liabilities	
		M. Fleisher & Co. Lease	$ 36,000
Oil and Gas Properties			
Undeveloped Leases	$ 54,613		
Nonproducing Royalties	28,703		
Producing Oil & Gas properties	6,704	Shareholders' Equity	
Mineral Interests	32,473	Common stock-par value 10¢ authorized 1,000,000 shares outstanding:	
Total Oil and Gas Properties	$122,493	6-30-72 - 272,009 shares	$ 27,201
Real Estate	$ 16,000		
Mining Equipment	$ 7,569	Capital Contributed in Excess of Par	$ 76,519
Other Property and Equipment	$ 20,776		
Less Accumulated Depreciation	$ 7,300	Retained Deficit	($ 98,896)
Net Properties and Equipment	$ 21,045		
		Total Shareholders' Equity	$ 4,824
Deposits	$ 501		
	$187,671		$187,671

VIKING EXPLORATION INC.

MR. CHARLES ALBERT EINARSEN

Mr. Charles A. (Chuck) Einarsen is President of Viking Exploration, Inc. He obtained the Degree of Petroleum Engineering from the Colorado School of Mines in 1947 and is a Registered Professional Engineer.

Immediately after graduation Mr. Einarsen went to work for Amoco, formerly Stanolind Oil & Gas Company, as a Junior Petroleum Engineer in Wink, Texas. In 1949 he became District Mud Engineer at Midland, Texas and in 1950 he became Division Staff Petroleum Engineer in Fort Worth, Texas. In 1952 he was promoted to Research Engineer in the Well Completion Section at Tulsa, Oklahoma. While in the Fort Worth division office, which kept 45 to 50 rigs busy, he was responsible for the supervision of drilling mud programs throughout the Permian Basin, the preparation of various field development programs, budget, and was liaison engineer between the research laboratories and the district and field offices for field testing new materials and techniques associated with drilling mud, cementing, stimulation and well completion.

Mr. Einarsen left Stanolind to join Cherokee Laboratories, Inc. as a stock holder and Area Manager for West Texas and New Mexico. He served in that capacity for four years, setting up 44 stock points and warehouses for the distribution of various drilling mud and cement additives. While with Cherokee he addressed numerous engineering and geological societies and conventions across the U.S.A. on drilling practices, mud control and cementing techniques. He also authored several papers on lost circulation control and cementing.

In 1957 Mr. Einarsen joined Petroleum Research Corporation as a stockholder and Division Engineer. He later became Manager of the Engineering Services Division. PRC is an internationally known consulting firm specializing in hydrodynamic research, development, and exploration. He traveled widely throughout the United States and Canada, working with regional and specific hydrodynamic problems of various clients. He also co-authored a number of hydrodynamic research, development, and application reports and lectured widely before numerous company groups and several geological and engineering groups throughout the United States. From 1957 to 1964 Mr. Einarsen took a number of business management courses at the University of Colorado.

From 1963 to 1964 he was Director of Marketing of C. S. Card Iron Works, Denver, Colorado. From 1964 to 1968 Mr. Einarsen became a hydrodynamic consultant and consulting petroleum engineer. His services included the hydrodynamic evaluation of areas and geologic prospects, preparation of regional and semi-regional hydrodynamic maps, recommendation of acreage for acquisition, preparation of oil and gas well drilling and completion programs, well site supervision of drilling wells, completion of wells, evaluation of oil and gas reserves, and property management.

During the same period, Mr. Einarsen, in addition to the above consulting work, put together a number of geological prospects which have been drilled in Wyoming, Montana and Colorado. His work has led to the discovery of the Cinder Buttes Field in the San Juan Basin, which is a multiple pay gas field, producing from three horizons with a total estimated reserve of 380 billion cubic feet of gas. One of his prospects was the extension of the Lamb Field in the Big Horn Basin of Wyoming.

In 1968 Mr. Einarsen became Vice President of and a stockholder in Tensleep Petroleum Corporation, a position from which he resigned to form Viking Exploration, Inc.

Mr. Einarsen and Mr. Theodore D. Sheldon have worked together in the past very successfully. A well drilled on a combination of Mr. Sheldon's geology and Mr. Einarsen's hydrodynamic studies resulted in the discovery of the Homestead Field in the Big Horn Basin which now has nine producing Tensleep wells.

On March 17, 1969 Mr. Einarsen and Mr. Sheldon formed Viking Exploration, Inc. by pooling all of their oil and gas assets, including oil and gas leases, overriding royalties, geological and engineering reports, maps, files, plays, etc. In 1969 Viking negotiated for and won a 29,000,000-acre concession in Queensland, Australia and has since sold this concession to U. S. Natural Resources, retaining an overriding royalty under the entire block. U. S. Natural Resources is currently performing seismic work on the concession and has developed a number of prospects which they will soon be attempting to get drilled.

The geographic areas in which Mr. Einarsen has carried out professional geologic and engineering work are: West Texas and New Mexico, Mid-Continent Area, Gulf Coast area, Rocky Mountains, Canada, and Australia.

He was an active member of the Toastmasters Club in Fort Worth, Tulsa, and Midland from 1952 to 1956. He has served in various capacities in the Methodist Church, including teaching, Sunday School Superintendent, Board of Stewards and Chairman of the Visitation and Evangelism Commission. Mr. Einarsen is married and has five children.

Mr. Einarsen is a member of the Independent Petroleum Association of America, Rocky Mountain Oil and Gas Association, American Association of Petroleum Geologists, American Institute of Mining, Metallurgical and Petroleum Engineers, and is a member of the American Association of Petroleum Landmen. He has been a member of various American Petroleum Institute and Society of Petroleum Engineers committees. Mr. Einarsen has been listed in Who's Who In The West and is a member of the Denver Petroleum Club.

MR. THEODORE D. SHELDON

Mr. Theodore D. (Ted) Sheldon is presently Vice President and Exploration Manager of Viking Exploration, Inc. Mr. Sheldon is a Petroleum Geologist; he obtained a B. S. Degree in Geology from the California Institute of Technology in 1953.

From July 1951 until graduation from college he worked as a geological assistant for Seaboard Oil Co. After graduation, he became geologist for Seaboard on a full time basis. From 1954 until 1956 he served in the U.S. Army as an instructor at the anti-aircraft and guided missile school at Fort Bliss, Texas, and in 1956 returned to work for Seaboard until Seaboard merged with Texaco in 1958, at which time Mr. Sheldon became an independent. While with Seaboard he worked both in California and the Rocky Mountain area, primarily concentrating on research projects.

As an Independent Consulting Geologist, from May 1958 to March 1969, Ted sheldon has worked in California, and throughout the entire Rocky Mountain area. During this period he was retained by Signal Drilling & Exploration, Inc. in the capacity of consulting geologist. During this time Signal maintained a very successful exploration record and discovered significant petroleum reserves in Sheridan County, Montana, and in Divide County, North Dakota, in which he was directly involved.

Mr. Sheldon has handled the geological supervision of more than 130 drilling wells in northeastern Montana and northwest North Dakota as well as doing occasional well-site supervision in the other states in the Rocky Mountain Region. He has conducted geologic evaluations for such companies as Calvert Exploration Company, Polumbus Corporation, Delta Drilling Company, McCulloch Oil Corporation of California, Pauley Petroleum, Inc. and Petro Search, Inc., Kilroy Company of Texas, National Co-operative Refinery Association and Four Corners Pipe Line Company.

From March 1969 to the present time, Mr. Sheldon has been employed by Viking Exploration, Inc. in the capacity of Exploration Manager.

He is a member of the American Association of Petroleum Geologists, the Geological Society of America, the American Institute of Professional Geologists, and the American Institute of Mining and Metallurgical and Petroleum Engineers as well as various local geological societies. He is presently listed in Who's Who in the West.

VIKING EXPLORATION INC.

VIKING EXPLORATION INC.

EXHIBIT "E"

SPOTTED HORSE MINE EQUIPMENT

Ingersoll-Rand type 40 Model 25 air compressor

International Harvester VD-9 Diesel engine

Gardner-Denver FL-48 rock drill with 4' leg

Gardner-Denver AF-79 longhole drifter, 4' alum. feed

2 - Gardner-Denver D-79 hand-feed drifters 2' steel feed

Cleveland LH-45 sinker drill

Sullivan #6 diamond drill w/150' ex. rod 5' and 10' sections

2 - I-R R-58 stopper drills

I-R X-71B wagon drill, 10' feed

I-R MT-3 tie tamper

I-R JB-35 sinker converted to drill rock bolt holes

Chicago-Pneumatic clay spade (model unavailable)

C-P wood-boring drill

C-P Air sump-pump with new extra motor

C-P C-P6 sludge pump

Thor 65# paving breaker

Sullivan E-III tugger hoist with 300' 5/16 cable (new)

2 - G-ID HEE airslushers with cable and buckets

3 - Anaconda air hoists

Eimco 12B mine car loader

5 tone GE mine locomotive converted to Diesel

5 - I-1/2 ton side-dump mine cars

I - 2 ton rotary end dump mine car

6 - I ton rotary end dump mine car

I - Anaconda timber car

5 tons 16-25# mine rail with spikes, bolts and plates

2,000' - 2" air pipe

200' - I" air hose

75' - I-1/4 round coupled long-hole drill steel

VIKING EXPLORATION INC.

SPOTTED HORSE MINE EQUIPMENT (Continued)

VIKING EXPLORATION INC.

4 sets 7/8 X 3-1/4 hex drill steel (18" - 8')

4 sets 1 X 4-1/4 hex drill steel (18" - 8')

2 sets 7/8 X 4-1/4 hex drill steel (18" - 8')

MSA 4 lamp charging panel w/type S lamps

1200' - 8" - 10" fan bag

400 rock bolts 4' - 6' - 8'

Assay Office - complete

10' dia. X 7' X 5' cylindroconical ore bin (steel - new)

10' dia. X 10' X 5'

Universal 6 X 12 jaw crusher

Humphreys 12 X 12 rolls crusher

2 - 6 X 6 steel water tanks (open)

1 - 10' X 20' steel water tank (closed)

Misc. 1" to 2" pumps, liquid and sand, no motors

Shop built crawler snow plow

1947 Dodge yard truck, new tires - rear

100 hp Ottumwa mine hoist, less motor and cable

50 hp Ottumwa mine hoist, less motor and cable

20 hp Nova mine hoist, less motor and cable

All above listed equipment in good to excellent condition, only minor maintenance required, if at all.

Also, supplies, spare parts, fittings, lubricants, misc. pipe, wire, cable, hose and small equipment items.

VIKING EXPLORATION INC

Maps
OME- 6830

INSTRUCTIONS FOR USE

1. Identify Agency of Addressee
2. Void Previously Used Block
3. Write Clearly
4. Send Surplus Envelopes to Supply Room for Reissue

U. S. Government Messenger Envelope

Standard Form No. 65
November 1961
General Services Administration
General Regulation No. 27

65-105

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
Mr. Burns CS PA Rm 30 Main Gov.	STOP		STOP
~~The Archivist Agency Library 1041 1750~~	STOP	Asst. Secy. ~~Mrs. Lear~~	STOP
Mrs. C. ~~Sugarman~~ I/R Rm 730 1750	STOP	U S - OME 12th floor	STOP
	STOP 43	4461 USGS - GSA	STOP
Mr. Sutherland Bureau of Reclamation	STOP		STOP
	STOP		STOP
~~Code 208~~	STOP		STOP
~~Mr. Herbert A. Swenson, WRR Rm. 5249 - Interior Bldg.~~	STOP		STOP
Mr. Roy E. Oltman USGS 2228 - GSA Bldg	STOP		STOP
	STOP		STOP

Use other side

Use STOP only when messenger service between Government buildings in Washington, D. C., is required or wherever a STOP system is used. Your mail room has STOP information.

NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM		NAME (OR TITLE) OF ADDRESSEE, AGENCY, ORGANIZATIONAL UNIT, ADDRESS, AND ROOM	
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP
	STOP		STOP

Use other side first

☆ U.S. GOVERNMENT PRINTING OFFICE: 1964—O-719-076

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VIRGINIA 22092

August 27, 1976

Memorandum

To: Branch of Financial Management
Geological Survey

From: Chief, Office of Minerals Exploration

Subject: Recording of realized loss under OME contract

Write-off of the following realized loss under OME contract is hereby authorized:

Contract	Docket	Operator	Write-off
2309	6880	Viking Exploration, Inc.	$11,925.00

Harold Kirkemo

Harold Kirkemo

cc:
DRF
MR Rdg.
OME Rdg.
OME Files
Mr. Kirkemo
Region

MME Form 14
July 1965

Contract No. ~~Ldr-E~~ 14-23) 2309

Docket No. ~~E-24~~ MME) 6880

Date of Action August 26, 1976
Release of funds)

DEPARTMENT OF THE INTERIOR
U. S. Geological Survey

OBLIGATION DOCUMENT

To: Chief, Branch of Budget & Finance

From: Chief, Office of Minerals Exploration

Please enter the amounts shown below on the accounts of the Office of Minerals Exploration.

Name and Address of Contractor:

Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Date of Contract	Region	State	Commodity
Dec. 19, 1972	I	Montana	Gold
	Reserve		Obligation
Prior Amount			$9,450.
Increase			0
Decrease			9,450.
Revised Amount			0

Remarks: $9,450 to be released.

(Correction of data submitted June 24, 1974)

cc: 110
800
210

United States Department of the Interior

GEOLOGICAL SURVEY
Denver Federal Center
Denver, Colorado 80225

IN REPLY REFER TO:

Office of Minerals Exploration
Building 53 - Northwest Wing -- 2nd floor

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 14 1975

INITIALS	CODE
HK	HK

January 9, 1975

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Final Summary Report
OME-6880 Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Final Field Rpt.

INTRODUCTION

This report summarizes an OME project to explore underground for extensions of known ore-producing lenses along a limestone-porphyry contact at the Spotted Horse Mine, about 13 miles northeast of Lewistown, Montana. The contract, dated December 19, 1972, was for a total estimated cost of $28,500.00, of which the Government would contribute 75 percent or $21,375.00. Work, started in June 1973, and completed in December 1973, consisted of drifting 34 feet on the 4 level and 178 feet on the 6 level. The work was not successful in finding extensions of formerly productive ore bodies. The approved cost of the completed work was $15,900.00 of which the Government contributed $11,925.00. The Government notified the Operator on November 12, 1974, that it retains no claim or lien against the property subject to the contract or any future production therefrom.

OPERATOR

Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Officers include:

President: Charles A. Einarsen, Denver Center Building

Vice President: Theodore D. Sheldon, Denver Center Building.

Secretary-Treasurer: F. M. Stevenson, 1200 Security Life Building, Denver, Colorado

Viking Exploration, Inc. made an agreement with Johns-Manville Corporation on January 1, 1973, whereby Johns-Manville would contribute $50,000.00 for development of the Spotted Horse mine. In consideration of this, Johns-Manville was granted a 34 percent interest in all profits resulting from mining at the property and proceeds of the sale or liquidation of assets of the property.

PROPERTY

The land subject to the contract consists of two patented lode mining claims and five unpatented lode mining claims, all in Sec. 5, T. 16 N., R. 20 E., Fergus County, Montana (Fig. 1 - Claim and partial level maps, Spotted Horse mine, Fergus County, Montana). The patented claims are:

Name	Survey No.	Patent No.
Spotted Horse	2361	16116
Kentucky Favorite	3314	19189

The unpatented claims are recorded in the Records of the County Clerk, Fergus County, Montana as follows:

	Lode Locations	
Name	Book No.	Page
Ole Murph	17	238
Asphidity	17	237
George H.	17	236
Puffrey	17	235
Deefy	17	318,320

The two patented lode mining claims are owned by First Trust Company of Montana, Great Falls, Montana, and are leased to L. C. Hoffman, doing business as Blue Range Mining Company, until May 31, 1976. The Blue Range Mining Company is also the locator of the Old Murph, Asphidity, George H., and Puffrey unpatented lode mining claims. These six mining claims have been assigned to Viking Exploration, Inc., a Colorado corporation, by L. C. Hoffman under terms of a Mining Sub-Lease and Option dated February 28, 1972. Viking Exploration, Inc. is in possession of the Deefy lode mining claim by right of location.

LOCATION AND ACCESSIBILITY

The Spotted Horse mine is in the SE-1/4 Sec. 5, T. 16 N., R. 20 E., at an altitude of approximately 5100 feet on the east slope of Gold Hill. To reach the mine from Lewistown, Montana, one can drive north on U. S. Highway 19

for 11 miles, then turn east on the Maiden road and follow it for about 10 miles to the mine. Another approach to the mine from Lewistown is to follow U. S. Highway 87 east for 11 miles, then turn north on a gravelled road that passes near Gilt Edge then follow an unimproved road through Maiden Canyon to the mine; this latter route is about the same length as the route that first goes north from Lewistown. Both routes are sometimes impassable during the winter months.

GEOLOGY

Most of the known ore bodies on the Spotted Horse claim are in a crudely triangular-shaped area of Carboniferous limestone bounded on the north and west by rhyolite porphyry and on the northeast by syenite porphyry. The ore occurs in narrow lenses along the steeply-dipping porphyry-limestone contact and in brecciated zones within either the limestone or porphyry. The ore lenses are elongate sub-parallel to the limestone-porphyry contact, and strike either northeasterly or northwesterly. Some ore lenses were found at or near the surface, whereas others do not extend upward to the surface and were found by underground exploration.

Ore is generally limestone and rhyolite fragments cemented by quartz, fluorite, and green vanadium mica. Tiny rust-colored grains might be altered tellurdies or hydrated pyrite. Native gold reportedly occurs within the fluorite. According to Weed and Pirsson (1898, p. 590), the ore "Sometimes is a rusty limonitic limestone, sometimes a dark brownish-gray to clear-gray limestone, rather crystalline, but otherwise not appearing altered, and showing here and there patches of red-purple fluorite with dull, greenish, soft, earthy flecks, which sometimes have a bronze-like color and which are an altered gold compound, probably a telluride. These spots will, on heating in a forge, come out spangled and glittering with beads and threads of gold. This is the character of the best and richest ore which has been found in the district, and the bonanza shoots of the Spotted Horse were composed of it."

All the reports on the mine indicate that locally some very rich ore occurred in the shoots. Some of the rich bodies of soft, decomposed gold telluride were taken out with a spoon and packed in small sacks (Weed and Pirsson, 1898, p. 588). Samples of supposedly typical ore collected during the OME examination assayed 0.29 and 0.46 ounces gold per ton and 4.3 and 4.05 ounces silver per ton. These samples were of brecciated dark gray limestone with abundant green vanadium mica and purple fluorite.

Guides to ore are obscure. Brecciated rock is the common host rock but some breccia is barren. Most ore-bodies are near the limestone-porphyry contact, but some are distant from the contact, in either the limestone or the porphyry. There is no conspicuous aureole of altered rock surrounding the ore bodies. Drilling is not a good method with which to search for ore bodies as drill recovery is poor and water-loss a problem in the porous ore zones.

The ore lenses are generally samll but some persist to considerable depth.

The Discovery vein has been mined from the surface to the 8 level; on the 6 level this ore lens is about 160 feet long and about 8 feet thick. Other ore lenses are less persistent with depth and are commonly shorter than the Discovery vein.

HISTORY OF MINE

The Spotted Horse is an old mine, first being located in 1881, and worked intermittently until 1901; production during this period is estimated to be about 3 million dollars (Robertson, 1950, p. 19). The mine was idle until 1910 when it was re-activated and between then and 1935, produced 13,274.6 ounces of gold and about 15,000 ounces of silver. Apparently the mine was idle after 1935 until Mr. L. C. Hoffman, Lewistown, Montana, obtained a lease on it in 1968, and started rehabilitating the underground workings. At the time of the OME examination the mine had been dewatered below the 6 level but the 7 level was under water and not accessible for examination.

PURPOSE OF PROJECT

The purpose of the project was to explore for gold ore by drifting and crosscutting in Carboniferous limestone near its contact with intrusive syenite porphyry and rhyolite porphyry on the 4 and 6 levels of the Spotted Horse mine.

CONTRACT

The contract, No. 2309, dated December 19, 1972, required that work was to begin on or before June 1, 1973, and to be completed within 18 months from the contract date. On the 4 level, a drift was to start about 30 feet northwest of the Spotted Horse main shaft and extend about 80 feet north-northeast to the limestone-rhyolite porphyry contact. On the 6 level, a drift was to start about 75 feet south of the Spotted Horse main shaft and follow the limestone-syenite porphyry contact for 300 feet to explore for downward extensions of the Bonanza and Glory Hole veins. The Government would participate in 75 percent of the agreed-on unit cost of $75/ft. for drifting; this unit cost included all costsof labor, materials, equipment purchased, supervision, insurance, assays, mileage, and office expense. The Government would retain no equity in any of the equipment or materials used.

PROJECT WORK

Project work started in May 1973 as rehabilitation of the shaft and the 6th level was resumed. Some slabbing on the 6 level was done in June but no contract work was done in July as a headframe was constructed. Work on the 6 level resumed in August and by October 3, 97 feet of drift had been completedl The first 30 feet of drift had followed the limestone-porphyry contact but after that the drift had entered limestone and the porphyry contact was not exposed. After futile attempts to reach the contact with

long drill steel, the Operator abandoned part of the drift and, at a point about 50 feet from the beginning point of OME work, turned the drift sharp to the East and once again followed the limestone-porphyry contact. During the time drifting was in progress the Operator, at no cost to the Government, continued dewatering the 7 level.

The Operator advised the OME office on December 7, 1973, that the 7 level had been sufficiently dewatered for inspection and that the ore body toward which the 6 level OME drift was heading had been mined-out between the 7 and 4 level. Drifting on the 6 level was suspended, as there was no good reason to continue it. The face of the drift is about 90 NNW from the projected position of the Glory Hole vein -- the target of the exploration, (Figure 1).

Drifting on the 4 level extended the heading 34 feet in a general curving direction to the north (fig. 1). Trouble was experienced at the start of this work for apparently a stope was only a few feet beneath the drift and after the first round was blasted, the drift sill disappeared and considerable ground support had to be installed. This drift was discontinued prior to December 25, 1973, and was never resumed. One reason for the interruption of drifting was that the mine was converted to diesel power. Also, about this time, the Operator began a diamond-drill program from underground stations, apparently as a result of discussions with Johns-Manville personnel.

The Operator requested, and was denied, permission to use the unexpended drifting funds for underground diamond drilling. He then requested a recess of OME work until the diamond-drilling undertaken by Johns-Manville was completed, probably about September 30, 1974. This request was refused because it was agreed at the beginning of the contract that OME work was to take priority over any other work done in the mine.

The contract expired on June 19, 1974. Work completed totalled 212 feet of drift. The agreed-on cost of $75 per foot totalled $15,900.00. The final payment of the Government's share totalling $11,925.00 was paid to the Operator in September 1974.

REPORT

The Operator submitted a final report on August 15, 1974.

PROJECT RESULTS

The work completed under terms of the contract contributed very little to the understanding of the ore controls at the mine. The drifting on 6 level did show that there is a sharp change of strike along the limestone-porphyry contact and that there is a flattening in the dip of this contact between the 7 and 4 levels. The drifting on the 4 level was insufficient to test the target area.

CONCLUSIONS

This project is an example of what sometimes happens in underground exploration in a formerly productive mine where all old workings are not made accessible for examination prior to planning exploration. If the 7 level had been completely dewatered prior to the start of the OME contract, it is doubtful that an OME contract would have been negotiated. Only after the 7 level was dewatered was it discovered that the object of the exploration had already been mined.

Another unsatisfactory feature of the contract work was that it was being done at the same time that an associate of the Operator was carrying out exploration in a part of the mine not being explored by the OME work. Because of this the OME work was interrupted while the other work, diamond drilling, was done. The Operator had obligations both to OME and to his other associate, Johns-Manville, and consequently he could not give full attnetion to either.

The Operator has advised OME that the diamond drilling completed under the agreement with Johns-Manville found no positive evidence of ore, even though several potential target areas were tested.

Perhaps there are economic quantities or gold ore at depths below that which OME explored. There are some old workings that extend to the 8 level, about 150 feet below the 6 level; reports indicate some ore was removed from the 8 level -- perahps the productive ore lenses extend to greater depth. An efficient Operator might be able to conduct a successful exploration prject to explore for ore at depth in the Spotted Horse mine. It is highly doubtful that Viking Exploration, Inc. is competent to conduct such a project.

REFERENCES CITED

Robertson, A. F., 1950, Mines and mineral deposits (except fuels) Fergus County, Montana: U. S. Bur. Mines Inf. Circ. 7544, 76 p.

Weed, W. H., and Pirsson, L. V., 1898, Geology and mineral resources of the Judith Mountains of Montana: U. S. Geol. Survey 18th Annual Rpt. pt. 3, Economic Geology, pp. 437-616.

Willard P. Puffett

Willard P. Puffett

Enclosure: Figure 1 - Claim and Partial Level Maps, Spotted Horse Mine, Fergus County, Montana

NOV 12 1974

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

Reference is made to your terminated exploration contract with the Government.

We sincerely regret that the work performed did not result in a certification of possible production under the provisions of the contract. In the absence of such certification, the Government retains no claim or lien against the property subject to the contract or any future production therefrom. We, therefore, are closing our books and records on this contract. Your attention, however, is called to the provisions of the contract which require the Operator to keep and preserve certain records for the periods indicated.

We appreciate your interest and participation in the OME exploration program.

Sincerely yours,

Harold Kirkemo, Chief
Office of Minerals Exploration

Enclosure

cc: DRF
MR Rdg.
OME Rdg./OME Files
Mr. Kirkemo
Region I
HKirkemo/gpw

NOV 12 1974

The Travelers Indemnity Company
101 University Boulevard
Denver, Colorado 80206

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Gentlemen:

The subject contract with Viking Exploration, Inc. terminated June 19, 1974, and the Operator has completed closing actions under terms of the contract. Therefore, effective as of today's date, the Government herewith releases the Performance Bond, dated December 19, 1972, issued by The Travelers Indemnity Company and signed by Robert J. Sunich, Attorney-in-Fact, covering obligations under the contract.

Sincerely yours,

Harold Kirkemo, Chief
Office of Minerals Exploration

Copy to: Mr. Charles A. Kinarsen
Viking Exploration, Inc.

cc:
DRF
MR Rdg.
OME Rdg.
OME Files
Mr. Kirkemo
Region I

HKirkemo/gpw

United States Department of the Interior
GEOLOGICAL SURVEY
Denver Federal Center
Denver, Colorado 80225
Office of Minerals Exploration
Bldg. 53 Rm 28

IN REPLY REFER TO:

August 15, 1974

Memorandum:

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Final Report from Operator
OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Enclosed is a copy of the Operator's final report for work done at the Spotted Horse mine. The report consists of a one-page summary plus two maps.

The discussion regarding the geology and lack of ore in the OME workings is adequate. I would have preferred more discussion regarding the costs of the work, but these were probably not available to Mr. Hoffman, who prepared the report.

I recommend that we accept this report as adequate and release the $200 that has been suspended from the Operator's voucher, pending receipt of this report.

I will hope to have the final report on this project ready for transmittal to you prior to September 2, 1974, on which date I will be leaving for a 90-day tour in Saudi Arabia. However, there is no reason to issue a Certificate of Possible Production for work done at the Spotted Horse mine. The Operator should be so advised that the Government does not have a lien on future production from the mine.

Willard P. Puffett

Willard P. Puffett

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

August 14, 1974

OME Region III
RECEIVED
AUG 15 1974
Denver, Colorado

Mr. Willard Puffett
Office of Mineral Exploration
U. S. Geological Survey
Building 53, Room 28
Denver Federal Center
Denver, Colorado 80225

Dear Mr. Puffett:

Enclosed herewith are two copies of the final report on the Spotted Horse Mine OME 6880 (Gold) which were prepared by Mr. Larry C. Hoffman. I believe this final report now should satisfy your requirements for paying Viking the $200 previously withheld from an earlier OME voucher.

We certainly appreciate the interest you have shown in the Spotted Horse mine and your cooperation over the last several months of the program.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen
President

CAE/db
Enclosures

OME Region IV
RECEIVED
AUG 15 1974
Denver, Colo.

Final Opr. Report

Final Report
SPOTTED HORSE MINE
OME 6880 (Gold)
Fergus County, Montana

The project was begun in May, 1973 with drifting on the contact on the 6th level. Drifting proceeded very slowly due to inadequate air supply for drift machines and the air shaft hoist, lack of a reliable lead miner, and broken, vuggy ground causing explosives to propogate.

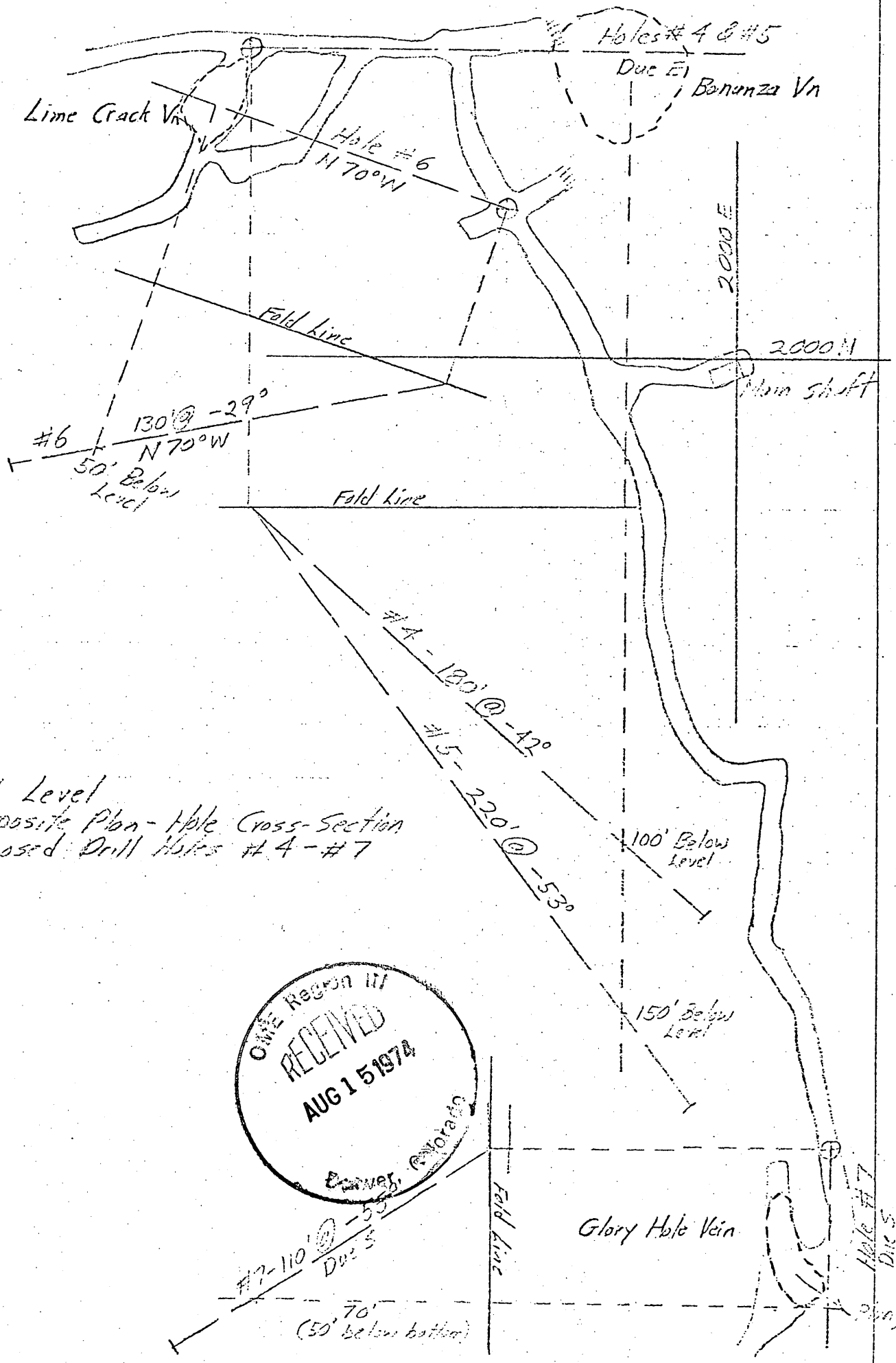
At approximately 48 ft., the contact swerved sharply left, much more sharply than on the upper levels. Expecting a more gentle curve, the drift was continued in a curve to the left, but failed to meet the contact. Drifting was resumed on the contact and continued for about 83 ft. until it was discovered that the contact had already been explored on the 7th level. Until that time the 7th level had been flooded.

Work was suspended on the 6th level until Mr. Puffett could examine the situation. Operations were moved to the 4th level, and 33 ft. of drifting was done before orders were received from Viking Exploration, Inc. head office to cease all work on the drift.

To the extent developed, neither drift showed any significant mineralization to warrant channel samples. Occasional chip samples were taken and assayed where there were small areas of character change. In both drifts the contact stayed "tight", occasional FeOx staining was the only sign of mineralization. On the 7th level the contact was explored for over 700 ft., with only one small orebody discovered. This vein was stoped up over 180 ft., the limit of visual inspection. This stope intersected the 6th level at a point on the contact about 100 ft. from the present 6th level face.

Total footage is as stated on the monthly report for December 1973. Assay results on the chip samples were submitted previously. No channel samples were taken since no significant structures were encountered, and apparently none were noted by Mr. Puffett on his final visit, as he requested no channel samples be taken.

RECEIVED AUG 14 1974



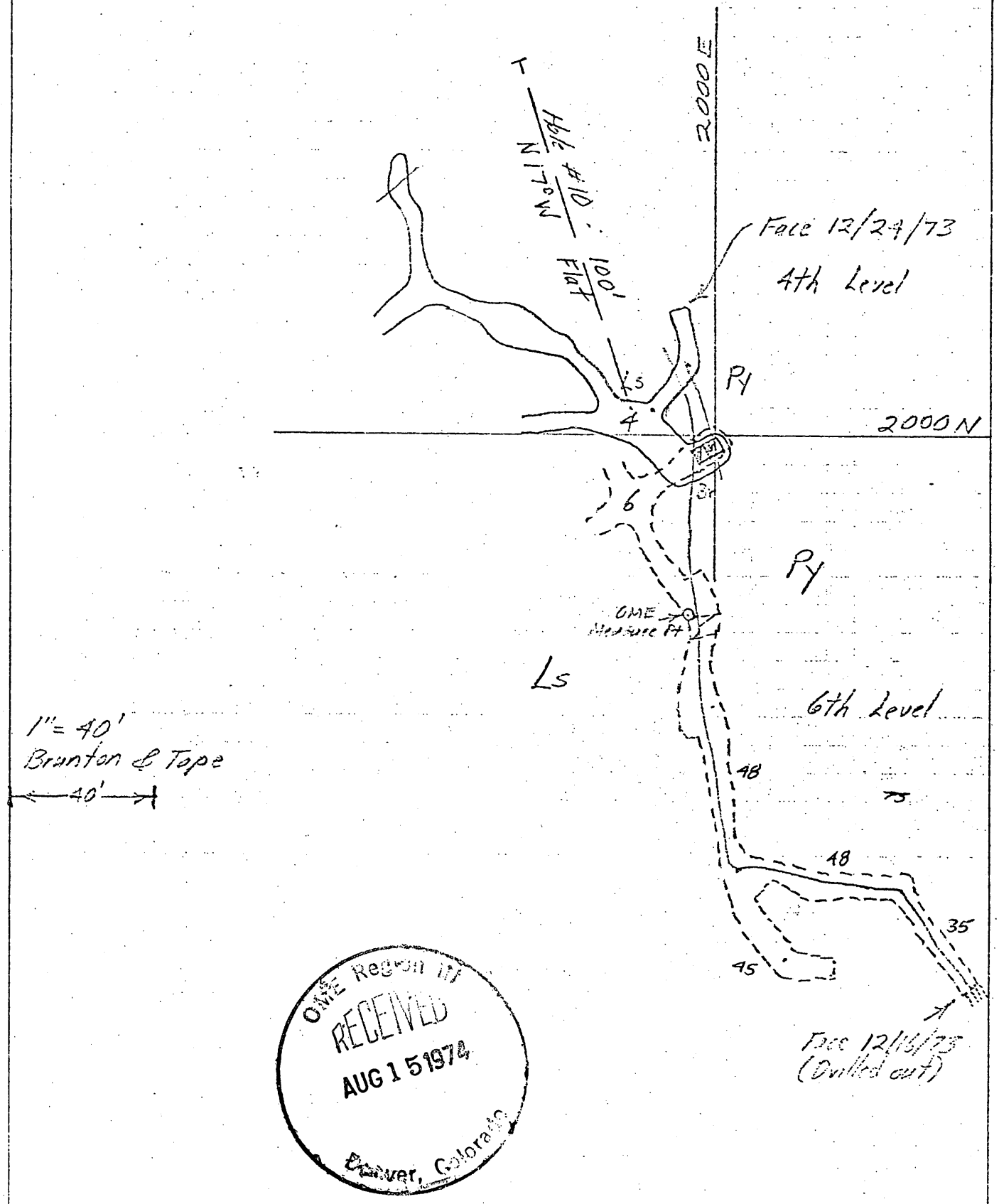
7th Level
Composite Plan - Hole Cross-Section
Proposed Drill Holes #4 - #7

OME Region III
RECEIVED
AUG 15 1974
Denver, Colorado

Spotted Horse [redacted] OME 5890 (6516) [redacted] Hoffman 1/23/74

8/1/74

Supplement to report for December, 1973



OME Region IV
RECEIVED
AUG 15 1974
Denver, Colorado

Building 53-Room 28

July 1, 1974

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

The OME contract at the Spotted Horse mine expired on June 19, 1974. The contract requires that the Operator shall furnish the Government with three copies of a final report which includes a geological and engineering evaluation of the contract work. A properly prepared report that contains maps and sketches, assay data, and summary of work performed can be valuable to both the Operator and to the Government.

I urge you to prepare and submit the final report at an early date. Upon receipt of a satisfactory report we can release the monies withheld from your last voucher.

Sincerely,

Willard P. Puffett
Field Officer, Region I
Office of Minerals Exploration

cc: OME-6880
OME ✓
DRF

Standard Form No. 1048
7 GAO 5000
1048-104

MEMORANDUM

PUBLIC VOUCHER FOR REFUNDS

05321A

OME 2309

Voucher No. _____

U. S. Department of the Interior, Geological Survey
(Department or Establishment, Bureau or Office)

Location: Reston, Virginia 22092

Appropriation or Fund: 14X6875(08)

PAID BY

To
Address

Viking Exploration, Inc.
1776 Lincoln Street
Denver, Colorado 80203

Withheld
~~XXXXXXXXXXXXXX~~ from the above-named depositor on November 19, 1973

~~XXX~~ From voucher for October 1973 pending receipt of sample data and assay certificates.

has been applied as herein stated and the balance indicated is returned herewith:

Amount of ~~XXXXXX~~ withheld	$ 200.00
Applied as explained in "Remarks" below	-0-
	-0-
Balance authorized to be refunded	$ 200.00

Remarks:

Acceptable Operator's Final Report received, therefore the $200.00 withheld from the voucher for October 1973 is herewith repaid.

Ref: Memorandum from Chief, Office of Minerals Exploration, dated 9/5/74.

September 19,1974

Refund by
Check No. 41 2590
Cash, $ _____ on _____
Other method, $ _____ (Describe)

☆ U.S. GOVERNMENT PRINTING OFFICE : 1960 O—572727

United States Department of the Interior
GEOLOGICAL SURVEY
Denver Federal Center
Denver, Colorado 80225

IN REPLY REFER TO:

Office of Minerals Exploration
Building 53 Room 28

June 21, 1974

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

I conferred with Mr. Charles Einarsen, President, Viking Exploration, Inc. in his Denver office on Thursday afternoon, June 20, 1974. Mr. Mike Sharratt, geologist for Johns-Manville, was also present. We examined a three-dimensional model of the Spotted Horse mine and discussed various exploration possibilities.

The OME contract with Viking Exploration, Inc. expired on June 19, 1974. Mr. Einarsen had hoped that we could grant the company an extension of time to complete the proposed work; however, he wanted a recess while Johns-Manville completed some planned diamond drilling. There was no justification to grant Mr. Einarsen's request.

Vouchers have been submitted for all the completed contract work. Two hundred dollars has been withheld pending receipt of the Operator's final report.

I made a final examination of the mine on March 13, 1974. There is no reason to recommend a certification of discovery.

Willard P. Puffett

Willard P. Puffett

Kirk-

Please note some of the typing on this as it is the fault of Mary's typewriter - nothers.

For example - the last word in the first paragraph and the 4th word in the third paragraph. - Wieland

May 17, 1974

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

This is in reply to your request of April 26, 1974, to Mr. Willard P. Puffett, OME Field Officer, Region I, to extend the subject contract to December 31, 1974.

For the reasons cited below, we have decided not to extend the contract as requested, and will allow the contract to terminate on June 19, 1974, the date set forth in Article 1(a).

Work on the OME contract has not proceeded diligently as is required by Article 3(a), the Government was not consulted or informed on all phases of the work as it progressed as is required by Article 3(b), and the OME work was postponed while other exploratory work was done. It is reasonable to assume that the 46 feet of drifting yet to complete on the 4th level could have been finished in the nearly five months since any work was done on the OME project.

You advised Mr. Puffett on February 15, 1974, that drifting on the 4th level had been temporarily discontinued while a diesel hoist engine was installed, an operation expected to take about 3 weeks. Actually, OME work ceased the latter part of December but we were not advised of the plan to discontinue work then and no request for a recess was submitted. Now we understand that no work under the OME contract is contemplated until the present diamond drilling program by Johns-Manville is completed sometime next September.

In view of the activity unrelated to the OME program, and the lack of diligent advance on the OME work, we conclude that it is in our best interest not to extend the termination date of the contract beyond June 19, 1974. Any new work on the OME project completed by that date will be considered for reimbursement under provisions of the contract.

Sincerely yours,

Harold Kirkemo, Chief
Office of Minerals Exploration

cc:
DRF
MR Rdg.
OME Rdg.
OME Files
Mr. Kirkemo
Region I

HKirkemo/gpw

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
MAY 10 1974
INITIALS | CODE

April 29, 1974

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Request for time extension
OME-6880
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Enclosed is a letter from Charles A. Einarsen, President of Viking Exploration, Inc., requesting that we extend the time for completion of their contract from June 19, 1974 to December 31, 1974. There has been no contract work done since the latter part of December 1973. Diamond drilling, unrelated to the OME work and requested and initiated by Johns-Manville, has been continuing from underground drill stations. Mr. Einarsen states that the diamond drilling should be completed about the end of September.

The contract calls for a maximum of 80 feet of drifting on the 4 level. I measured 34 feet of drift on March 13, 1974; no further drifting has been done.

Article 3 (a) of the contract states that "The work shall be performed diligently..." The evidence indicates this has not been the case. Without requesting a recess of the contract work, the Operator quit drifting on the 4 level and has done no contract work for about 4 months. He now asks for an extension of time for the contract to be completed but does not plan to resume drifting until October 1974 at the earliest.

In a letter to you dated July 10, 1973, Mr. Einarsen made the following statements: "You have stated that OME work shall take precedence over other work in the same area, and that if there is a conflict, work under the lease agreement must be postponed until OME work is completed.....Thus, OME work will be given precedence over any conflicting work in the same area, unless such precedence appears detrimental to ultimate development prospects. If such a situation should arise, your office would be consulted prior to our taking any action."

In your letter to the Operator, dated July 19, 1973, you state "We appreciate your assurance that OME work will have priority over other work in the same area. Our concern was that progress on the OME project could be delayed or postponed beyond the contract termination date of June 19, 1974, if mining or exploration work, unrelated to the OME contract, was conducted in the same area....."

In a letter to me dated February 15, 1974, Mr. Einarsen made the following statement: "Please be advised that for the present drifting on the 4th level has been temporarily discontinued until such time as we can complete the installation of a diesel hoist engine to replace the air hoist system, which will take approximately 3 weeks." Nothing was said about requesting a recess of OME work while diamond drilling was in progress.

We have never been consulted informally or formally about recessing the OME work while the diamond drilling was being done, until we received the enclosed letter. It is obveious that the Operator has not abided by his statement that we would be consulted prior to taking the action he did. Also, he has not demonstrated that the drifting on the 4 level before or while diamond drilling took place would be detrimental to ultimate development prospects.

I recommend that the contract be terminated because the Operator has not performed diligently. The unused Government's share of the contract work should then be available to be used on other active or pending contracts.

Willard P. Puffett

Willard P. Puffett

Enclosure

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

April 26, 1974

RECEIVED
APR 29 1974
O. M. E.
SPOKANE, WASH.

Mr. W. P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington 99201

OME-6880 (Gold) Contract 2309
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Puffett:

This letter is in further response to your letter of March 29, 1974 and my initial response of April 9, 1974.

When we discontinued drifting on the 4th level we lacked about 50' of intersecting the original target. As you know, we have been following the contact in an attempt to intersect the Glory Hole vein. We still believe that this is an excellent exploration target and we want to resume drifting on the 4th level just as soon as the present diamond drilling operation, requested and initiated by Johns-Manville, has been completed, which is expected to be about the end of September.

We would therefore respectfully request that the OME loan be extended until December 31, 1974, which should give us time to complete the 4th level drifting.

I understand you will be moving to Denver soon, and should like to invite you to inspect the 3-dimensional transparent model of the Spotted Horse Mine which Mr. Larry Hoffman built and which is presently in our Denver office. When you return to Denver I would like to get together with you and Mr. Mike Sharratt of Johns-Manville and go over the model and our total exploration plans in complete detail.

I presume you have received by now the original November-December voucher dated 1/10/74 signed by Larry C. Hoffman. I trust everything is satisfactory now and that it will be approved for payment before long.

Sincerely,

Charles A. Einarsen

Charles A. Einarsen

CAE:lk

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL
CO
O. M. E.
RECEIVED
MAY 10 1974
INITIALS CODE

May 1, 1974

Mr. Charles A. Einarsen
President, Viking Exploration Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME 6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

Thank you for the invitation to visit with you and to study the 3-dimensional transparent model of the Spotted Horse mine. I plan to arrive in Lakewood, Colorado about June 11, 1974, and should be in the Denver area most of the summer. I will contact your office after getting settled.

Your November-December voucher was forwarded to Reston, Virginia, on April 16, 1974. Payment should be made on schedule.

I've forwarded your request to recess the contract work to Reston, Virginia, with my recommendations. A review of our correspondence reveals that there have been some contradictions during the lifetime of the contract and in negotiations leading to it. Consequently, it is possible that your request will not receive favorable action. Of course, all decisions are made in our Reston office.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: DRF
OME

Puffett/at

FORM
MARC

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

RECEIVED
JAN 21 1974
O. M. E.
SPOKANE, WASH.

HL 4/19/74

OPERATOR'S MONTHLY VOUCHER

For Month of November-December 1973

Docket No. OME 6880 (Gold)
Contract 14-08-0001 (2309)
Contract Amount $ 28,500
Gov't. Participation % 75 $ 21,375

Operator's Name Viking Exploration, Inc
Address 1776 Lincoln St Denver Colo 80203

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH		TO DATE		THIS MONTH		TO DATE	
	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS
		$		$		$		$
5x7' Drifting	71	5325	212	15,900	71 ft.	5325	212 ft	15,900
37 ft on Level 6								
34 ft on Level 4								
TOTALS	44	$ 5325	212	$ 15,900		$ 5325.00		$ 15,900.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 1/10/74 *Payee Viking Exploration, Inc

Per L C Hoffman Title Mining Projects Engineer

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature Willard P Puffett 2/8/74
OME Field Officer Date

(63) 14X0604

Approved for: $ 3993.75
(SUBJECT TO AUDIT)

Signature FAN

Date 4/25/74 Vou. No R4482A1
(SEE OTHER SIDE)

RECEIVED
JAN 21
O. M. E.
SPOKANE, WASH.

Narrative Report
OME-6880 (Gold)
Spotted Horse Mine
Lewistown, Montana 59457
Contract 2309

January 1, 1974

November-December:

The 6th level drift was suspended on December 6 after the 7th level was pumped out and it was discovered that the contact had already been explored for over 700 feet from the shaft. An ore body was found by this drift and apparently stoped up to the 4th level. Assays of remnants indicate it was quite high grade, our samples running 4 to 20 oz. Au/ton.

Work was begun on the 4th level and is progressing along the contact. Considerable difficulty was encountered collaring this drift due to loose fill in a cave under the tracks. The drift is continually turning to follow the contact, which is between porphyry and breccia.

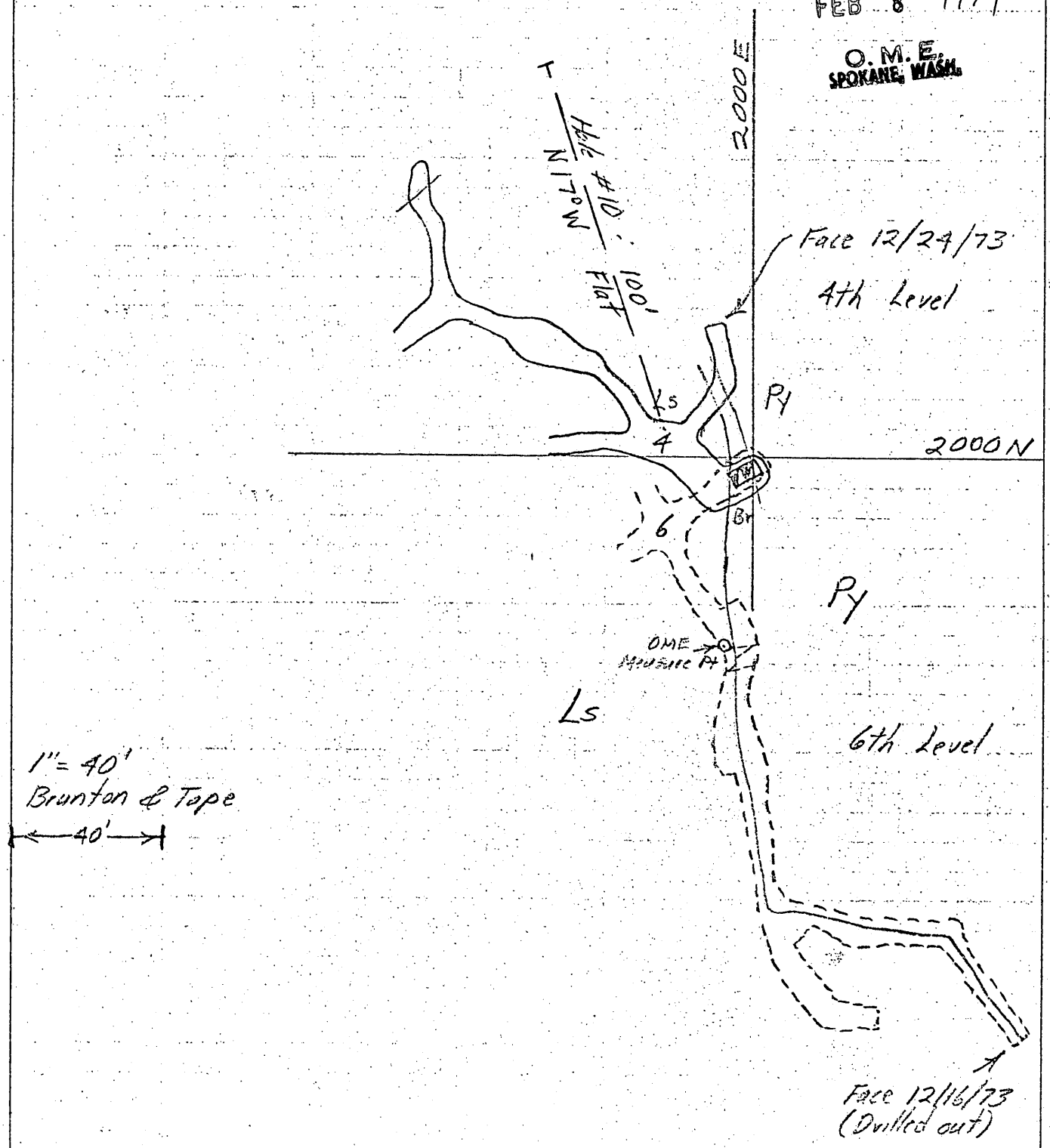
As the mine does its own assaying, there are no assay certificates as such, and the sampling to date has been more out of curiosity than sampling a mineralized structure. Therefore, there has been no reason to channel, and no structure to be perpendicular to.

L. C. Hoffman

Spotted Horse Mine | OME 6890 (Gold) | J. C. Hoffman 1/28/74

Supplement to report for December, 1973

RECEIVED
FEB 8 1974
O. M. E.
SPOKANE, WASH.



42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL

November-December Assays
Spotted Horse Mine

	Au (oz./ton)	Ag (oz./ton)
4034	.03	.03
4035	.04	.09
4036	.30	.16
6073	.09	.26
6074	.07	.08
6075	.08	.92
6076	.01	.20
6077	.07	.41
6078	.06	.75
6079	.11	.76
6080	.01	.54
6081	--	.33
6082	.08	.09
6083	--	.25
6084	--	.16
6085	.03	.17
6086	.01	.27
6087	--	.07
6088	--	.10
6089	--	.29
6090	--	.84
6091	--	.02
6092	.01	.77
6093	--	.53
6094	--	.30
6095	.02	.10
6096	.01	1.06
6097	.66	1.62
6098	.02	.38
6099	1.48	2.34
6100	--	1.36
6101	--	--
6102	--	--
6103	.01	.14
6104	--	--
6105	T	.48
6105A	.07	.14
6106	.20	.30
6107	.18	.31

RECEIVED
JAN 21
O. M. E.
SPOKANE, WASH.

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 26 1974
INITIALS | CODE

March 19, 1974

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Request for diamond drilling
OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

INTRODUCTION

In a letter dated Feb. 4, 1974 (copies of which are enclosed), Mr. C. L. Hoffman proposes a diamond drill program to substitute for the uncompleted work remaining in the contract. The contract calls for 380 feet of drifting and crosscutting at a fixed unit cost of $75.00 per foot. Government participation at 75 percent totals $21,375.00. The Operator has completed 178 feet of drifting and crosscutting on the 6 level and 34 feet on the 4 level; he does not plan to continue this work on either level. Total unused funds in the contract, after allowing for the 212 feet of drifting and crosscutting, is $12,600; the Government's share of this is $9,450.00.

Mr. Hoffman proposes the drilling of 10 holes from 6 underground drill stations. Seven holes are to be drilled from the 7 level, two from the 6 level, and one from the 4 level. All but the hole planned on the 4 level are to search for downward extensions of known productive ore shoots. The drilling is to be done by personnel now employed at the mine; none is to be contracted. Mr. Hoffman estimates the holes can be drilled for $7.16 per foot; he did not make allowances for initially installing the drill rig or for moving it between the various drill sites.

RECOMMENDATIONS

I recommend that the Office of Minerals Exploration not participate in the proposed diamond drilling. The project should be terminated if the Operator does not plan to continue the drifting on the 4 level. The Operator should be so notified and requested to submit a final report.

DISCUSSION OF PROPOSAL

The ore bodies at the Spotted Horse mine are in Carboniferous limestone along a contact with intrusive porphyry. The most important ore minerals are gold tellurides that, in the richer parts of the ore bodies, are accompanied by fluorite and roscoelite.

In his application for the proposed drifting and crosscutting, Mr. Hoffman stated that diamond drilling is not a good method for ore search at the Spotted Horse mine because the ore zones are porous, drill recovery is poor, and water loss is a problem. Recently, however, he has done about 500 feet of diamond drilling, some of it through brecciated ground, and has obtained very good ore recovery. None of the recent drilling has gone through ore-mineralized ground and perhaps core recovery would be poor in these zones. Exposures of ore shoot margins in the mine indicate the ore-bearing rock is vuggy, porous, and strongly leached; doubtless this kind of rock would present problems in core recovery.

I visited the 7 level on March 13. The level had been dewatered recently but still was very muddy. Much old pipe and equipment was in the drifts and would have to be removed before access could be made for a drill rig. In no place did I see an area to set up a drill rig without some wall-rock removal. I estimate that at least $300 worth of work would be necessary to prepare each of the various drill sites. I have no idea what it would cost to lower the drill rig to the level and transport it from the shaft to the planned drill-sites. There is no track on the level, and the shaft has not been sufficiently rehabilitated to permit the cage to descend to the level.

Mr. Hoffman presents figures in his request to suggest that the diamond drilling could be done for $7.16 per foot. I doubt very seriously if he could do the drilling and obtain suitable results for less than twice the per foot cost he lists. I'm sure that the drill site preparation and rehabilitation of the 7 level would add considerably to the costs that Mr. Hoffman lists. Without more supporting cost data I can only surmise what the costs might be; the information listed by Mr. Hoffman is inadequate.

The ore bodies to be searched for by the planned drilling are narrow and, in general, have short strike lengths where mined. Following are lengths of some of the objectives (see map accompanying application report map by Field Officer dated Nov. 7, 1972):

Ore body	4 level	6 level	7 level
Discovery	330 ft long	130 ft long	
Lime Crack	100 ft long	20 ft long	
Mud stope		110 ft long	
Crescent		55 ft long	
Glory Hole			30 ft long

Three of the planned holes are to intersect the Discovery vein, two to intersect the Bonanza, and one each to intersect the Lime Crack and Glory Hole, all below the 7 level. Two holes are to intersect the Mud Stope vein below the 6 level, and the 10th hole is to be drilled horizontally from the 4 level as kind of a prospecting hole as nearly as I can tell.

The size and metal content of the mined-out ore bodies are somewhat conjectural for the information has been supplied in part by non-professional personnel. Present stope sizes are much larger than the original for much rock has sloughed from the stope walls. Hence it is impossible to estimate grade or tonnage of ore to be expected if the proposed diamond drilling is successful. Mr. Hoffman's Feb. 20, 1974, letter to Mr. Charles Einarsen states "Due to the irregular orebodies I cannot say that the work would delineate x tons of ore worth y dollars....." Sampling of the margins of ore bodies gives widely varying results but in no places has systematic sampling across the mineralized zone been possible.

Should the proposed drilling be successfully completed, much development work would have to be done to reach the ore bodies by drifts and crosscuts from the shaft. The ore to be intersected by holes 1, 2, and 3 is 400 feet from the shaft; this ore could be reached by deepening the winze between 7 and 8 levels, but the 7 level would still have to be rehabilitated to transport the ore to the shaft.

Ore to be intersected by holes 4 and 5 is 100 feet north of the shaft and 100 to 150 feet below the 7 level. Ore to be intersected by hole 6 is 160 feet from the shaft and that in hole 7 is 280 feet from the shaft.

Planned holes 8 and 9 could reach their objective from the proposed drill site on 7 level about as well as making a new set-up on the 6 level that is proposed by the applicant.

I learned during my March 13 visit to the mine that Viking Exploration, Inc. funds for exploration are nearing depletion. Also, the funds scheduled to be spent by Johns-Mansville are about exhausted. There probably still remains sufficient funds for the Operator to complete the proposed diamond drilling if the costs as proposed by Mr. Hoffman are realistic.

CONCLUSIONS

The objectives of the proposed diamond drilling are narrow, relatively short ore shoots that are downward extensions of ore bodies that have been mined in the upper part of the mine. Actual metal content of the ore bodies is unknown but parts of them did contain fairly rich gold ore. The known ore bodies were in vuggy, porous, oxidized limestone that might not give good core recovery if diamond drilled.

The applicant's proposed cost for the drilling does not seem realistic. No provisions have been made for moving the drill rig between set-ups or for completing the rehabilitation of the 7 level from which much of the drilling is planned.

If the mine is once more to become productive it seems that the best place to search for new ore is the downward extensions of the known ore bodies. Diamond drilling would be a feasible first step in the search for these ore bodies. However, the cost of the drilling will only be a small part of the exploration for the shaft would have to be deepened and extensive drifting completed to reach the ore, if present, at the level of the proposed intersections in the diamond drill holes.

I doubt very seriously that the ore bodies, even if proved to extend to depth by the drilling, will be large or rich enough to justify the expense of the proposed diamond drilling. Therefore, I recommend that the Government not participate in this work.

Enclosures

Willard P. Puffett

Willard P. Puffett

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

February 4, 1974

RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.

Mr. W. P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington, 99201

OME - 6880 (Gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Puffett:

Pursuant to your telephone conversations with Mr. Einarsen, I would like to submit a proposed diamond drilling program for your consideration. If possible, we would like to convert the balance of our OME contract to drilling the downward extensions of the major ore shoots of the Spotted Horse Mine, as shown on the enclosed plans and cross sections.

Recently we have done about 500 feet of diamond drilling on an experimental basis in most of the formations in the mine. The results were much better than I thought they would be. We have gotten nearly 100% recovery and have had little problem with lost circulation. I now believe we can successfully drill the ore shoots, especially below the seventh level, since the limestones are much tighter at depth. Considering the problems we have had with drifting, I think that it would be advantageous to use diamond drilling and cover the major targets.

I have proposed two holes into most of the targets to try and expose the pinching and swelling of the ore shoots, as shown on the upper levels.

I have requested bids from two diamond drilling contractors and will forward their bids to you when I receive them.

Ltr. to Mr. W. P. Puffett
OME - 6880 (Gold)
Diamond Drilling Program
February 4, 1974

Also enclosed is the composite plan of the 4th and 6th level drifts, as you requested, and I have shown a proposed diamond drill hole on the fourth level. There have been no significant assays from the last work on six or the work on four.

Removed by WPP and attached to Nov-Dec. 1973 Voucher

Yours very truly,

VIKING EXPLORATION, INC.

RECEIVED
FEB 8 1974
O. M. E.
SPOKANE, WASH.

L. C. Hoffman

LCH:lk
Enc.

Spotted Horse Mine
OME 6880 (Gold)
L. C. Hoffman
January 28, 1974

Hole #1 - Discovery from 7	49°S 50°W	200 ft.
Hole #2 - Discovery from 7	39°S 33°30'W	250 ft.
Hole #3 - Discovery from 7	48°S 33°30'W	290 ft.
Hole #4 - Bonanza from 7	42° Due E	180 ft.
Hole #5 - Bonanza from 7	53° Due E	220 ft.
Hole #6 - Lime Crack from 7	29°N 70°W	130 ft.
Hole #7 - Glory Hole from 7	55° Due S	110 ft.
Hole #8 - Mud Stope from 6	40°	130 ft.
Hole #9 - Mud Stope from 6	60°	200 ft.
Hole #10 - 4th Level from 4	0° N	100 ft.
	Total	1800 ft.
		1810

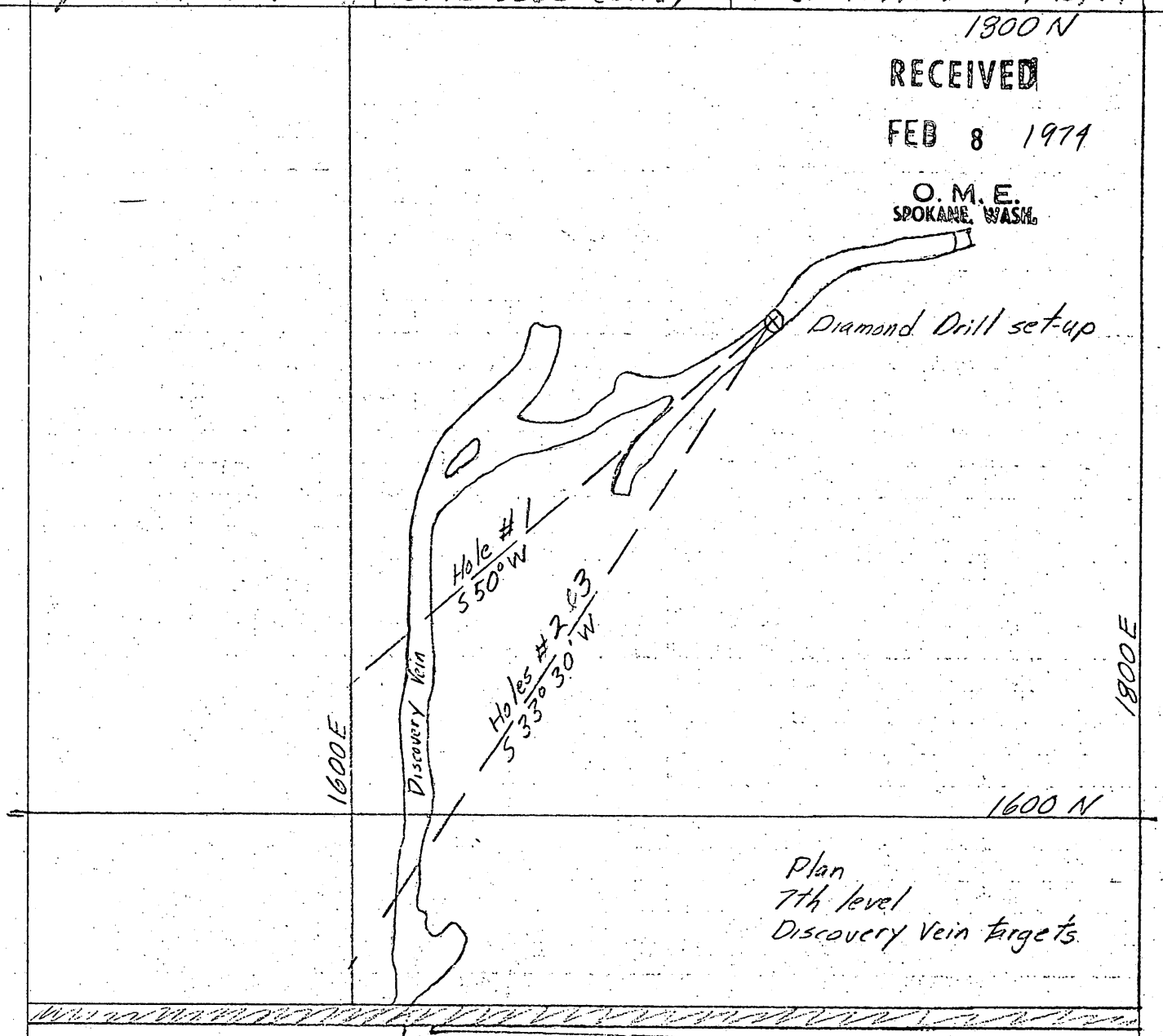
Bits, reamer, barrel	$1.20
Fuel, oil, maint.-comp. & drill	1.11
Labor - 2 drillers, hoist eng., geol. 200 ft./week	3.80
Hoist	.10
Drill rod, grease, etc.	.40
Assaying, 10% of core, 2' samples	.25
Core storage	.30
	$7.16 x 1830' = $12,888

Remaining OME contract	$12,600
Remaining OME share	9,450
OME share of proposed drilling	73.324%

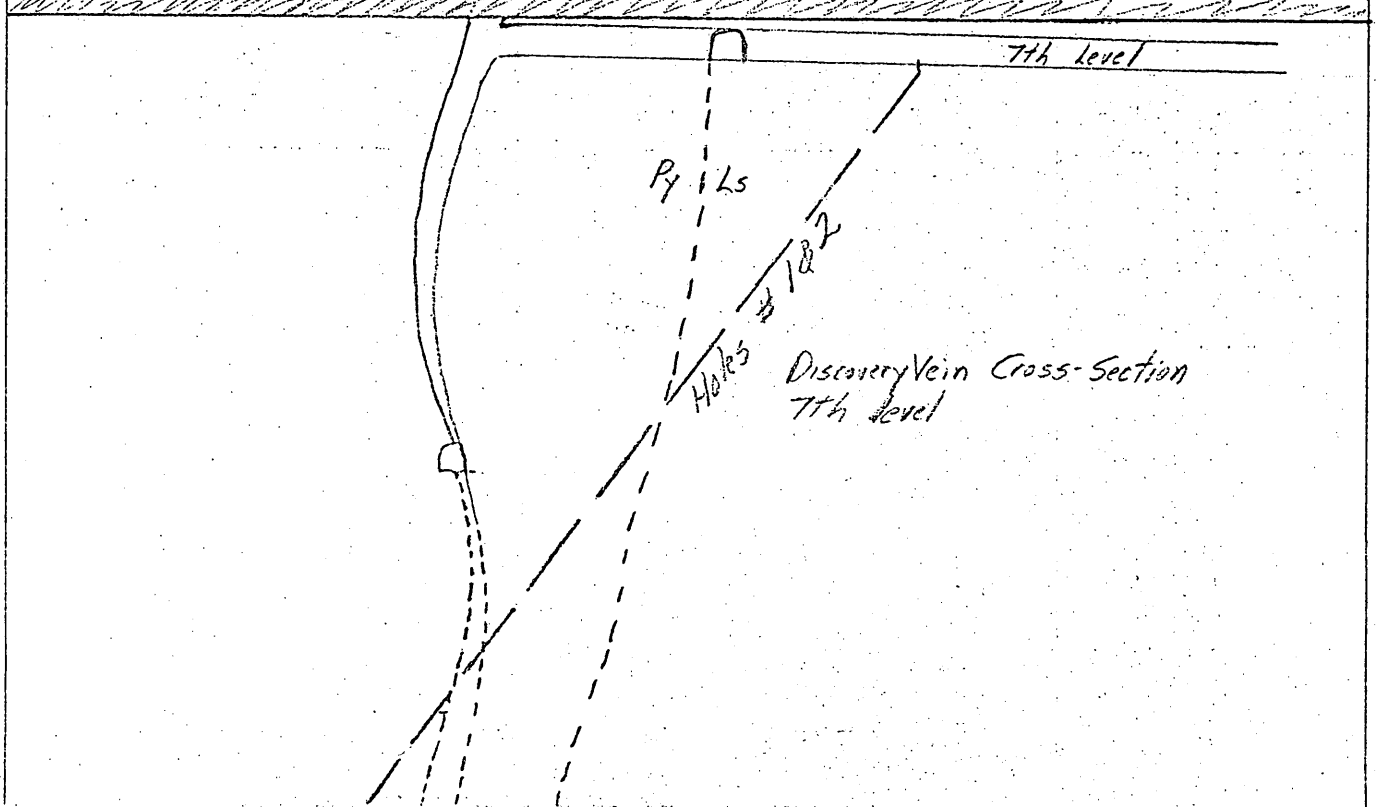
RECEIVED
FEB 12 1974
J. M. E.
SPOKANE, WASH.

*On supplement to December 1973 report.

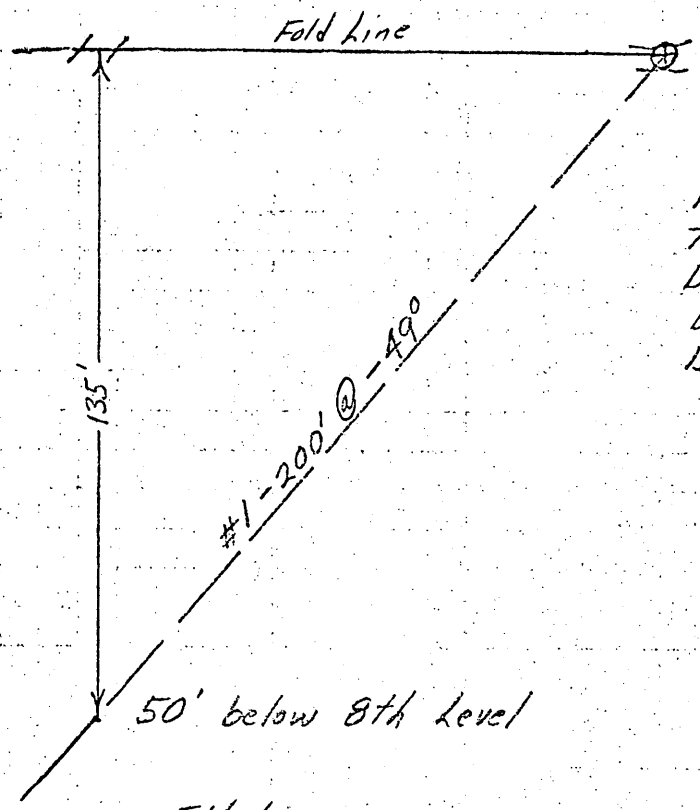
RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.



Plan
7th level
Discovery Vein targets

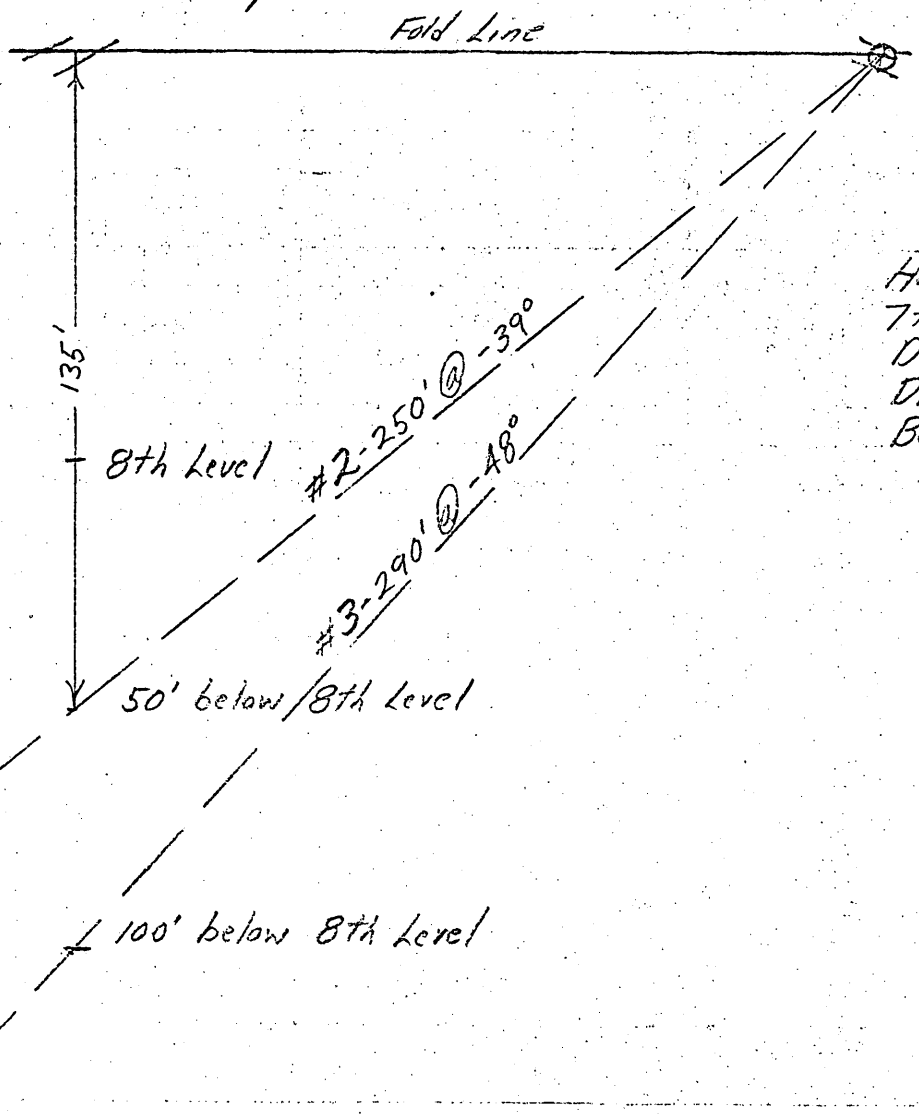


Discovery Vein Cross-Section
7th level



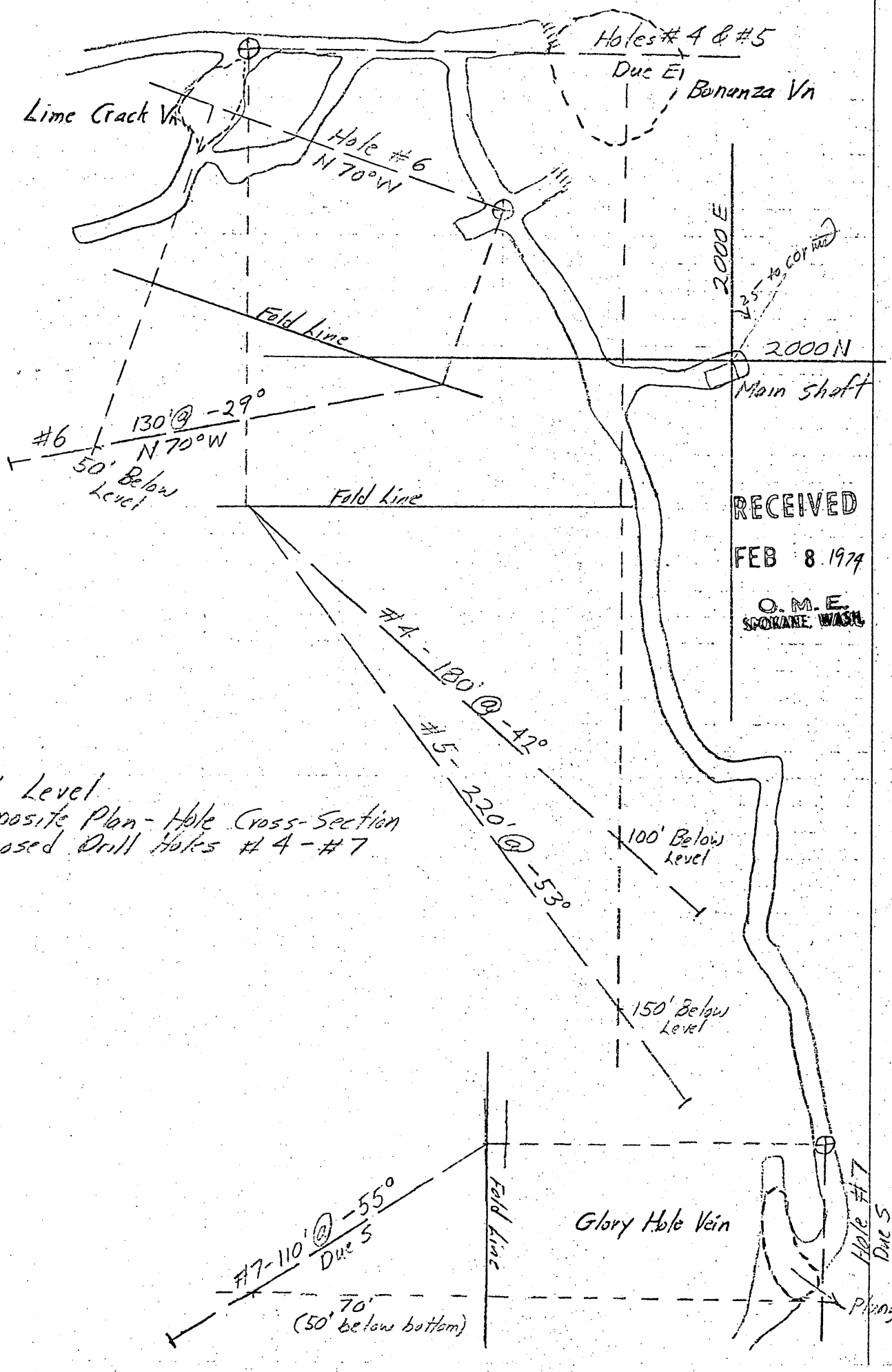
Hole Cross-Section
7th Level
Discovery Vein
Drill Hole # 1
Bearing S 50° W

RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.



Hole Cross-Section
7th Level
Discovery Vein
Drill Holes #2 & #3
Bearing S 33° 30' W

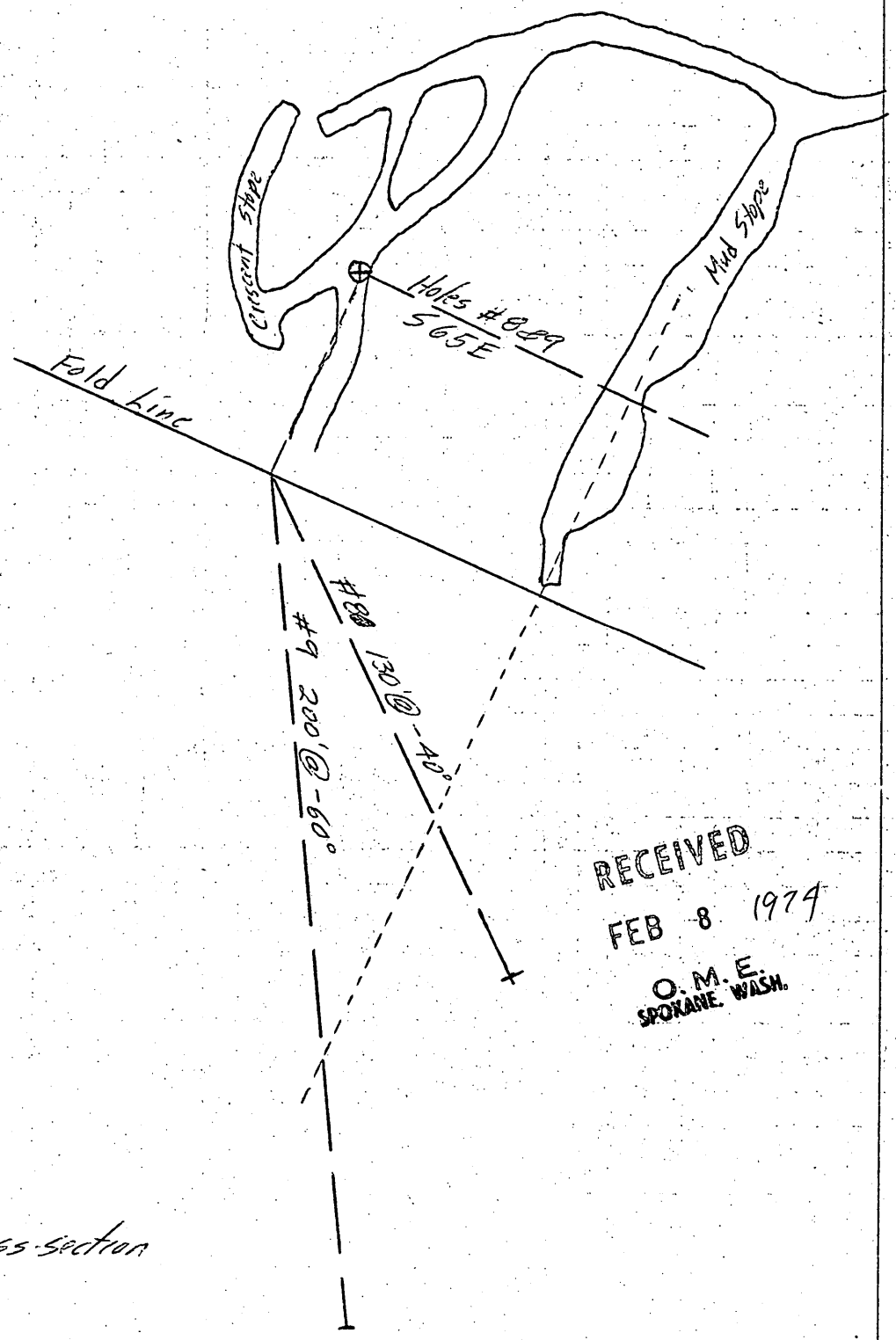
NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE



RECEIVED
FEB 8 1974
O. M. E.
SPOKANE, WASH.

7th Level
Composite Plan - Hole Cross-Section
Proposed Drill Holes #4 - #7

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE



RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.

6th Level
Mud Stope targets
Composite Plan & Cross-section

42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 29 1974
INITIALS CODE

March 15, 1974

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Interim Inspection
OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

I visited the Spotted Horse mine on Wednesday morning, March 13, 1974. Mr. Larry Hoffman and Jerry Hanley accompanied me underground. We examined parts of the 7th level, the OME work on the 6 and 4 level, and some diamond drill core that had been obtained from recent drilling on company account.

Total length of drift and crosscut done under the OME contract is 212 feet; this includes 34 feet on the 4 level and 178 feet on the 6 level. No ore-bearing rock had been exposed by any of this work. The drift on the 6 level was stopped at the request of Johns-Mansville who are supplying some of the funds for the work. According to Mr. Hoffman, Johns-Mansville wants future work to be directed at delineating ore reserves in the mine.

It seems evident that Viking Exploration, Inc. does not plan to complete the proposed drift and crosscut on the 4 level and there is no reason for continued drifting on the 6 level. Viking Exploration, Inc. has submitted a request to use the remaining funds in the contract for diamond drilling 10 holes from underground stations. I will discuss the request in a separate memorandum.

I recommend that we withhold from payment to Viking Exploration, Inc. the $200.00 that was suspended from the October 1973 voucher until action has been taken on the request for the diamond drilling.

Willard P. Puffett
Willard P. Puffett

HK 3/3/74

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Western Mineral Resources
656 U. S. Court House
Spokane, Wa., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
MAR 3 1974
INITIALS | CODE

February 26, 1974

Memorandum

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Mr. Jerry Hanley telephoned me yesterday from Lewistown, Montana, to say that both he and Larry Hoffman had suffered severe throat infections recently and, as a partial result, the 7 level was not pumped dry. He suggested that I delay my planned inspection trip until I had notice that the 7 level could be examined.

On February 25, I received the enclosed letter and map. The map was inked on linen and folded to fit into a regular business size envelope. I made some Ozalid copies and sketched, with red pencil, the outline of the OME 6 level drift.

Mr. Hoffman's letter is an explanation of some of the sampling that has been done at the mine, and a fairly up-to-date report on operations at the mine. He contends that only significantly mineralized areas need to be sampled according to the contract and that no significantly mineralized areas have been encountered in the drift.

I note that you have withheld payment on the November-December voucher until certain conditions have been met. The enclosed material should satisfy some of the conditions; however, I have not received any original copy of the November-December voucher signed by an authorized representative.

I hope to be able to make an examination of the Spotted Horse mine no later than next week. By that time the Operator should have received some bids from contractors and I can make recommendations regarding future contract work.

Willard P. Puffett

Enclosures

Willard P. Puffett

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

February 25, 1974

Mr. W. P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington 99201

OME - 6880 (Gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Puffett:

Per your letter of February 8 wherein you requested additional justification for the OME supported diamond drilling program, I am enclosing a letter from Mr. L. C. Hoffman dated February 20, 1974. We have great hopes for the location of new ore bodies resulting from the proposed diamond drilling program, and I trust that the OME will approve the use of the remaining OME funds for the diamond drilling program as recommended by Mr. Hoffman.

Yours very truly,

Charles A. Einarsen

Charles A. Einarsen

CAE:lk
Enc.
cc: Mr. Harold Kirkemo
Mr. J. M. Sharratt
Mr. L. C. Hoffman
Mr. Jerry Hanley

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457
Feb. 20, 1974

Mr. Charles Einarsen
Viking Exploration, Inc.
820 Denver Center Bldg.
Denver, CO

Dear Mr. Einarsen:

In regard to your request for information as to the results that might be expected from the proposed diamond drilling program, the following is the best information I can give at this time.

Due to the apparent tightening of the structures on the 7th and 8th levels, the holes I have proposed are designed to test the oreshoots below the present workings to see if the condition persists or if the veins open up again as they have on the upper levels. In most cases I have laid out two holes to intersect at different levels to further check the pinching and swelling. In addition, I expect the holes to prospect the possibility of supergene silver enrichment below the 7th and 8th levels, which condition is evidenced by a much higher Ag/Au ratio in samples taken on these levels, as well as the beginnings of Pb, Zn, & Cu mineralization.

In addition to the holes proposed for OME consideration we are planning a series of holes to explore the contact north of the shaft on the 1st and 2nd levels.

Due to the irregular orebodies I cannot say that the work would delineate x tons of ore worth y dollars, only tell us if the orebodies are viable at depth, or if there may be new orebodies in virgin ground higher up the contact. However, at the present metal prices, the intersection of any width of ore at all would certainly be a basis for further work in light of the old production record. On examining the mine I do not believe anyone can offer evidence that the veins do not go down at least several hundred feet below the present mine bottom, especially the Discovery shoot.

As a general statement based on the known conditions at the mine I would expect the holes to intersect mineable widths of high grade ore that could be developed at a profit. Mr. Frank Bryant, the last operator of the mine stated that the Discovery vein at the bottom of the winze was six inches wide and assayed 9 ounces Au/ton. This would be 1½ ounce rock over a three foot mining width. If we assume the length of the Discovery to be 100 feet then there would be over $3000 per foot of depth. If the vein swells, as it does on the upper levels, the value would increase accordingly. If one shoot persists to depth, it may be assumed others will to.

Sincerely,

L. C. Hoffman

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457

Feb. 20, 1974

RECEIVED
FEB 25
U.M.E.
SPOKANE, WASH.

Mr. Willard Puffett
Office of Minerals Exploration
656 U.S. Court House
Spokane, Wash. 99201

OME-6880 (Gold)
Spotted Horse Mine
Fergus County, MT
Contract 2309

Dear Mr. Puffett:

As requested in Mr. Kirkemos letter of February 12, I would like to submit the following information:

1. Level 7 map attached.

2. I have personally climbed up the stope about 100 feet above the 7th level, and could see about 80 feet farther up, which leaves little ground unexamined to the 4th level, therefore the conclusion that it is stoped at least that far, and maybe to three.

3. As specified in the contract, only significant mineralized trends need be assayed. To date no such trends have been encountered, the assays taken were simply spot samples of (a) either wall (b) the narrow breccia in the contact, or (c) a change in the character of the rock. In no case did we expect to find ore because there was seldom anyany visual sign, except in the case of (c) occasionally, and then there was never any volume, often just enough to assay. The samples were taken just to satisfy my ownown curiosity about minor geologic features. They were on the OME report map simply because they were on my work map. In the future I will not include them at all to avoid confusion. If the drifting is continued and significant trends are encountered I will of course take channel samples and supply all pertinent data. The list of assays was not intended to be part of my report, as you will note that there are results from other levels. On my original to Viking, the samples from the 6th level were labelled OME to distinguish them as having come from that drift only.

Drifting was suspended just prior to Christmas by extremely bad weather which continued until January 11. During this time I received orders from Viking to suspend drifting and make preparations to diamond drill. Experimental drilling was conducted until 1/25. Since that time work has proceeded on conversion of the hoist to Diesel power to speed up hoisting if drifting is resumed.

I have had difficulty in obtaining bids on the drilling, but hope to have them in the near future.

I am looking forward to your visit on the 26th.

Sincerely,

L. C. Hoffman

P.S.
I don't know if Mr. Einarsen specified it or not, but I have been retained as an advisor by Johns-Manville, not by Viking.

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457

Feb. 20, 1974

RECEIVED
FEB 25
U.M.E.
SPOKANE, WASH.

Mr. Willard Puffett
Office of Minerals Exploration
656 U.S. Court House
Spokane, Wash. 99201

OME-6880 (Gold)
Spotted Horse Mine
Fergus County, MT
Contract 2309

Dear Mr. Puffett:

As requested in Mr. Kirkemos letter of February 12, I would like to submit the following information:

1. Level 7 map attached.

2. I have personally climbed up the stope about 100 feet above the 7th level, and could see about 80 feet farther up, which leaves little ground unexamined to the 4th level, therefore the conclusion that it is stoped at least that far, and maybe to three.

3. As specified in the contract, only significant mineralized trends need be assayed. To date no such trends have been encountered, the assays taken were simply spot samples of (a) either wall (b) the narrow breccia in the contact, or (c) a change in the character of the rock. In no case did we expect to find ore because there was seldom anyany visual sign, except in the case of (c) occasionally, and then there was never any volume, often just enough to assay. The samples were taken just to satisfy my ownown curiosity about minor geologic features. They were on the OME report map simply because they were on my work map. In the future I will not include them at all to avoid confusion. If the drifting is continued and significant trends are encountered I will of course take channel samples and supply all pertinent data. The list of assays was not intended to be part of my report, as you will note that there are results from other levels. On my original to Viking, the samples from the 6th level were labelled OME to distinguish them as having come from that drift only.

Drifting was suspended just prior to Christmas by extremely bad weather which continued until January 11. During this time I received orders from Viking to suspend drifting and make preparations to diamond drill. Experimental drilling was conducted until 1/25. Since that time work has proceeded on conversion of the hoist to Diesel power to speed up hoisting if drifting is resumed.

I have had difficulty in obtaining bids on the drilling, but hope to have them in the near future.

I am looking forward to your visit on the 26th.

Sincerely,

L. C. Hoffman

P.S.
I don't know if Mr. Einarsen specified it or not, but I have been retained as an advisor by Johns-Manville, not by Viking.

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

February 15, 1974

Mr. Harold Kirkemo, Chief
Office of Minerals Exploration
U.S. Geological Survey
12201 Sunrise Valley Drive
Reston, Virginia 22092

Dear Mr. Kirkemo:

This will acknowledge receipt of your February 12, 1974 letter, a copy of which has been furnished to Mr. Larry Hoffman. We are pleased to inform you that Larry will still be working for Viking Exploration in a consulting capacity. It is estimated that he will spend 1/3-1/2 of his time associated with the Spotted Horse Mine.

Mr. Hoffman has been requested to furnish maps as requested in your letter and to answer the questions which you have raised. Regarding Paragraph 2, Page 2 of your letter, Mr. Hoffman will continue to prepare the OME monthly reports and will sign the vouchers as he has in the past. I am sure that future vouchers and narrative reports will be properly signed by Mr. Hoffman. Please accept our apology in this regard.

Mr. Jerry Hanley will be in charge of the mine and its day to day operations. However, Mr. Hoffman and Mr. Hanley will be working very closely together in connection with all of the operations at the Spotted Horse Mine.

Mr. Kirkemo, I appreciate very much receiving your comments regarding the vouchers, the narrative reports, the maps, etc., and I can assure you that we will make every effort to improve the nature of our monthly reports to your department. Should you have any further questions or requests please don't hesitate to drop me a line.

Sincerely,

Charles A. Einarsen

Charles A. Einarsen

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 21 1974

INITIALS	CODE
HK	~~HR~~

CAE:lk
cc: Willard P. Puffett
J. Michael Sharratt
Larry C. Hoffman
Jerry Hanley

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

February 14, 1974

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

HK

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

I want to visit the Spotted Horse mine on Tuesday, Feb. 26, 1974, to inspect the OME workings and the 7 level. I am hoping that your man in charge at the mine will have accurate maps of the new work and will be able to accompany me on the inspection.

At the time of my visit we can discuss the planned diamond drilling program for by that time there should be bids received from diamond drill contractors.

If this time for my planned visit is inconvenient for you or those at the mine, please let me know and I will try to arrange a visit at a time more appropriate.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: OME
DRF

Puffett/at

February 12, 1974

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OMX-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

We have reviewed the voucher and narrative report for November-December 1973, and the letter of February 4, 1974, to Mr. Willard Puffett from Mr. L. C. Hoffman notifying us of the termination of his employment with Viking Exploration, Inc.

The report that the target area on Level 6 probably has been mined out from Level 7 is a disappointing development. We would appreciate receiving an accurate map of the drift on Level 7 which can be compared with a composite map of the 6th and 4th levels. This is an essential map to support the conclusion that the drift on Level 7 indeed explored the same area.

What evidence is there for a stope from the 7th to the 4th level? The sketch map accompanying the November-December narrative report shows the extent of the south drift on the 6th level as of December 16, 1973, and a caption "(Drilled out)", which suggests the round drilled in the face of the drift had not encountered old workings. No stope outline is indicated, and the 7th level drift is not shown.

The reports and records accompanying the vouchers submitted to date have not been very informative. The lack of firm data is of concern to us. For example, the assay data accompanying the October and the November-December 1973 vouchers are unacceptable because of the lack of sample descriptions, measurements, and locations. Whether assays are obtained from commercial firms or are determined in your own assay office, the assay report should be signed and dated by the analyst who did the work. The disallowance of $200.00 from payment for the October voucher was based on this inadequate report concerning the samples and assays.

The closing paragraph in the narrative report for November-December 1973 illustrates the poor quality of the reporting to date. If samples are collected and analysed, it is standard engineering and geologic procedure to describe the material sampled, to indicate on a map the location of the samples, and to report the width of individual samples. We concur in the Field Officer's recommendation to continue withholding $200.00 from the October voucher for lack of satisfactory sample and assay data.

The OME contract requires the Operator to "provide such supervision, labor, and technical services as may be required to complete the work in a satisfactory manner." Please advise us who has been designated to succeed Mr. Hoffman as supervisor. What are his qualifications, and is he authorized to sign vouchers and other documents as a representative of Viking Exploration, Inc.?

None of the three copies of the November-December voucher show Mr. Hoffman's original signature. The three copies are xerox prints. One signed original copy of the voucher should accompany each monthly voucher and narrative report. Please furnish this at your earliest convenience.

We will not forward the November-December 1973 voucher for payment until we have received satisfactory proof as described above of the discovery and location of previous workings in the target area on Level 7, notification that a qualified project supervisor has been engaged for the project, and receipt of an original copy of the November-December voucher signed by an authorized representative.

Sincerely yours,

Harold Kirkemo, Chief
Office of Minerals Exploration

cc:
DRF
MR Rdg.
OME Rdg.
OME Files
Mr. Kirkemo
Region ~~XXX~~ I

HKirkemo/gpw

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
FEB 11 1974
INITIALS CODE

February 8, 1974

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

I am forwarding your monthly voucher for November-December 1973 to Washington, after having received copies of the levels 4 and 6 maps showing extent of OME work. Detail is sparse on the maps and I cannot determine from the narrative if work is continuing on the 4 level.

Once again we did not receive a map showing location of samples for which assay data are listed. Accordingly, I am not requesting a re-instatement of the $200 suspended from your October 1973 voucher. May I call your attention to the instructions on the suspension statement regarding reclaims for deductions.

I will retain the request for a change from drifting to diamond drilling at least until I have received the bids from two different diamond drill contractors. I'm concerned, in part, that Mr. Hoffman has severed his associations with Viking Exploration, Inc. at the Spotted Horse Mine, and wonder if his replacement will have the same exploration objectives in mind as Mr. Hoffman's. An expanded justification for the proposed drilling should be prepared showing what results you might expect to find from the completed work.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: DRF
OME
Puffett/at

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

February 5, 1974

Mr. L. C. Hoffman
Spotted Horse Mine
Route 3
Lewistown, Montana 59457

OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Larry:

Thank you for your letter telling me that you are no longer associated with Viking Exploration, Inc. I was talking with Mr. Einersen on the telephone this morning but he did not mention this new development.

I wish you success in whatever new venture you participate. As of now the future for OME does not appear bright but the current elevated metal prices should be a strong incentive for exploration.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: OME/w cy of inc ltr
DRF

Puffett/at

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457

RECEIVED
FEB 5 1974
O.M.E.
SPOKANE, WASH.

Feb. 4, 1974

Mr. Willard Puffett
Office of Minerals Exploration
656 U. S. court House
Spokane, Wash. 99201

Dear Willard:

This is to notify you that I am no longer associated with Viking Exploration, Inc. at the Spotted Horse mine. However, should you need any information that Mr. Einarsen cannot supply, I will remain at the same address and would be glad to help you in any way I can.

I very much enjoyed working with you and I hope the OME can weather the political tides and return to a strong program. Hopefully it will become apparent to Washington just how much the nation needs minerals exploration at this time.

Best personal regards,

L. C. Hoffman

OME-6880 (Gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

Febfuary 4, 1974

Mr. W. P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington, 99201

RECEIVED
FEB 8 1974
U.S. M.E.
SPOKANE, WASH.

OME - 6880 (Gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Puffett:

Pursuant to your telephone conversations with Mr. Einarsen, I would like to submit a proposed diamond drilling program for your consideration. If possible, we would like to convert the balance of our OME contract to drilling the downward extensions of the major ore shoots of the Spotted Horse Mine, as shown on the enclosed plans and cross sections.

Recently we have done about 500 feet of diamond drilling on an experimental basis in most of the formations in the mine. The results were much better than I thought they would be. We have gotten nearly 100% recovery and have had little problem with lost circulation. I now believe we can successfully drill the ore shoots, especially below the seventh level, since the limestones are much tighter at depth. Considering the problems we have had with drifting, I think that it would be advantageous to use diamond drilling and cover the major targets.

I have proposed two holes into most of the targets to try and expose the pinching and swelling of the ore shoots, as shown on the upper levels.

I have requested bids from two diamond drilling contractors and will forward their bids to you when I receive them.

Ltr. to Mr. W. P. Puffett
OME - 6880 (Gold)
Diamond Drilling Program
February 4, 1974

RECEIVED
FEB 8 1974
J. M. E.
SPOKANE, WASH.

Also enclosed is the composite plan of the 4th and 6th level drifts, as you requested, and I have shown a proposed diamond drill hole on the fourth level. There have been no significant assays from the last work on six or the work on four.

Removed and attached to
Nov Dec. 1973 voucher

Yours very truly,

VIKING EXPLORATION, INC.

L. C. Hoffman

L. C. Hoffman

LCH:lk
Enc.

Spotted Horse Mine
OME 6880 (Gold)
L. C. Hoffman
January 28, 1974

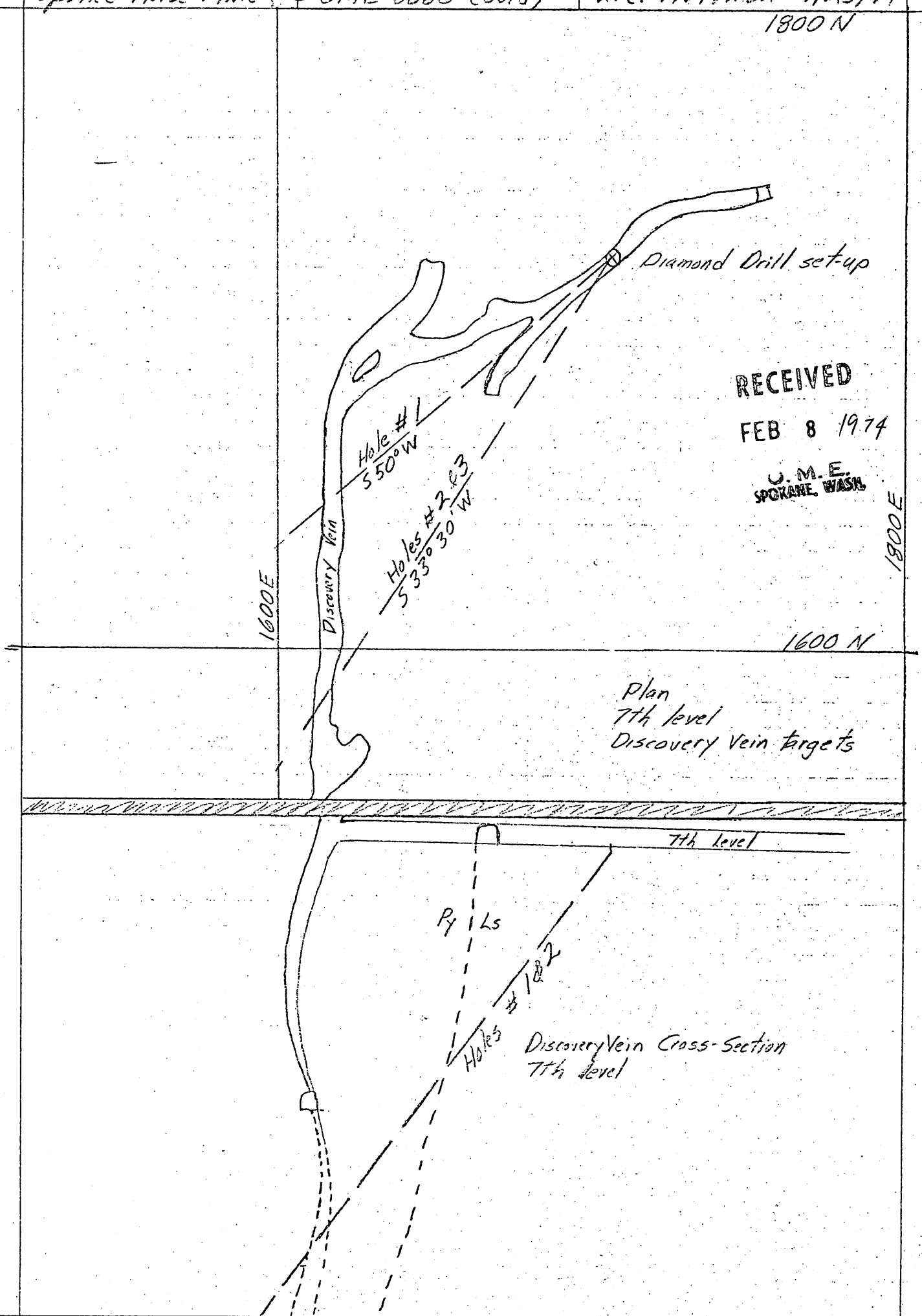
Hole #1 - Discovery from 7	49°S 50°W	200 ft.
Hole #2 - Discovery from 7	39°S 33°30'W	250 ft.
Hole #3 - Discovery from 7	48°S 33°30'W	290 ft.
Hole #4 - Bonanza from 7	42° Due E	180 ft.
Hole #5 - Bonanza from 7	53° Due E	220 ft.
Hole #6 - Lime Crack from 7	29°N 70°W	130 ft.
Hole #7 - Glory Hole from 7	55° Due S	110 ft.
Hole #8 - Mud Stope from 6	40°	130 ft.
Hole #9 - Mud Stope from 6	60°	200 ft.
Hole #10 - 4th Level from 4	0° N	100 ft.
	Total	1800 ft.

Bits, reamer, barrel	$1.20
Fuel, oil, maint.-comp. & drill	1.11
Labor - 2 drillers, hoist eng., geol. 200 ft./week	3.80
Hoist	.10
Drill rod, grease, etc.	.40
Assaying, 10% of core, 2' samples	.25
Core storage	.30
	$7.16 x 1830' = $12,888

Remaining OME contract	$12,600
Remaining OME share	9,450
OME share of proposed drilling	73.324%

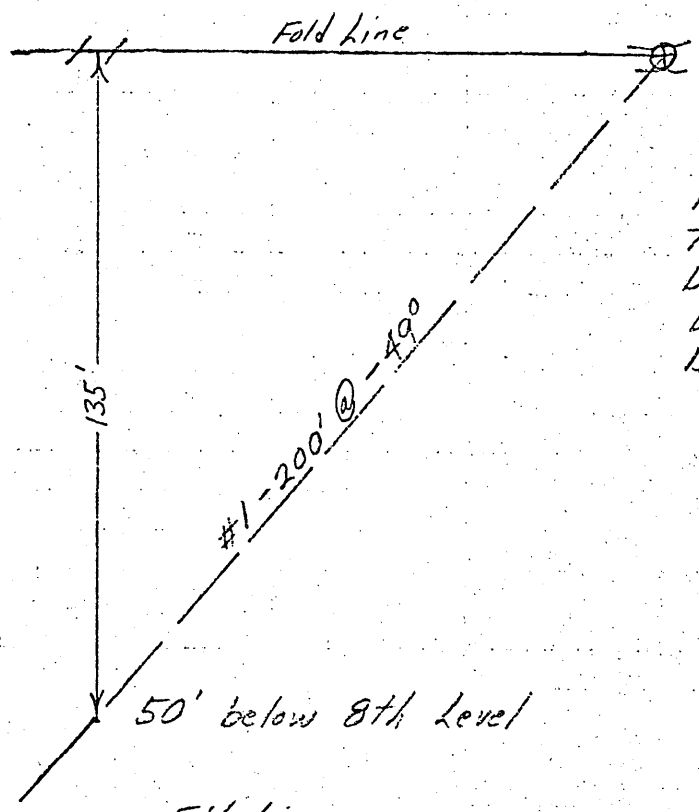
RECEIVED
FEB 12 1974
O. M. E.
SPOKANE, WASH.

*On supplement to December 1973 report.



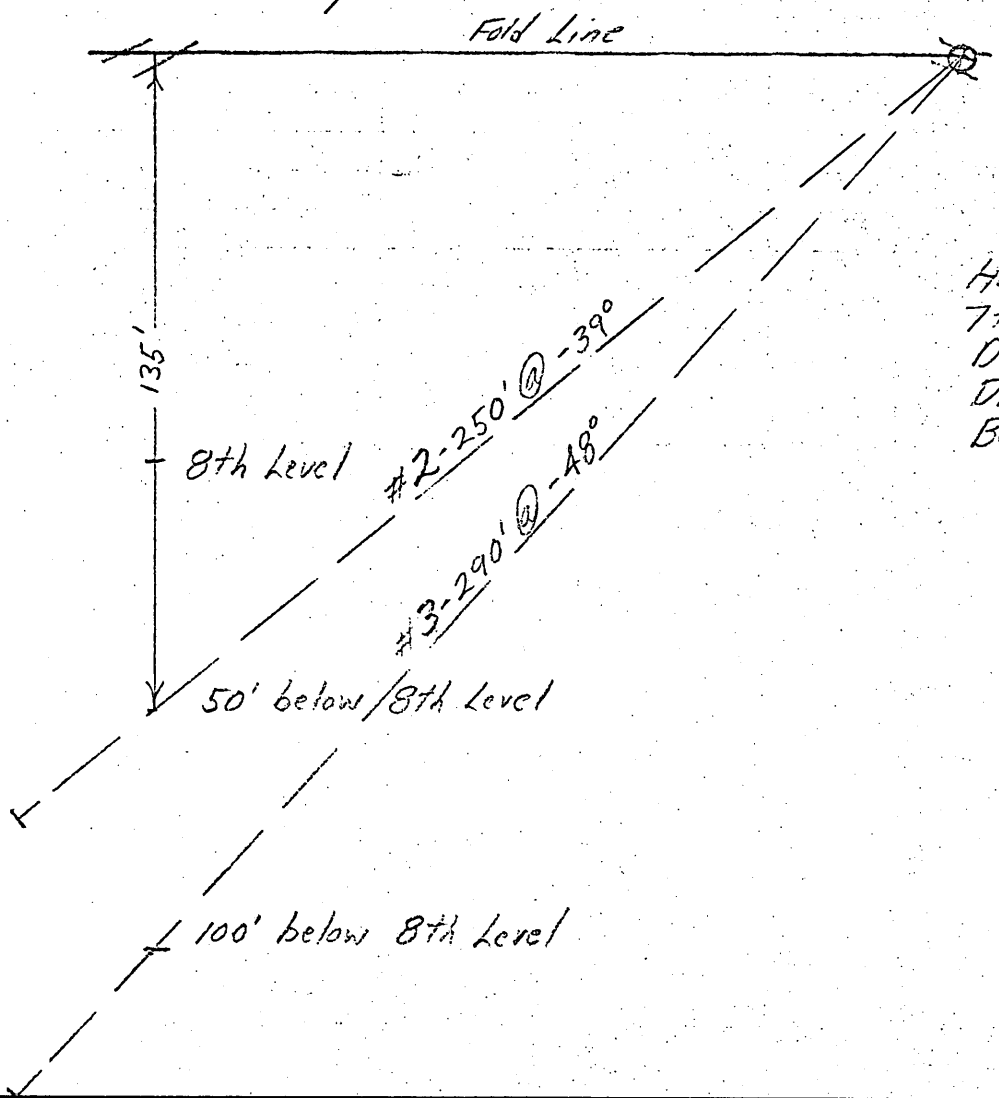
RECEIVED
FEB 8 1974
U.M.E.
SPOKANE, WASH.

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE



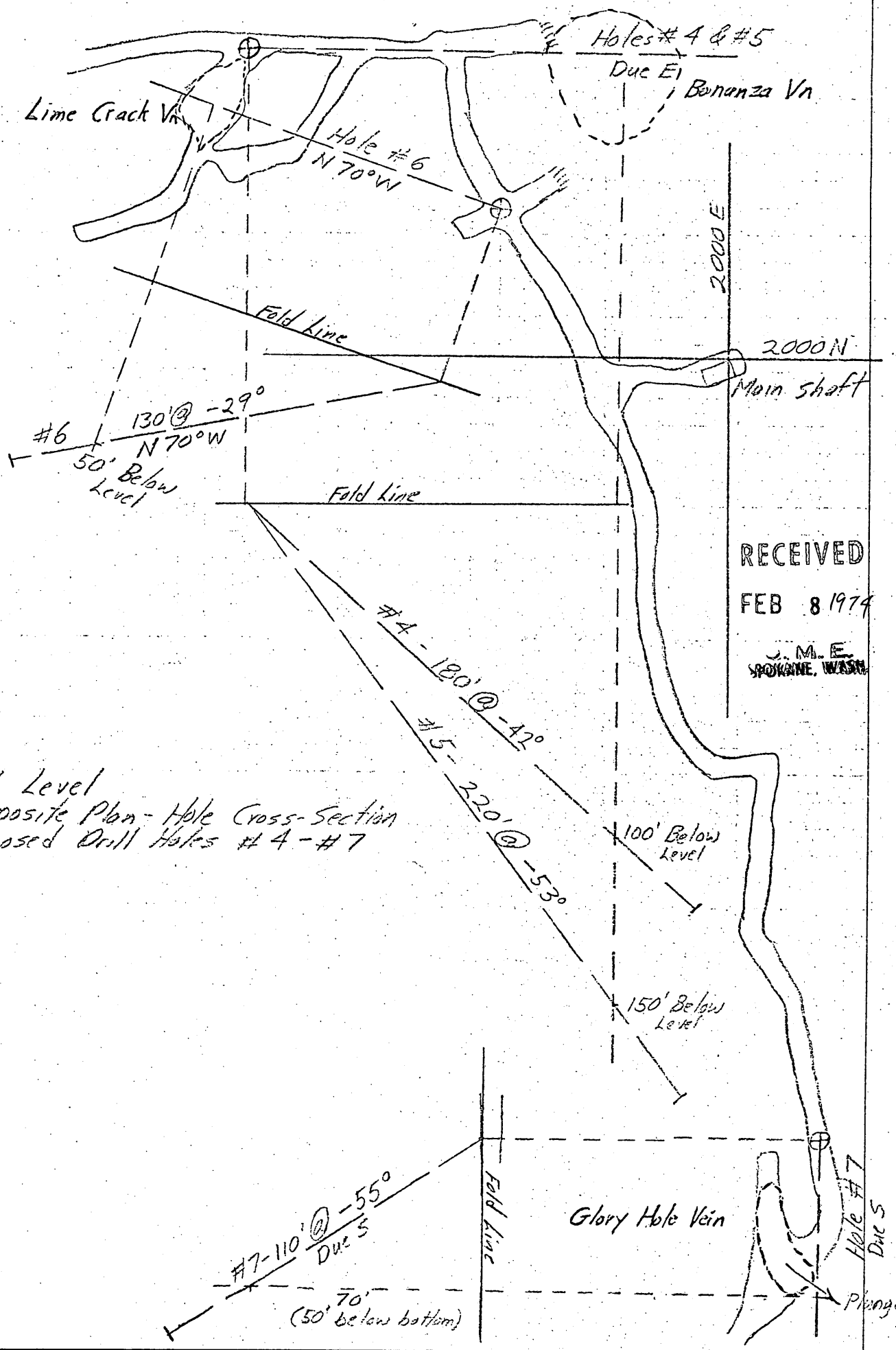
Hole Cross-Section
7th Level
Discovery Vein
Drill Hole #1
Bearing S 50° W

RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.



Hole Cross-Section
7th Level
Discovery Vein
Drill Holes #2 & #3
Bearing S 33° 30' W

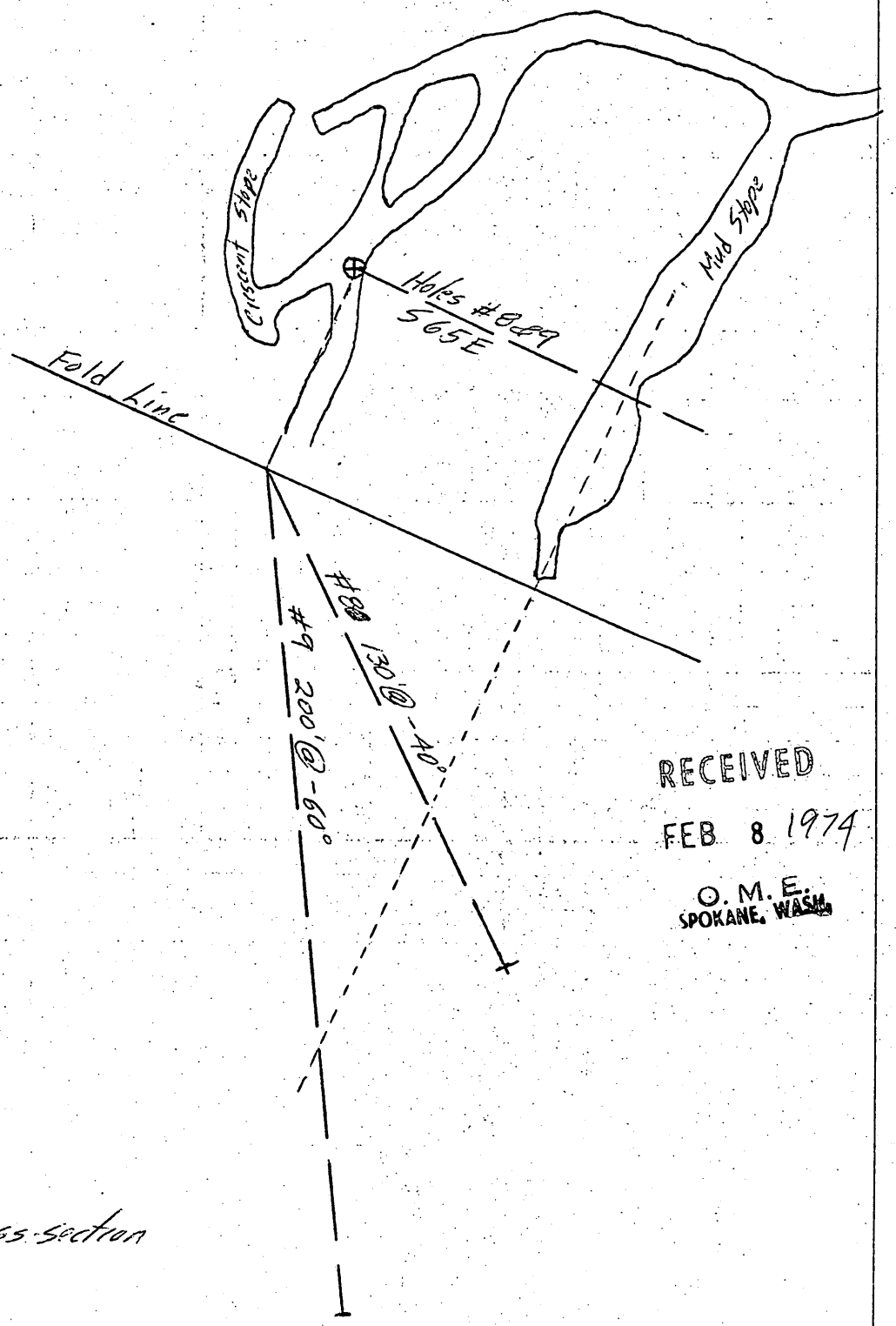
42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL



RECEIVED
FEB 8 1974
M. E.
SPOKANE, WASH.

7th Level
Composite Plan - Hole Cross-Section
Proposed Drill Holes #4 - #7

42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE
NATIONAL



RECEIVED
FEB 8 1974
O.M.E.
SPOKANE, WASH.

6th Level
Mud Stope targets
Composite Plan & Cross-section

NATIONAL 42-381 50 SHEETS 5 SQUARE 42-382 100 SHEETS 5 SQUARE 42-389 200 SHEETS 5 SQUARE

FORM 9-1648
MARCH 1968

OFFICIAL COPY

INITIALS CODE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

11/3/73 RECEIVED NOV 9 1973

O. M. E.
SPOKANE, WASH.

OPERATOR'S MONTHLY VOUCHER

For Month of October 1973

Docket No. OME- 6880 (Gold)
Contract 14-08-0001 2309
Contract Amount $ 28,500.00
Gov't. Participation % 75 $ 21,375.00

Operator's Name Viking Exploration, Inc.
Address 1776 Lincoln St Denver Colo 80203

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH		TO DATE		THIS MONTH		TO DATE	
	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS
5'X7 Drifting	44	$3300	141	$10,575	44 ft.	$3300	141 ft.	$10,575
TOTALS	44	$3300	141	$10,575		$3300.00		$10,575.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 11/1/73 *Payee Viking Exploration, Inc.

Per L C Hoffman Title Mining Projects Engineer

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Coinpany, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature Willard P Puffett OME Field Officer Date 11/9/73

2,475.00 (63) 14X0804
200.00 14X 6875 (08)

Approved for: $ 2,275.00 NET TO PAYEE
(SUBJECT TO AUDIT)

Signature BM7

Date 29 NOV 1973 Vou. No. 04670A

(SEE OTHER SIDE)

RECEIVED
NOV 9 1973
O. M. E.
SPOKANE, WASH.

Narrative Report
OME-6880 (Gold)
Spotted Horse Mine
Lewistown, Montana 59457
Contract 2309

November 1, 1973

October:

The drift continues S 80° E along the contact, more or less straight. For about 43 ft. from the switch the porphyry was very iron stained and altered. For the last 5 ft. or so, the porphyry has been fresher, but shows signs in the face of becoming altered again. The limestone continues to be broken, silicified, iron stained, with occasional kaolinite. Two interesting assays were taken from the limestone wall and face (6069 and 65 respectively) as shown on the map. The amount of ore involved is apparently not significant, but further sampling is being done.

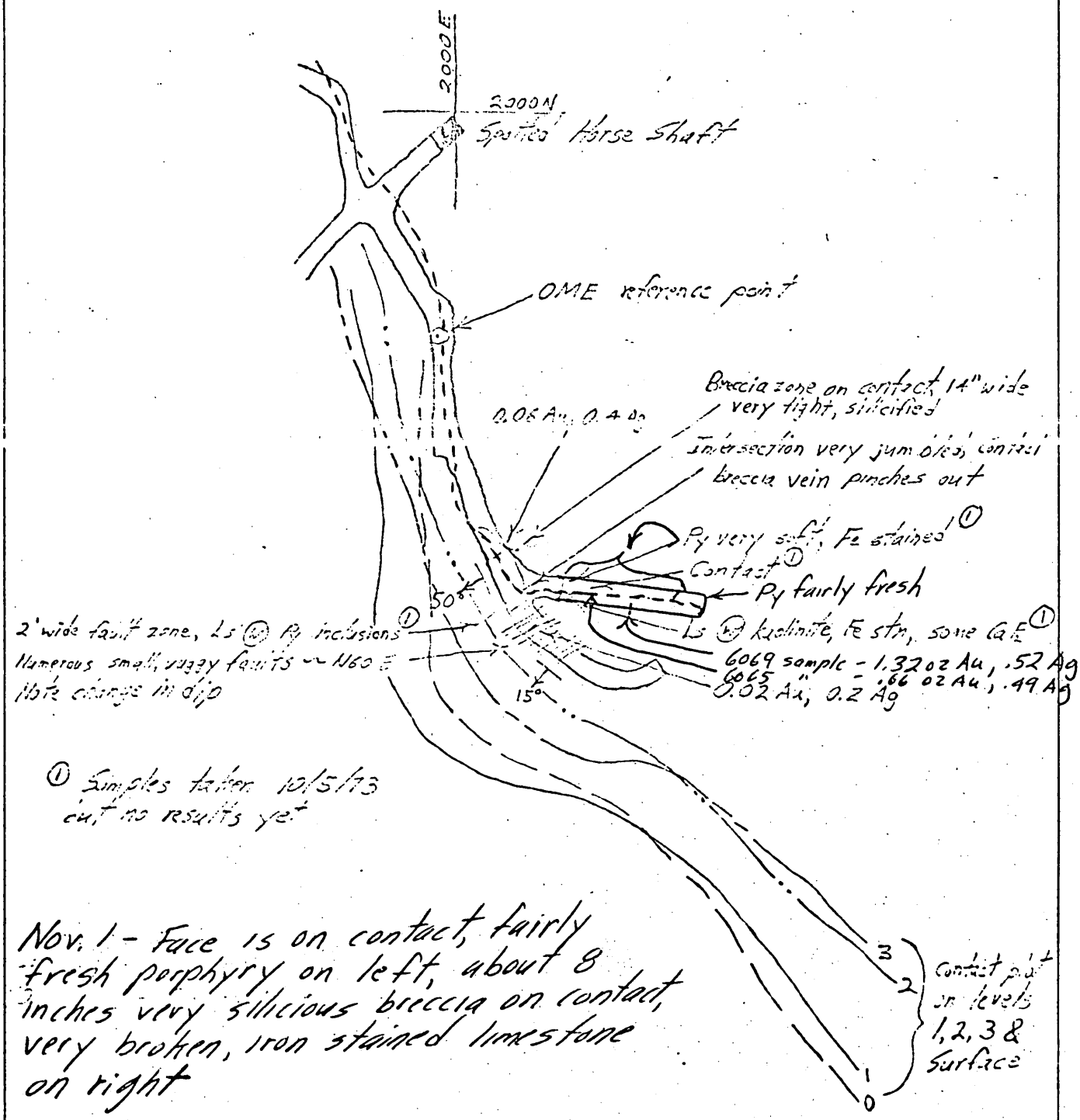
44 feet of drifting was done during October, making a total of 141 ft. since commencement. Delays continue to be due to vugs in the limestone, as well as making the turn and switch installation.

L. C. Hoffman

Spotted Horse Mine | 6th Level OME drift | ~~Oct 5, 1973~~

Nov 1, 1973

RECEIVED
NOV 9 1973
O. M. E.
SPOKANE, WASH.



Nov. 1 - Face is on contact, fairly fresh porphyry on left, about 8 inches very silicious breccia on contact, very broken, iron stained limestone on right

SPOTTED HORSE MINE
ASSAYS FOR OCTOBER 1973

OME	Au	Ag
6043	.03	.03
6044	.01	.14
6045	.01	.21
6046	.01	.01
6047	.02	.29
6048	.04	.31
6049	.046	.27
6050	.02	.01
6051	.12	.48
6052	.08	1.2
6053	--	.19
6054	.04	.35
6055	.08	.23
6057	.05	.22
6058	.004	4.09
6059	.004	.136
6060	--	.14
6061	--	.27
6062	--	.07
6063	--	.21
6064	.23	.35
6065	.66	.49
6066	.08	.15
6067	.10	.11
6068	.07	.13
6069	1.32	.52
6070	.01	.01
6071	.20	.19
6072	.09	1.94
7045	.89	3.91
7046	21.35	15.23

OME	Au	Ag
5092	.44	1.78
5093	.02	.21
5094	.48	.65
5095	.47	1.24
5096	2.12	3.55
5097	.07	.80
5098	3.25	1.83
5099	--	1.67
5100	--	.80
5101	5.00	1.06
5102	1.24	4.17
5103	.24	.91
5104	.32	4.12
5105	.62	2.72
5106	.63	1.29

RECEIVED
NOV 9 1973
M. E.
SPOKANE, WASH.

Mine copy

TABLE 1 - ANALYSES OF AIR SAMPLES COLLECTED 8-2-83

MINE/MILL Spotted Horse COMPANY Larry Hoffman STATE Montana

COLLECTED BY Bill Cox (Montana State) SUBDISTRICT OFFICE Denver DATE REC'D. 8-10-73

RECEIVED

BOTTLE NUMBER	LAB NUMBER	LOCATION IN MINE	DATE AND TIME	CARBON DIOXIDE*	OXYGEN*	METHANE	CARBON MONOXIDE*	
N-[illegible]7	G3-0294	30' from shaft toward adit 100 level (exhaust)	8-2-73 11:55AM	.04	20.93	.00	.000	RECEIVED NOV 9 1973 O.M.E. SPOKANE, WASH.
N-9672	G3-0295	Station 600 level	8-2-73 3:25PM	.05	20.93	.00	.000	
N-9899	G3-0296	Bonanza Pipe Stope	8-2-73 2:55PM	.04	20.93	.00	.000	
N-9959	G3-0297	600 level heading O.M.E drift	8-2-73 3:15PM	.06	20.93	.00	.000	

DATE 8-16-73 SIGNED John H. Thatcher
DENVER TECHNICAL SUPPORT CT.

*Air for ventilation is considered to be of satisfactory quality when it contains at least 20.0 perce oxygen, not more than 0.5 percent carbon dioxide, and no harmful quantities of noxious gases. The threshold limit value for carbon monoxide is 0.005 percent or 50 parts per million and for nitrogen dioxide is 5 parts per million. The percentage of nitrogen can be determined by subtracting the sum of the reported values from 100.00.

UNITED STATES
DEPARTMENT OF THE INTERIOR
Geological Survey
Branch of Budget and Finance
Washington, D. C. 20242

04670A

ADMINISTRATIVE SUSPENSION STATEMENT

Name and Address of Payee: Viking Exploration, Inc.
1776 Lincoln Street
Denver, Colorado 80203

Amount Claimed:	Differences (Explained Below)	Amount Approved
$ 3,300.00	$200.00 Govt Participation	$ 3,300.00 2,475.00 (Govt Part 75% 200.00 Withheld 2,275.00
Bu. Voucher No.	**Payee's Invoice No.**	**Period**
	Docket #6330 Contract #2309	October 1973

EXPLANATION

$ 200.00 withheld pending receipt of sample data and assay certificates.

Any reclaim for items deducted must be included as a separate item on subsequent monthly voucher and supported by the original of this statement.

bmf

Branch of Budget and Finance

The Travelers Indemnity Company

Hartford, Connecticut

(A STOCK COMPANY)

GENERAL FORM STATUS INQUIRY

U.S. Dept. of Interior
Geological Survey
Office of Mineral Exploration
~~Washington, D.C. 20242~~
Reston, Virginia 22092

December 27 1973

Our Bond No. 1902996

Reinsured's No.

ractor: Viking Exploration, Inc.

ress: Denver, Colorado

ription of Contract: Exploration on 4th & 6th levels, Spotted Horse Gold Mine, Fergus County
(Include Location and Owner's Contract Number)
Montana Contract Number 2309

en U.S.A.

ract Price $ 21,375. Bond(s) $ 21,375. Effective Date 12-19-72

out prejudicing your right or affecting our liability under our bond(s) described above, we would appreciate such of the following information as is now available.

Very truly yours,

G. Roger Schaeler

Second Vice President

IF CONTRACT COMPLETED, PLEASE STATE:

Approximate date of completion of work (or final delivery) June 19, 1974

Approximate acceptance date N.A.

Final Contract Price $ 21,375 (Government's share of estimated total contract cost of $28,500).

IF CONTRACT UNCOMPLETED, PLEASE STATE:

Approximate percentage or dollar amount of contract completed or delivered N.A.

Do you know of any unpaid bills for labor or material (Check) Yes ____ No X

Remarks: (If any) None

January 17, 1974 19____

Signature [illegible]

Title Chief, Office of Minerals Exploration
U.S. Geological Survey, Interior Dept.

PLEASE RETURN ORIGINAL OF THIS INQUIRY TO THE TRAVELERS INDEMNITY COMPANY

Office at 101 University Blvd.
Denver, Colorado 80206

GENERAL FORM STATUS INQUIRY

mped addressed envelope to be attached.
eral cases to be submitted in duplicate.

3 REV. 1-61 PRINTED IN U.S.A.

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
NOV 20 1973
INITIALS CODE
HR

November 13, 1973

Mr. L. C. Hoffman, Mining Projects
Engineer
Viking Exploration, Inc.
Spotted Horse Mine
Rt. 3
Lewistown, Montana 59457

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Hoffman:

Your latest monthly voucher with supporting material indicates that the 600-level drift is once again following the limestone-porphyry contact. Obviously there has been a flattening of this contact from higher mine levels and this should be encouraging as known ore shoots have been confined to areas where the contact has flattened. The assay data you include also indicate the presence of gold and silver.

I'm concerned about your method of reporting assay data. They are essentially meaningless without length of sample being reported. General provisions in the contract require that "Channel samples shall be cut normal to the trends of the deposits at intervals of not more than 5 feet" and that "True copies of assay certificates . . ., the location, width, and assay value of all samples taken. . . shall be furnished monthly to the Government." Although you have reported assay data, we did not receive the copies of the assay certificates as well as the information concerning length of channel samples.

As a consequence, we are suspending $200 from the payment of the Government's share of the work done in October. Upon receipt of the assay certificates and information regarding location and length of the samples, we will approve payment of the suspended amount.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: Viking Exploration, Inc.
820 Denver Center Bldg.
1776 Lincoln St.
Denver, Colorado 80203

cc: OME
DRF
Puffett/at

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

ARLES A. EINARSEN,
ESIDENT

November 6, 1973

RECEIVED
NOV 8 1973
O. M. E.
SPOKANE, WASH.

Mr. W. P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington 99201

OME - 6880 (Gold)
Fergus County, Montana
Contract 2309

Dear Mr. Puffett:

Enclosed for your records and further handling are the original and three copies of each of the following documents:

1. Operator's Monthly Voucher for month of October 1973.
2. L. C. Hoffman, Mining Projects Engineer, narrative report for October.
3. Contact plat on levels 1, 2, 3, 6 and surface.
4. Analyses of air samples collected 8/2/73.
5. Assays for October 1973.

If your office requires additional information please advise.

Yours very truly,

VIKING EXPLORATION, INC.

OFFICIAL
COPY
O. M. E.
RECEIVED
NOV 12 1973

INITIALS	CODE
HK	~~HR~~

Charles A. Einarsen
President

CAE:lk
Enc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

RECEIVED
OCT 23 1973
O. M. E.
SPOKANE, WASH.

HK 10/29/73

OFFICIAL COPY
O. M. E.
RECEIVED
NOV 8 1973
INITIALS

OPERATOR'S MONTHLY VOUCHER

For Month of Sept

Operator's Name Vitaro Exploration, Inc
Address 1775 Lincoln St Denver, Colo

Docket No. OME- 6880 (gold)
Contract 14-08-0001 2309
Contract Amount $ 28,500.00
Gov't. Participation % 75 $ 21,375.00

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH		TO DATE		THIS MONTH		TO DATE	
	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS
		$		$		$		$
26 Ft 5x7 Drift	26	1950	97	7275	26 Ft.	1950	97 Ft	7275
TOTALS		$ 1950		$ 7275		$ 1950.00		$ 7275.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 10/5/73 *Payee Vitaro Exploration, Inc.

Per L. C. Hoffman Title L C Hoffman

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature Willard P Ruffner OME Field Officer Date 10/23/73

(63) 14X0804

Approved for: $ 1,462.50
(SUBJECT TO AUDIT)

Signature JBM7

Date 13 NOV 1973 Vou. No. 04601A

(SEE OTHER SIDE)

299404

RECEIVED
U.S. GEOLOGICAL SURVEY

OCT 31 2 12 PM '73

BUDGET & FINANCE

RECEIVED
OCT 23 1973
M. E.
SPOKANE, WASH.

Narrative Report
OME-6880
Spotted Horse Mine
Lewistown, Montana 59457

October 5, 1973

September:

Since last report, the drift was advanced 26 ft, all in limestone. All of this advance was turning to the left to try and intersect the contact, which went into the left wall at 46 ft. from the face. However, the contact made a very sharp turn, unlike the upper levels. The crew was pulled back to the contact and has begun drifting on the contact. With 8 ft. of advance in this direction, the face shows 3½ ft. of limonitic porphyry on the left, lying against very brecciated, Fe stained limestone on the right.

Progress is again slow because of the broken nature of the face making it difficult to drill, hard to load because the holes cave, and the vugs join drill holes allowing them to cross-fire, ruining the timing of the round. Turning and switch installation cause further delays.

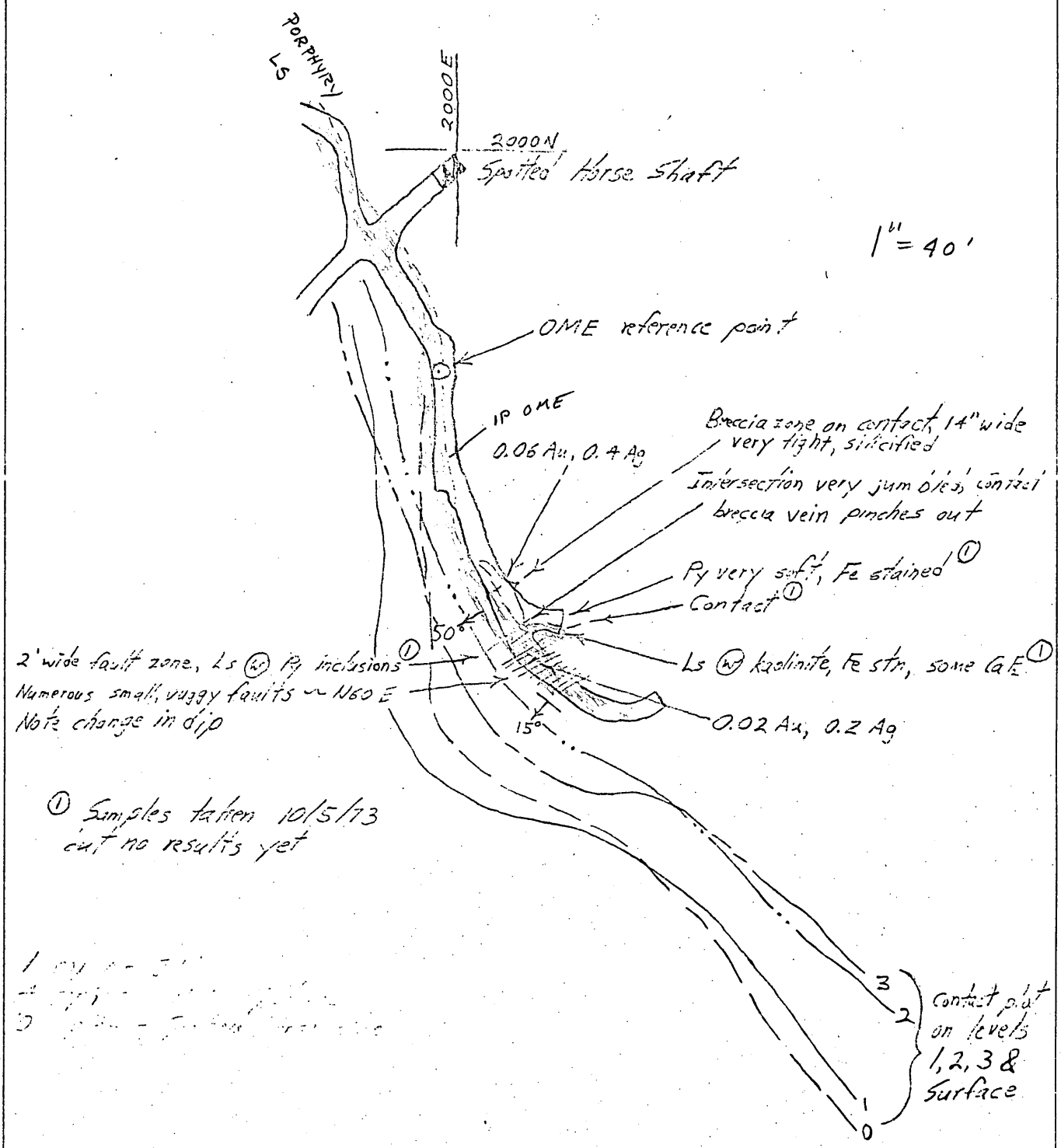
The accompanying sketch shows the drifts in relation to the contact on 6th, as well as the contact on the surface, 1st, 2nd, 3rd, and surface levels.

No assay results are available at this time.

L. C. Hoffman

Spotted Horse Mine	5th Level OME drift	Oct 5, 1973

RECEIVED
OCT 23 1973
U. M. E.
SPOKANE, WASH.



✓ HK 11/12/73

Nevada Assay Office

675 LESTER AVE.

Reno, Nevada 89502

FRANK W. JONES
Assayer-Chemist

October 27, 1973

Phone
329-4080

ASSAY CERTIFICATE FOR: Mardon Mining Co., Austin, Nev. OMB-6884

O.	SAMPLE	GOLD OZ./TON	SILVER OZ./TON	%	%	%	%	%
	9577	0.01	0.1					
	9578	0.01	0.1					
	9579	0.01	0.1					

Nevada Assay Office

675 LESTER AVE.

Reno, Nevada 89502

FRANK W. JONES
Assayer-Chemist

October 27, 1973

Phone
329-4080

ASSAY CERTIFICATE FOR: Mardon Mining Co., Austin, Nev. OME-6884

O.	SAMPLE	GOLD OZ./TON	SILVER OZ./TON	%	%	%	%	%
	9577	0.01	0.1					
	9578	0.01	0.1					
	9579	0.01	0.1					

Nevada Assay Office

675 LESTER AVE.

Reno, Nevada 89502

FRANK W. JONES
Assayer-Chemist

October 27, 1973

Phone
329-4080

ASSAY CERTIFICATE FOR: Mardon Mining Co., Austin, Nev. OME-6884

O.	SAMPLE	GOLD OZ./TON	SILVER OZ./TON	%	%	%	%	%
	9577	0.01	0.1					
	9578	0.01	0.1					
	9579	0.01	0.1					

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

October 5, 1973

OFFICIAL COPY
O. M. E.
RECEIVED
OCT 10 1973
INITIALS | CODE
Cac | 120
HK | 120

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Interim inspection
OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

I visited the Spotted Horse mine on Wednesday, Oct. 3, 1973 and examined the new workings on the 6 level that are being advanced under the terms of the OME contract. Since the beginning of the contract the drift has been advanced 97 feet. After about 30 feet of advance the drift veered away from the limestone-porphyry contact. The Operator has drilled holes in the drift walls to search for the porphyry and now intends to slab the drift walls to get the heading back onto the contact.

Mr. Charles Einarsen, president of Viking Exploration, Inc. was visiting the mine and accompanied me on my inspection, along with Mr. Larry Hoffman. Before I left the property the safety inspectors from the U. S. Bureau of Mines and the Montana State Department of Mines had arrived to make their periodic inspection of the mine.

Employed at the property are three men working in the drift, a hoistman, and three men working on the surface. Including Mr. Hoffman, the total payroll includes 8 men. Mr. Einarsen told me that he had hired a Canadian miner for a few days to instruct the Spotted Horse men in the correct way to drill, blast, and muck out their heading on the 6 level. Mr. Einarsen seemed to have been satisfied with the results.

There is no positive evidence of gold ore at the face of the OME drift but some indications of ore and wall-rock alteration were adjacent to the last exposure of the porphyry in the drift wall. Three random samples taken by Mr. Hoffman did not yield significant assays for gold and silver.

Willard P. Puffett

Willard P. Puffett

MARCH 1968

OFFICIAL COPY O. M. E. SPOKANE, WASH.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

RECEIVED
SEP 21 1973
O. M. E.
SPOKANE, WASH.

HK 9/25/73

OPERATOR'S MONTHLY VOUCHER

For Month of August

Docket No. OME- 6880 (gold)
Contract 14-08-0001 2309
Contract Amount $ 28,500.00
Gov't. Participation % 75 $ 21,375.00

Operator's Name Viking Exploration, Inc.
Address 1776 Lincoln St., Denver Colo 80203

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH		TO DATE		THIS MONTH		TO DATE	
	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS	UNITS	COSTS
65 ft. 5x7 drifting	65	$ 4875	71	$ 5325	65	$4875.00	71	$5325.00
TOTALS		$ 4875		$ 5325		$4875.00		$5325.00

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 9/13/73 *Payee Viking Exploration, Inc.

Per L.C. Hoffman Title Mining Projects Engineer

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature Willard P. Puffett 9/21/73
OME Field Officer Date

(63) 14X0804

Approved for: $ 3,656.25
(SUBJECT TO AUDIT)

Signature BM7

Date OCT 5 1973 Vou. No. 04498A
(SEE OTHER SIDE)

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457
September 13, 1973

RECEIVED
SEP 21 1973
O. M. E.
SPOKANE, WASH.

Re: OME - 6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Mt.

Narrative report current to 9/12/73

Work was resumed on the 6th level heading on July 30 after installing a new headframe and waste disposal system. Further delays were caused by correcting safety infractions cited by the Montana mine inspector on August 2, poor performance by the miners in the heading, and very broken ground. Except for the bad ground, all other problems have been cleared up and the miners are breaking four to six feet a day. 71 feet of advance has been made since the heading was commenced.

At the present time the face is totally in a very fractured and vuggy limestone that shows a great deal of kaolinite and limonite staining in the breaks. An occasional stringer of fluorite may be found. The drift is being turned to the left to intersect the porphyry contact again. Assays show only small gold - silver values, less than .08 Au and .20 silver.

As soon as the contact is again reached more consistent ground is expected, solving the problem of vugs causing simultaneous detonation of the round, and greater footage may be expected.

L. C. Hoffman
Mining Projects Engineer

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

October 4, 1973

Mr. L. C. Hoffman
Mining Projects Engineer
Spotted Horse Mine
Route 3
Lewistown, Montana 59457

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Hoffman:

The enclosed voucher for August 1973 is returned to you for your personal signature. Please sign and return to this office as a signed copy must be on file for each voucher. Payment will not be delayed as we are now processing the voucher on hand.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

Enclosure

cc: Director's reading file
Mineral Resources
OME reading file
Mr. Kirkemo

HKirkemo/cac 10/4/73

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 27 1973
INITIALS CODE
HK HK

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

September 21, 1973

Mr. L. C. Hoffman, Mining Projects Engineer
Viking Exploration, Inc.
Spotted Horse Mine
Rt. 3
Lewistown, Montana 59457

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Hoffman:

I have transmitted your latest voucher and narrative report to our Washington, D. C. office for payment. There are, however, two deficiencies in the report to which I direct your attention in the hope that they will be remedied in your next report.

Your narrative stated that some areas of fluorite were crossed by the drift and assays indicated only low silver and gold values. A sketch map showing the location of the new work and the areas sampled would be most helpful and, in fact, are required according to the instructions on the back of Form 9-1648, the monthly voucher form.

I surmise, from your narrative report, that many of your initial operating problems are being solved and I hope your progress under terms of the contract will accelerate. As of now, I plan to visit the Spotted Horse mine on Wednesday, October 3, 1973, at which time we can discuss the required monthly reporting.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: Viking Exploration, Inc.
820 Denver Center Bldg.
1776 Lincoln Street
Denver, Colorado 80203

OME: DRF
Puffett/at

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

ORIGINAL COPY
O. M. E.
RECEIVED
SEP 26 1973

INITIALS	CODE
Cac	20
HK	120

TO : Chief, Office of Minerals Exploration

DATE: September 21, 1973

FROM : Field Officer, Region I

SUBJECT: Monthly Voucher for August, 1973
OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergust County, Montana
Contract 2309

Transmitted herewith are three copies of the Operator's monthly report and voucher of the cited contract. Note that there is no map of the new work enclosed. I plan to visit the property within the near future and will discuss the need for submitting maps of OME work with Mr. Hoffman, Mining Project Engineer.

Wellard P Pufflett

FORM
MARCH

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

OFFICIAL COPY
O. M. E.
RECEIVED
AUG 17 1973
INITIALS

RECEIVED
JUL 30 1973
O.M.E.
SPOKANE, WASH.

HK
8/2/73

OPERATOR'S MONTHLY VOUCHER

For Month of June, 1973

Docket No. OME- 6880 (Gold)
Contract 14-08-0001 2309
Contract Amount $ 28,500.00
Gov't. Participation % 75 $ 21,375.00

Operator's Name VIKING EXPLORATION, INC.
Address 820 Denver Center Bldg., 1776 Lincoln Street, Denver, Colorado 80203

FOR OPERATOR'S USE					FOR GOVERNMENT USE ONLY			
COST ITEMS (FROM EXHIBIT A)	THIS MONTH UNITS	THIS MONTH COSTS	TO DATE UNITS	TO DATE COSTS	THIS MONTH UNITS	THIS MONTH COSTS	TO DATE UNITS	TO DATE COSTS
		$		$		$		$
Drifting level 6	6 ft.	~~#####~~ 450.00	6 ft.	~~#####~~ 450.00	6 ft	450.00	6 ft.	450.00
PLEASE MAKE CHECK PAYABLE TO:								
Viking Exploration, Inc.								
Spotted Horse Mine Trust Account								
TOTALS		$ 450.00		$ 450.00		$ 450.00		$ 450.00

RECEIVED JUL 23 1973

I certify that the above bill is correct and just and that payment therefor has not been received.

Date 7/17/73 *Payee Viking Exploration, Inc.

Per L C Hoffman Title Mining Projects Engineer

*When a voucher is signed or receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary," or "Treasurer," as the case may be.

A willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction is a criminal offense. (U. S. Code, Title 18, Sec. 1001.)

(INSTRUCTIONS ON REVERSE)

Approved as noted, subject to field examination and audit.

Signature Willard O Puffett OME Field Officer Date 7/31/73

(63) 14X0804

Approved for: $ 337.50
(SUBJECT TO AUDIT)

Signature BM7

Date 16 AUG 1973 Vou. No. 04245 A
(SEE OTHER SIDE)

FOR OPERATOR'S USE	FOR GOVERNMENT USE
REMARKS	REMARKS

RECEIVED
JUL 30 1973
O. M. E.
SPOKANE, WASH.

OPERATOR'S MONTHLY REPORT

The Operator, under an Office of Minerals Exploration contract, is required to report monthly to the Government. The report consists of two parts.

FIRST, the Operator's Monthly Voucher on Form 9-1648 listing the project costs incurred and claimed by the Operator is the voucher basis for payment of the Government's share of the cost.

SECOND, the Operator's Narrative Report is a concise description of the work performed, results accomplished, and any unusual situations encountered, illustrated and supported by engineering-geological maps or sketches, drill hole logs, assay reports, etc., as pertinent.

The Operator submits the original and three copies of each of the two sections of this report to the OME regional Field Officer at the end of each month during the life of the contract.

PREPARATION OF OPERATOR'S MONTHLY VOUCHER, FORM 9-1648

In the left hand column list the items for which costs were incurred during the month, and also the items for which costs were previously reported. For items previously reported, show only UNITS TO DATE and COSTS TO DATE. Items listed should conform to Exhibit A of the contract (Estimated Costs of the Work). The total of COSTS THIS MONTH followed by the Operator's signature constitutes a claim for payment of the Government's share of the costs. The Operator or his agent must sign the certification in the lower left corner.

Except for amounts claimed under "fixed unit costs" provisions of the contract, all costs claimed in this voucher must be supported by documentary evidence consisting of: (a) certified copies or transcripts of payrolls which list each employee, wage rate, period of employment, gross earnings, and net earnings; (b) original or certified copies of invoices, statements of accounts, or purchase orders which indicate items of materials or services, quantities, unit prices, total charges, and payment terms; and (c) certified memoranda of the Operator for such items as unemployment taxes, employee's liability insurance, and depreciation of Operator-owned equipment. The certification may be stated thus, "Certified True Copy", followed by the signature of the Operator or his agent. One copy of each document should accompany the original of this voucher.

The requirement for submitting documentary evidence of claimed costs may be waived by the OME regional Field Officer if he determines that it is impracticable for an Operator to submit this material. In any case of waiver of this requirement an "on-site" audit by an OME auditor is mandatory prior to payment of the final Operator's Monthly Voucher.

SPOTTED HORSE MINE
ROUTE 3
LEWISTOWN, MONTANA 59457

RECEIVED
JUL 30 1973
O. M. E.
SPOKANE, WASH.

July 17, 1973

Re: OME - 6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, MT

Narrative report for June, 1973, delayed.

All prparatory and collaring work on both the 4th and 6th levels was completed during June, and drifting was begun on the 6th level after the initial visit of Field Officer Puffett. Only about six feet of advance was made before all underground work at the mine was suspended to install a new headframe over the main shaft. Work is expected to begin again on the 6th level drift on July 23 and we foresee no further delays in the work.

No assays have been taken to date.

L. C. Hoffman
Mining Projects Engineer

RECEIVED JUL 2 1973

The Travelers Indemnity Company

Hartford, Connecticut

(A STOCK COMPANY)

GENERAL FORM STATUS INQUIRY

U.S. Dept. of Interior
Geological Survey
Officeof Mineral Exploration
Washington, D.C. 20242

August 14 19 73

Our Bond No. 1902996

Reinsured's No.

Contractor: Viking Exploration, Inc.

Address: Denver, Colorado

Description of Contract: Exploration on 4th & 6th levels, Spotted Horse Gold Mine, Fergus County
(Include Location and Owner's Contract Number)
Montana Contract Number 2309

Owner: U.S.A.

Contract Price $ 21,375. Bond(s) $ 21,375. Effective Date 12-19-72

Without prejudicing your right or affecting our liability under our bond(s) described above, we would appreciate such of the following information as is now available.

Very truly yours,

G. Roger Scheler

Second Vice President

1. IF CONTRACT COMPLETED, PLEASE STATE:

   Approximate date of completion of work (or final delivery)

   Approximate acceptance date

   Final Contract Price $

2. IF CONTRACT UNCOMPLETED, PLEASE STATE:

   Approximate percentage or dollar amount of contract completed or delivered 1 %

3. Do you know of any unpaid bills for labor or material (Check) Yes ____ No X

4. Remarks: (If any) Work on contract has just begun.

Date August 17 1973

Signature Harold Kirkemo

Title Chief, Office of Minerals Exploration

PLEASE RETURN ORIGINAL OF THIS INQUIRY TO THE TRAVELERS INDEMNITY COMPANY

GENERAL FORM STATUS INQUIRY

Office at 101 University Blvd.
Denver, Colorado 80206

Stamped addressed envelope to be attached.
Federal cases to be submitted in duplicate.

S-373 REV. 1-61 PRINTED IN U.S.A.

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

August 10, 1973

Mr. W.P. Puffett
Field Officer, Region 1
U.S. Geological Survey
Offics of Minerals Exploration
656 U.S. Courthouse
Spokane, Washington 99201

AUG 16 1973

Cac 1.20 7M
HK 120

Re: OME-6880 (Gold)
Fergus County, Montana
OME Report for July

Dear Mr. Puffett:

No work was done under the OME Contract during July due to the installation and construction of the Headframe. Consequently no Monthly Voucher for July is being presented for payment.

However, Mr. L.C. Hoffman advised me on August 7th, that some muck has been hoisted from the 6th level, that drifting on the 6th level has resumed, and all straightening out work has been completed.

A secound slab round was taken on the OME drift in the 4th level. Sampling was done in the Bonanza Stope on ore remnants with same encouraging results. Further sampling is being done.

I would appreciate your sending me a supply of Monthly Vouchers to the Denver office.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

VIKING EXPLORATION, INC.

625 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • [illegible]

CHARLES A. EINARSEN
PRESIDENT

OFFICIAL COPY
O. M. E.
RECEIVED
AUG 2 1973

INITIALS	CODE
CAC	120
HR	120

July 26, 1973

RECEIVED
JUL 30 1973
O. M. E.
SPOKANE, WASH.

Mr. W. P. Puffett
Field Officer, Region 3
U. S. Geological Survey
Office of Minerals Exploration
656 U. S. Courthouse
Spokane, Washington 99201

Re: OME - 6880 (Gold)
Fergus County, Montana

Dear Mr. Puffett:

Enclosed herewith for your records and further handling are the following documents. Original and three copies each.

1. Operator's Monthly Voucher for Month of June, 1973
2. Mr. L. C. Hoffman, Mining Projects Engineer, Narrative Report for June, 1973 (delayed)

If your office requires additional information, please advise.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen, President

CAE:sw
Encls.

FILE COPY

July 19, 1973

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

Thank you for your letter of July 10, 1973.

We appreciate your assurance that OME work will have priority over other work in the same area. Our concern was that progress on the OME project could be delayed or postponed beyond the contract termination date of June 19, 1974, if mining or exploration work, unrelated to the OME contract, was conducted in the same area, or if the equipment and labor were fully employed elsewhere in the mine.

You are correct in noting that the OME contract grants no lien to the Government to secure payment of royalties. Article 6(e), which normally provides for this, was deleted because a performance bond was posted as required by Article 14 in lieu of lien and subordination agreements from the owners. Our statements that liens existed were in error.

If, after completion of the OME contract by Viking Exploration, Inc., the Mining Lease and Option to Acquire Title is executed by Viking and Johns-Manville Products Corporation, Viking presumably would wish to cancel the performance bond. However, before the option agreement is executed, and the performance bond is cancelled, we would request Johns-Manville to assume responsibility for payment of royalty by amending Article 5 of the agreement to include specific reference to the royalty provision in Contract 2309, OME-6880.

We now consider that the questions of concern to us on the above matters were satisfactorily answered by your informative letter. Accordingly, we are advising Mr. Willard P. Puffett, Field Officer, OME Region I, to process vouchers forthcoming from the project.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo, Chief
Office of Minerals Exploration

cc:
Region I

cc: MEF
MR Rdg.
OME Rdg.
OME File
Mr. Kirkemo

HKirkemp/gpv

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

OFFICIAL COPY
O. M. E.
RECEIVED
JUL 16 1973

INITIALS	CODE
HK	~~HK~~

July 10, 1973

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

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Kirkemo:

This will acknowledge receipt of your June 13th and July 6th letters. Please accept my apology for not responding sooner, however, I have been out of town for several days and one of the Johns-Manville key people with whom we deal has been on vacation. Please accept our apology for not responding sooner.

Further to our letter of June 7th, concerning the referenced contract, we have discussed with Johns-Manville the points raised in your letter of June 1st and feel that some further clarification would be helpful.

You have stated that OME work shall take precedence over other work in the same area, and that if there is a conflict, work under the lease agreement must be postponed until OME work is completed. It is contemplated that the OME work will be accomplished first; however, we're sure you will understand that our primary concern is to follow the most economical mining practices for the purpose of developing the mine to its maximum potential. At this time, it does not appear that this goal conflicts in any manner with your desire that all OME work take precedence. Moreover, if such a conflict should arise, we assume that it could be resolved informally with your office, since maximum efficiency and development to the fullest potential are in the best interest of all concerned. Thus, OME work will be given precedence over any conflicting work in the same area, unless such precedence appears detrimental to ultimate development prospects. If such a situation should arise, your office would be consulted prior to our taking any action.

You have also stated that, prior to execution, it is necessary to insert a provision in the Mining Lease and Option to Acquire Title which acknowledges

the Government's right to production royalties and liens to secure payment of such royalties. On our copy of OME-6880, however, Article 6(e), providing for a lien to secure royalties, has been deleted and initialed by the party who signed on behalf of the Government. We interpret this to indicate that the contract grants no lien to the Government to secure payment of royalties. If a subsequent instrument was executed creating such a lien or if our interpretation is in error, we would appreciate being so informed. If our interpretation is correct, prior to executing the Mining Lease and Option to Acquire Title, we will prepare for your review and approval an amendment recognizing the Government's right to production royalties. However, this amendment would not include language either recognizing or creating a lien to secure payment of such royalties. If you also desire an additional instrument at this time to reflect our acknowledgment of royalty responsibility, it will be supplied promptly.

Also, prior to executing the Mining Lease and Option to Acquire Title, we will first request the written consent of the Government and provide whatever facts you might require for the purpose of evaluating the request. At this stage, however, we would like to inquire as to what factors or circumstances you consider significant in granting or denying such a request. Also, if at this time it appears that there may be any potential obstacles to obtaining the requisite consent, we would appreciate being informed of their nature in as much detail as possible.

Finally, we would like to correct any erroneous impression which might have been created by our letter of May 25, 1973. In that letter, we refer to Johns-Manville Products Corporation as a "partner". As you are no doubt aware, Paragraph 3.3 of the Exploration Agreement and Option to Lease states as follows:

> "3.3. Nothing contained herein shall be deemed to make Viking or Hoffman an agent of Johns-Manville for any purpose nor to create a partnership or other legal relationship."

The use of the word "partner" in the letter of May 25th should, therefore, not be interpreted as a legal term of art.

We emphasize that it is our intention to cooperate fully with your office in every way possible; and upon receiving your response to this letter, we will attempt to comply with whatever actions you deem necessary.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:sw

FILE COPY

July 6, 1973

Mr. Charles A. Kinarsen
Viking Exploration, Inc.
820 Denver Center Building
1775 Lincoln Street
Denver, Colorado 80203

Re: OMX-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Kinarsen:

We wrote to you on June 1, 1973, concerning the Mining Lease and Option to Acquire Title with Johns-Manville Products Corporation. Article 5 of the document did not mention the Government's rights to royalty on mineral production from lands subject to the OMX contract, and the liens upon the property to secure payment of royalty. In lieu of amending Article 5 at this time, we asked that authorized representatives of both parties to the Exploration Agreement with Option to Lease acknowledge the responsibilities for OMX royalties by signing and returning to this office a copy of our letter.

In our letter to you of June 13, we mentioned that you had not included the signed acknowledgment in your letter to us dated June 7.

A month has passed since then and we have not yet received the signed acknowledgment. Pending its receipt, we will withhold any action on the processing of vouchers submitted for work done under the OMX project.

We urge you to take action on this matter at your earliest convenience.

Sincerely yours,

Harold Kirkemo, Chief
Office of Minerals Exploration

cc:
Region I
MRF
MR Rdg.
OMX Rdg.
OMX File
Kirkemo
WKirkemo/mcc

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
JUN 28 1973

INITIALS	CODE
CDC	20
HK	~~120~~

June 25, 1973

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Interim Inspection
OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

I visited the Spotted Horse mine on Wednesday, June 20, 1973. Mr. Larry Hoffman accompanied me underground to the workings on the 6th level and discussed the Operator's plans.

Some slabbing had been done on the 6th level in order to straighten the drift between the shaft and the proposed OME work. A starting location for OME work was measured and is 22 feet along the drift from spad 602. No actual OME work had been done but preparatory work had been in progress for several weeks. Ten men are employed at the mine.

Mr. Hoffman assured me that the OME work would take precedence over any other work that is planned in accordance with current agreements between Johns-Mansville Products Corporation and Viking Exploration, Inc.

Willard P. Puffett

Willard P. Puffett

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

June 13, 1973

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

Thank you for your letter of June 7, 1973, and the copy of Exhibit B to the Exploration Agreement with Option to Lease. We appreciate learning that the Mining Lease and Option to Acquire Title will be amended in accord with our suggestion of June 1, 1973.

Inasmuch as the latter document may not be executed or at least will not be executed until completion of work under the first phase of your agreement with Johns-Manville Products Corporation, the acknowledgement of the royalty responsibility must be signed by both parties and returned to us as requested in our letter of June 1. We are not assured that the Governments' right to royalty on production is protected unless the signed acknowledgement is on file. Failure to submit it may lead to suspension of payments on vouchers submitted for work done on the contract.

Sincerely yours,

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OM/E Reading file
Region I
Mr. Kirkemo
HKirkemo/cac 6/13/73

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

June 7, 1973

OFFICIAL COPY
O. M. E.
RECEIVED
JUN 12 1973

INITIALS	CODE
Cae	120
	120

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

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Kirkemo:

This will acknowledge receipt of your June 1st, 1973 letter. I am enclosing herewith two copies of Exhibit B which is the general outline of work agreed to under the agreement with Johns-Manville, referred to in Paragraph 3.1.

I have talked to Johns-Manville this date and an amendment is being prepared to incorporate the items mentioned in your June 1st, letter. We will furnish amended agreements to your office as soon as they have been completed and executed.

Sincerely,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:sw
Encls.

CC: Mr. J. Michael Sharratt
Johns-Manville Corp.

Mr. L. C. Hoffmann
Spotted Horse Mine

Copy to Reg. I
6/12/73

EXHIBIT 'B'

Received 6/12/73
Copy to Reg. 6/12/73

EXPLORATION PROGRAM:

A specific exploration program is difficult to set out when the amount of capital and the requirements of the investors are as yet unknown. Naturally, it would be best to have the financing available to explore all possibilities. Since this amount of money is not likely to be available from the outset, both a medium and a minimum program will be outlined.

To find a single vein or oreshoot would not be a satisfactory basis for operation of the mine. Fluctuations in the size and grade of a single deposit can ruin even a well managed mine. The objective is to develop as many veins as possible on several horizons to balance productivity. This is why it is essential, even with a limited exploration program, to install the hoist in the main shaft and explore several levels.

The smaller and more speculative possibilities may be examined once production is established. If no ore is found in the major zones examined, it is unlikely that these areas would provide enough ore to make up the deficit.

The exploration time schedule would again depend on the cash flow available and the investors requirements. A larger number of miners working on several projects concurrently would mean higher utilization of facilities, service and supervision time, and overhead, resulting in a lower cost per unit of work. On the other hand, benefits may result from spreading the work into two

fiscal years.

Time estimates and the related labor costs are dependent on the quality and learning ability of the worker. All miners would be trained on the job resulting in workers familiar with the mine conditions and without poor practices brought from other mines. The training period will be about 2 months, during which time productivity will naturally be lower.

As with any project of any size, there are always unforeseen delays and costs. This is the basis of the contingency budget. All of the estimates, including the contingency, have been based on previous experience and careful cost analysis.

PROGRAM I

1. Full development of the first level contact between the Spotted Horse shaft and the Kentucky Favorite with necessary cross-cuts to explore promising structures.

2. Rehabilitation of necessary facilities and workings to the winze sump.

3. An 80-foot cross-cut on the fourth level to the limestone point.

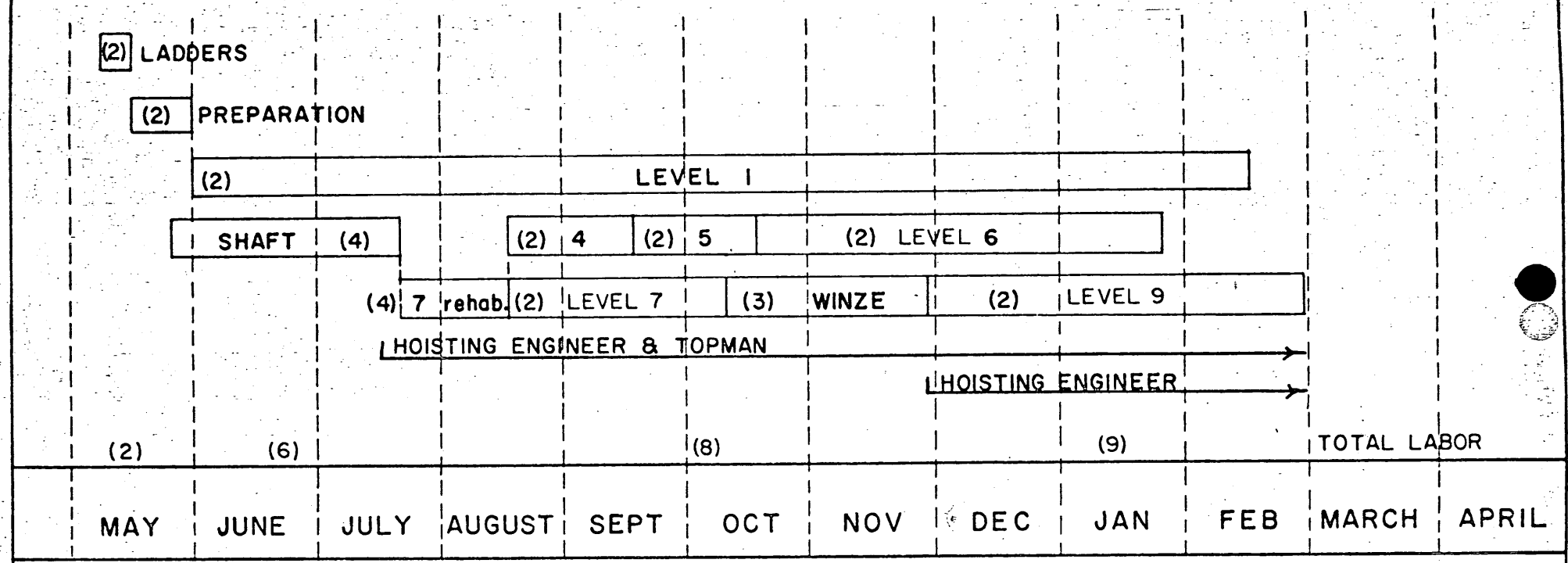
4. Follow ore structures on the fifth level from the Bonanza pipe stope.

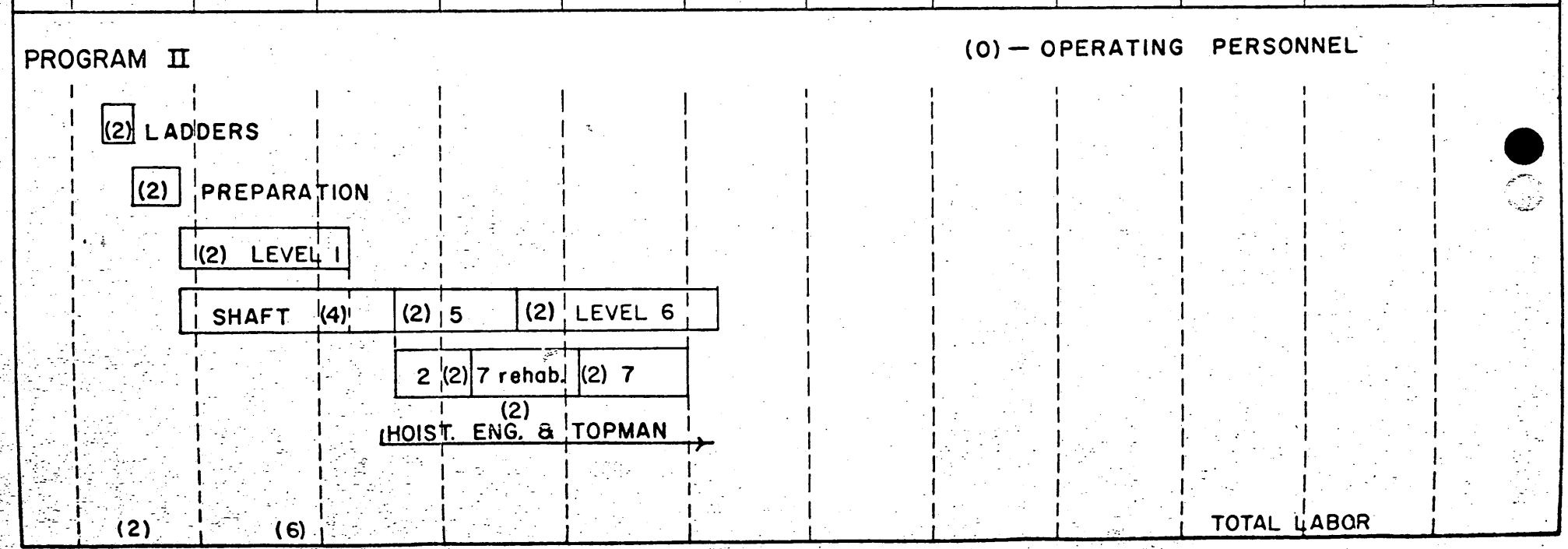
5. Drift along East Dike contact for 300 feet to explore Bonanza and Glory Hole vein extensions on the sixth level.

6. On the seventh level, drift 150 feet into the Mud Stope projection area.

7. On the lowest winze level, drive a 250 foot exploration drift along the Discovery structure.

JOB SCHEDULING





The total cost of this program would be $152,911 and it would take a minimum of 9 months to complete. It should delineate sufficient ore to provide the mine with a production basis and capital for further work.

PROGRAM II

1. Drift along the contact for 120 feet from the first level.
2. Drift to the limestone point on the second level, about 40 feet.
3. Rehabilitation of the main shaft and hoist installation.
4. Follow veins from Bonanza Pipe area, stoping as much ore as possible.
5. Drift 130 feet along the East Dike to explore for the Bonanza extension.
6. Drift 60 feet on the seventh level into the Mud Stope area.

The total cost of this program would be $66,841 and it would take a minimum of 5 months.

With the irregular size, shape and grade of the Spotted Horse veins, it is nearly impossible to make any sort of projection as to the size and grade of the potential ore bodies. This is especially true in the case of possible ore bodies in the unexplored block north of the Spotted Horse shaft, where there is no norm to work from.

To obtain a rough projection of the results of this exploration program, the following method was used. All known information from the known veins regarding size, shape, continuity, grade, and

apparent strength on the lower levels has been averaged. This average was then applied to the downward extensions. The tonnage listed is only that ore which would be available to overhand stoping after Program 1 has been executed. In all probability, the veins continue to much lower depths. Every effort has been made to be conservative.

Vein	Levels	Tonnage	Grade
Discovery	8 to 9	2900	1.3 oz.Au/t
Bonanza	4 to 6	3000	1.8 " "
Mud Stope	6 to 7	5300	1.0 " "
Glory Hole	3 to 6	1500	1.8 " "
Lime Point	1 to 5	5200	2.0 " "
North Spotted Horse	0 to 1	6700	1.5 " "

The total would then be 24,600 tons of ore containing 37,620 ounces of gold, or $1,805,760 at $48 per ounce.

EXPLORATION ASSISTANCE:

For several years, the Federal government, through its U.S. Geological Survey, has offered exploration assistance through the Office of Mineral Exploration.

In an approved gold exploration program, the OME will fund up to 75% of the cost of an exploration venture. This is in the form of a monthly contribution and is repaid from 5% of the mine production. If no ore is found, the loan is cancelled and need not be repaid. Simple interest is calculated at 2% above what the Treasury would charge the agency.

At the present time, the program has only $200,000 per year to invest. However, the type of projects being considered are in the $80,000 to $100,000 total project range, for mines with a good past production record, with no present ore reserves, and the geology to warrant further investigation for downward vein extensions. The Spotted Horse exactly fits these requirements after the rehabilitation work has been done. Another attractive point to the OME is that the majority of the mining equipment is on the property and paid for.

Another factor reducing the cost of exploration is the availability of Federal, state and local programs to aid in the retraining of veterans and other unemployed persons. This aid would substantially reduce the general labor cost and especially during the initial break-in period.

Of course, mining exploration and development work is 100% tax deductible. With a mine such as the Spotted Horse, where the majority of the mining cost lies in exploration and development, this makes a much more attractive cost/return ratio. In addition, once production is achieved, gold retains its 15% depletion allowance.

If all these benefits may be utilized, an investor could obtain a dollar's worth of exploration for as little as 12¢ invested.

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

Thank you for your letter of May 25, 1973, advising us that work was to start on the subject contract by May 29, that you have obtained Johns-Manville Products Corporation as a partner, and enclosing two copies of documents pertaining thereto.

In the Exploration Agreement with Option to Lease, paragraph 3.1 refers to an Exhibit B which is a general outline of work agreed to under terms of the agreement. The exhibit was not attached to the copies of the agreement we received. Please send copies to us at your earliest convenience. The OME work shall take precedence over any other work in the same area. If there is a conflict, work under the lease agreement must be postponed until the OME work is completed.

In the Mining Lease and Option to Acquire Title, Article 5 Lessor's Covenants, paragraph (a) fails to mention the Government's rights to royalty on mineral production from lands subject to the OME contract, and the liens upon the property to secure payment of royalty. Article 2(c) of the OME contract states that "The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claims, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a royalty on production and liens for the payment thereof."

Before the Mining Lease and Option to Acquire Title is executed, we ask that Article 5 be amended to include the above statement quoted from the OME contract. For the present, please return a copy of this letter showing signed acknowledgement of these responsibilities by authorized representatives of both parties to the Exploration Agreement with Option to Lease, which became effective on January 1, 1973.

With reference to your statement that actions taken with respect to acquiring the Johns-Manville Products Corporation as a partner are in accordance with Article 1(d) of the OME contract, we cannot accept this as a correct interpretation of that provision. Actually before the Mining Lease and Option to Acquire Title is executed, the Operator must obtain the written consent of the Government. The facts concerning the proposed assignment of rights or obligation must be presented in making such a request, and Article 5 of the Lease and Option (Exhibit C) would have to be amended as mentioned above.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

ROYALTY RESPONSIBILITY ACKNOWLEDGED
Viking Exploration, Inc.

By_____

Title_____

Johns-Manville Products Corporation

By_____

Title_____

cc: Director's reading file
Mineral Resources
OME reading file
Region I
Mr. Kirkemo
HKirkemo/cac 5/31/73

VIKING EXPLORATION, INC.

OFFICIAL COPY
M. E.
RECEIVED
MAY 29 1973
INITIALS | CODE
CAE | 120 M
| 120

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

May 25, 1973

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

Re: OME - 6880 (Gold), Contract 2309
Viking Exploration, Inc., Spotted
Horse Mine, Fergus Co., Montana

Dear Mr. Kirkemo,

Thank you for your letter of May 23 relative to the Spotted Horse Mine. Please be advised that work on the 4th and 6th levels will commence on May 29, 1973.

In accordance with Article 1.(d) of the Exploration Contract, Number 2309, please be advised that we have obtained Johns-Manville Products Corporation as a partner and have for the last few months been doing the necessary rehabilitation work in order to proceed with the exploration work on the 4th and 6th levels. We have now extended the shaft 100' to the surface from the 1st working level, have installed a hoist, and have commenced to do some limited hauling of debris from the lower levels.

Mr. Larry Hoffman has been furnished a three-months supply of Operator's Monthly Vouchers Form 9-1648, submitted to our office as per your January 22 letter. We plan to submit the monthly report as of the first of each month, commencing with July 1, 1973.

Enclosed please find two copies of our agreement with Johns-Manville Products Corporation, and the lease agreement provided for therein, in compliance with Article 2.(c). As you probably will recall, we worked for a long time to locate a partner to help us get this mine back on production, and we feel we were very fortunate to obtain Johns-Manville as a partner, so that the rehabilitation work could be performed prior to the June 1, 1973 commencement date for work to be performed under the OME contract on the 4th and 6th levels. This rehabilitation work has taken almost five months to complete. You will notice in the agreement with Johns-Manville, that the provisions for repayment of the OME loan were covered and that they are fully aware of the terms and conditions of the OME contract.

Would you please acknowledge receipt of these instruments. If you require any further information, please let me know.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enc.
cc: Mr. Larry C. Hoffman
Spotted Horse Mine
Route 3, Box 39
Lewistown, Montana 59457

cc: Mr. W. P. Puffett
Field Officer, Region I
U.S. Geological Survey
Office of Minerals Exploration
656 U.S. Court House
Spokane, Washington 99201

cc: Mr. J. Michael Sharratt
Johns-Manville Products Corporation
Greenwood Plaza
Denver, Colorado 80217

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code

MAY 23 1973

AIRMAIL

Mr. Charles A. Einarsen
President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

Dear Mr. Einarsen:

This letter is to inquire if work on the subject contract will start on or before June 1, 1973, as required. We have not heard from you since January 12, 1973, when you returned the signed contract to Mr. Willard P. Puffett, Field Officer, OME Region I.

Please advise us of your plans to commence work. If, for some valid reason, there is a delay in the start of work beyond June 1, an amendment to the contract must be prepared in order to keep it in force. Please send a copy of your reply to Mr. Puffett.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director;s reading file
Mineral Resources
OME reading file
Region I
H Kirkemo
HKirkemo/cac 5/23/73

ORIGINAL

EXPLORATION AGREEMENT WITH OPTION TO LEASE

THIS AGREEMENT is made and entered into effective as of the 1st day of January, 1973, even though the date of actual execution is subsequent thereto, by and between VIKING EXPLORATION, INC. ("Viking"), JOHNS-MANVILLE PRODUCTS CORPORATION ("Johns-Manville"), and L. C. HOFFMAN d/b/a Blue Range Mining Company ("Hoffman").

R E C I T A L S

A. Hoffman represents that he is Lessee of the Spotted Horse and Kentucky Favorite lode mining claims in Fergus County, Montana, pursuant to a certain Mining Lease and Option dated June 1, 1968, from First Trust Company of Montana as Lessor, and that he is owner by virtue of original location of the following unpatented lode mining claims and millsites in Fergus County:

Mining Location	Location Certificate Recorded in County Records	
	Book	Page
Puffrey Lode Mining Claim	17	235
George H. Lode Mining Claim	17	236
Asphidity Lode Mining Claim	17	237
Old Murph Lode Mining Claim	17	238
Deefy	17	318, 320, 321
Spotted Horse Millsite		
Kentucky Favorite Millsite		

The foregoing leased and owned mining properties are referred to collectively in this Agreement as the Spotted Horse Gold Mine.

B. Viking and Hoffman represent that Viking is the Assignee of Hoffman's interest in and to the Spotted Horse Gold Mine pursuant to that certain document executed by them on February 28, 1972, entitled Mining Sub-Lease and Option, a copy of which, with Exhibits thereto, is attached to this Agreement as Exhibit A.

ORIGINAL

C. Viking and Johns-Manville are willing to perform and finance the development of the Spotted Horse Gold Mine on the terms set forth in this Agreement.

D. The provisions of this Agreement shall control if there is any conflict with the provisions of Exhibit A.

NOW, THEREFORE, the parties agree as follows:

1.0. Representations and Warranties

1.1. Hoffman and Viking represent to Johns-Manville that:

1.101. There are no title defects or encumbrances affecting the Spotted Horse and Kentucky Favorite lode mining claims, and First Trust Company of Montana has the power to lease and convey such properties.

1.102. The Mining Lease and Option dated June 1, 1968, from First Trust Company of Montana to Hoffman as amended is presently in good standing; there are no actions or omissions with respect to the leased properties which would permit Lessor to declare a default; and no notice of default has been given or received.

1.103. The unpatented lode mining claims and millsites included in the Spotted Horse Gold Mine are valid locations in accordance with the laws and regulations of the United States of America and the State of Montana; assessment work has been duly performed in all assessment years ending September 1, 1972; and no notice of contest or threat of contest as to the validity of these claims has been received.

1.104. The Spotted Horse Gold Mine is free and clear of all liens, encumbrances, leases, and claims of third parties, except as recited herein, and except such rights as are reserved to the United States in the patents and in respect of unpatented mining claims generally, and except such rights as are executed in favor of the United States by OME Exploration Contract No. 2309 dated December 19, 1972.

1.105. Hoffman and Viking have full power and authority to enter into this Agreement.

1.106. At the time of execution of this Agreement Viking is the owner of the Spotted Horse Gold Mine, subject to the provisions of the Mining Lease and Option of June 1, 1968, and the Mining Sub-Lease and Option of February 28, 1972.

1.2 Prior to March 15, 1973, Johns-Manville shall complete such title examination as it deems appropriate, and Hoffman and Viking will cooperate by furnishing Johns-Manville such title documents as they may have or which Johns-Manville may reasonably require. Johns-Manville shall promptly notify Hoffman and Viking of any title defects discovered and Hoffman and Viking will thereupon proceed promptly to cure such defects at their sole cost and expense and to the satisfaction of Johns-Manville. During the time such defects are being cured, this Agreement shall remain in effect, but Johns-Manville shall not be under any duty to contribute any funds or proceed with any work until the defects are cured to the satisfaction of Johns-Manville. If the defects are not or cannot be cured within a reasonable time, Johns-Manville may terminate this Agreement.

1.3. Johns-Manville represents to Hoffman and Viking that

1.301. It is a Delaware corporation, wholly owned by Johns-Manville Corporation, a New York corporation.

1.302. It has full power and authority to enter into this Agreement.

2.0. Contributions by Johns-Manville

2.1. Upon execution of this Agreement Johns-Manville has paid to Viking the sum of fifty thousand dollars ($50,000), receipt of which is hereby acknowledged, to be used by Viking in the development of the Spotted Horse Gold Mine. In consideration of this contribution, Viking and Hoffman hereby grant to Johns-Manville an interest in and to thirty-four per cent (34%) of the proceeds of the sale or liquidation of any and all assets subject to this Agreement and in and to thirty-four per cent (34%) of all profits resulting from mining operations conducted on the properties subject to this Agreement.

2.2 At any time on or before sixty (60) business days after receipt of notification that its initial contribution of $50,000 has been spent for development work, Johns-Manville may continue this Agreement by contributing an additional $50,000 for use by Viking in development of the Spotted Horse Gold Mine. In consideration of this contribution, Viking and Hoffman agree to grant to Johns-Manville an additional seventeen per cent (17%) interest in and to the proceeds of the sale or liquidation of any and all assets subject to this Agreement and in and to all profits resulting from mining operations conducted on the properties subject to this Agreement.

2.3 In the event that Johns-Manville may terminate this Agreement under 1.2 above, the unexpended portion of the sums paid to Viking

under 2.1 and 2.2 shall be refunded to Johns-Manville promptly, and Johns-Manville shall have a lien upon the Spotted Horse Gold Mine for the amount expended mutatis mutandis until the full amount paid under 2.1 and 2.2 shall have been refunded in full.

2.4. While Viking is conducting development work utilizing funds contributed by Johns-Manville, proceeds which may be derived from the ores or concentrates produced from the Spotted Horse Gold Mine, after payment of appropriate royalties, shall be applied to the costs of development work unless Viking and Johns-Manville agree otherwise. These derived funds shall be in addition to the contribution of Johns-Manville.

3.0. Development Work

3.1. As soon as practicable Viking shall commence development work in the Spotted Horse Gold Mine to determine the extent of the ore body and the feasibility of mining it. This development work will be performed in accordance with the general outline set forth in Exhibit B which is attached hereto and by reference incorporated herein. The costs of this work, including a salary to Hoffman of $950 per month while he is manager, will be paid from funds contributed by Johns-Manville in accordance with 2.1 and 2.2 and derived pursuant to 2.4.

3.2. No expenditures shall be made in excess of $50,000 and derived funds unless and until Johns-Manville has agreed to contribute a second $50,000, and no expenditures shall be made in excess of this second contribution and derived funds without prior written approval of Johns-Manville.

3.3. Nothing contained herein shall be deemed to make Viking or Hoffman an agent of Johns-Manville for any purpose nor to create a partnership or other legal relationship.

3.4. During this development stage Viking and Hoffman will make every reasonable effort to hold confidential the interest of Johns-Manville and agree that, to the extent possible, the name of Johns-Manville will not be used in connection with any transactions or operations except as may be required by governmental agencies.

3.5. Viking shall have full, complete and exclusive control, charge and supervision of all property and equipment subject to this Agreement and the conduct of all exploratory, developmental, and mining operations during the development phase in this Article 3.0. Viking shall operate the property to the best of its ability and in accordance with modern techniques and good and economical mining practice. All operations shall be conducted with due regard to the development and preservation of the Spotted Horse Gold Mine and in keeping with all applicable Federal and State mining laws and regulations. Viking shall not be liable for losses sustained in the conduct of operations hereunder, except such losses as may result from its gross negligence or willful misconduct.

3.6. Viking shall have, among others and without limitation, the following specific duties and obligations:

3.601. To manage, direct and control all exploration, developmental, mining and marketing operations in, under and relating to land subject to this Agreement in a prudent and workmanlike manner and in accordance with the terms and conditions of this Agreement and all laws and valid regulations pertaining to the mining claims and mining operations.

3.602. To keep true and correct books, accounts and records of operations hereunder and to permit at all reasonable times the inspection, examination and auditing thereof by the parties to this Agreement.

3.603. To keep all property subject to this Agreement free from liens and encumbrances occasioned by operations hereunder.

3.604. To furnish other parties on or before the 25th day of each calendar month with an operating report which will specify, among other things, the following: a statement of the work performed during the preceding month and the results obtained therefrom; a description of the quantity and quality of any minerals produced; an itemized list of all expenditures incurred during that month and a statement of available funds remaining; a narrative summary of the projected work for the following month and an estimate of the expenditures required to accomplish such work.

3.605. To allow any party to this Agreement to have access at its sole risk to all land subject to this Agreement at any reasonable time and to inspect all maps, records, samples, account books, assay reports, logs, or any other documents relating to the operations.

3.606. To maintain full coverage under, and to comply with the requirements of, the applicable Workmen's Compensation laws of the State of Montana, and to carry with a reputable insurance carrier public liability and automobile insurance covering its operations hereunder with limits of not less than $100,000 as to any one person; $300,000 as to any one accident; and $100,000 as to any one accident as to property damage. Each such insurance policy shall contain a provision that the insuror will neither alter the terms and conditions thereof nor allow said policy to terminate or lapse until such time as Johns-Manville has been notified and has been given a period of thirty (30) days after receipt of such notice within which to take whatever actions are necessary to maintain the policy in full force and effect. Viking will deliver evidence thereof to Johns-Manville in the form of certificates issued by the insurors or certified copies of the policies showing coverage in compliance with this paragraph.

4.0. Accounting Procedures

4.1. Unless Viking and Johns-Manville agree otherwise, only those expenses, costs, and charges reasonable and necessary for the conduct of operations on or for the benefit of the Spotted Horse Gold Mine and other properties subject to this Agreement will be charged to the funds paid to Viking under 2.1 and 2.2 and to derived funds under 2.4. Each party will bear its own expenses for such travel, inspections, and supplemental work as it desires to make. General industry practices in accounting for mine operations will control whenever there is no specific agreement.

4.2. Contributions by Johns-Manville pursuant to 2.1 and 2.2 will be made directly to Viking which will use such funds to open one or more separate bank accounts from which the operating expenses will be paid.

4.3. To the extent available, the facilities of a local bank in Lewiston, Montana, may be used to perform such routine operations as bookkeeping and payroll preparation, and the cost of these services shall be considered a part of the operating expenses. If such services are not readily available in Lewiston, Montana, at a reasonable charge, Viking may perform such accounting and payroll services and charge therefor against funds paid under 2.1 and 2.2 and derived funds under 2.4 a fee in the amount of four per cent (4%) of total monthly expenditures authorized under 4.1.

4.4. Any funds received from the Office of Minerals Exploration (hereinafter called "OME funds') will be applied strictly for the purposes specified in the OME contract granting such funds. A separate account shall be maintained for OME funds, and said account shall clearly indicate the itemized expenditure of OME funds. Repayment of OME funds will be accomplished from the proceeds of sale of all ores and concentrates produced from properties subject to the OME contract. These repayments will not be allocated among the parties to this Agreement but shall be considered a charge to operations.

4.5. Viking shall not make any charge for the use of equipment, structures, improvements, and machinery presently located on the

Spotted Horse Gold Mine, including the equipment listed in the Mining Sub-Lease and Option of February 28, 1972.

5.0. Equipment

5.1. All equipment, structures, improvements, and machinery presently located on the Spotted Horse Gold Mine, including the equipment listed in the Mining Sub-Lease and Option of February 28, 1972, are hereby included as a part of the Spotted Horse Gold Mine; provided, however, in the event that Johns-Manville may terminate this Agreement under 9.0, during the period of sixty (60) days next following the date thereof, Hoffman shall have the right to a right of first refusal of the repurchase of any or all equipment listed in said Mining-Sub-Lease and Option according to the terms therein stated and after-acquired equipment left by Johns-Manville.

5.2. Either Viking or Johns-Manville may, during the term of this Agreement and as the reasonable needs of operations may dictate, contribute new or used equipment or machinery. Either party making such a contribution of equipment shall be credited to the extent of the real value of such equipment.

6.0. Hoffman Royalty

6.1. Hoffman agrees to release the royalty retained by him pursuant to paragraph 3(b) of the Mining Sub-Lease and Option of February 28, 1972, at any time prior to December 31, 1973, upon receipt of consideration in the amount of $100,000 less the amount of any royalties previously paid to him by Viking.

6.2. After December 31, 1973, Hoffman agrees to release the Hoffman royalty on the following terms:

6.201. Commencing on January 1, 1974, and upon the 1st of January each year thereafter, the purchase price of $100,000 under 6.1 shall be increased by interest in the amount of seven per cent (7%) of the outstanding balance thereof after first deducting the amount of all royalties actually paid to Hoffman and adding the amounts of any interest accrued in previous years pursuant to this provision.

6.202. The amount of interest to be paid in the year of release will be prorated on a monthly basis up to and including the month in which the release is executed.

6.203. The price for a release may be paid solely from the royalty due Hoffman under the Mining Sub-Lease and Option of February 28, 1972.

6.3. When the price for a release has been paid in full, Hoffman shall execute and deliver a legally binding release of the royalty due him in a form satisfactory to Viking and Johns-Manville.

7.0. Option to Johns-Manville

7.1 While this Agreement is in effect, but not to exceed a period terminating at midnight on the 60th business day after Johns-Manville has been notified that its second contribution of $50,000 has been expended for exploration purposes, Viking grants unto Johns-Manville the exclusive right, privilege, and option to lease Viking's right, title, and interest in the Spotted Horse Gold Mine under the terms and conditions set forth in the Mining Lease and Option attached

hereto as Exhibit C and made a part hereof.

7.101. In the event that Johns-Manville shall exercise its rights under 7.1, it may require Viking and/or Hoffman to, and they and each of them shall, promptly exercise their respective rights under the Mining Lease and Option of June 1, 1968, and under the Mining Sub-Lease and Option dated February 28, 1972, as the case may be, to acquire the entire undivided right, title, and interest in and to all of the properties comprising the Spotted Horse Gold Mine, and to lease the same to Johns-Manville under 7.1.

7.2. If Johns-Manville exercises this option, it must give Viking written notice of such election prior to the expiration of the option term.

7.3. Upon receipt of a written notice of exercise of option, Viking shall forthwith execute and deliver the appropriate documents.

8.0. Area of Interest

8.1. Viking is presently negotiating for a lease and option on certain mining properties adjacent to the Spotted Horse Gold Mine, which are collectively referred to as the Maginnis Mine. Viking agrees that if it obtains said lease and option, the properties subject thereto will immediately become subject to all of the terms and conditions of this Agreement and the Maginnis Mine shall be considered a part of the Spotted Horse Gold Mine.

8.101. The costs of development work performed on the Maginnis Mine or other expenditures necessary to maintain the lease and option in full force and effect will be paid from funds contributed by Johns-Manville in accordance with 2.1 and 2.2 and derived pursuant to 2.4.

8.2. While this Agreement is in effect, if Viking, Hoffman or Johns-Manville shall acquire properties in Fergus or Phillips Counties, Montana, believed to contain valuable deposits of either silver or gold, with the exception of the Maginnis Mine, the party acquiring such properties shall immediately notify the others and upon request of either of the others such properties shall become subject to all of the terms and conditions of this Agreement and references herein to the Spotted Horse Gold Mine shall be deemed to include such after-acquired property.

9.0. Termination

9.1. This Agreement shall terminate upon the occurrence of any one of the following:

9.101. Johns-Manville elects not to contribute a second $50,000 for development work;

9.102. Viking and Johns-Manville jointly determine that an economic mining operation cannot be developed or continued;

9.103. A petition alleging bankruptcy is filed in a United States District Court against either Viking or Johns-Manville;

9.104. Johns-Manville does not make an election within the sixty (60) business days after the second $50,000 has been expended for development work.

9.2. Upon termination Johns-Manville shall have no further liabilities or obligations for or with respect to the Spotted Horse Gold Mine ,but the interest of Johns-Manville acquired by it under 2.1 and 2.2 shall continue unaltered.

10.0. Assignment

10.1. Viking and Johns-Manville may assign any and all of their interests in this Agreement and the Spotted Horse Gold Mine to any wholly-owned subsidiary or to any wholly-owned subsidiary of a parent corporation without first offering to assign to the other; provided, however, that Viking may assign its interest herein to a subsidiary or company owned solely by itself and Hoffman, and in which Hoffman's interest is less than fifty per cent (50%).

10.2. Except as provided in 10.1, if either Viking or Johns-Manville desires to assign any or all of its interests in this Agreement and the Spotted Horse Gold Mine, it shall advise the other of the terms pursuant to which it proposes to make an assignment and offer to assign such interest to the other on the same terms and conditions. The party receiving this offer shall notify the offeror in writing within sixty (60) business days of its election to accept or reject the offer and failure to act within that time shall be deemed a rejection.

10.3. Anyone acquiring an interest in this Agreement and the operations hereunder shall be bound by all the terms and conditions of this Agreement.

VIKING EXPLORATION, INC.

By Charles A. Einarsen
PRESIDENT

JOHNS-MANVILLE PRODUCTS CORPORATION

By W. L. Van Derbeck
VICE-PRESIDENT

L. C. Hoffman

L. C. HOFFMAN
d/b/a Blue Range Mining Company

Addresses of the Parties:

JOHNS-MANVILLE PRODUCTS CORPORATION
Greenwood Plaza
Denver, Colorado 80217

VIKING EXPLORATION, INC.
820 Denver Center Building
Denver, Colorado 80203

L. C. HOFFMAN d/b/a
Blue Range Mining Company
Rt. 3, Box 39
Lewiston, Montana 59457

EXHIBIT "C"

MINING LEASE AND OPTION TO ACQUIRE TITLE

THIS AGREEMENT is made and entered into this _____ day of _____, 19____, by and between VIKING EXPLORATION, INC. ("Lessor") and JOHNS-MANVILLE PRODUCTS CORPORATION ("Lessee").

W I T N E S S E T H:

Lessor, for and in consideration of the royalties and performance of the covenants and agreements set forth below does hereby grant, demise, and lease to Lessee all of his right, title and interest, saving and excepting only bare legal title, in and to all properties subject to the agreement between Lessor and Lessee dated January 1, 1973, and entitled Exploration Agreement with Option to Lease. At the time of execution hereof, a complete list describing all of the subject properties will be attached hereto and incorporated and made a part hereof as Exhibit A.

I

TERM

The term of this Lease shall commence on the date of execution hereof and shall continue until five (5) years after the cessation of the mining, production, and sale of minerals from the leased premises; subject, however, to the provisions for termination set forth hereinbelow.

II

ROYALTY AND PAYMENT

1. At the time of execution hereof, the annual royalty to be paid by Lessee to Lessor is forty-nine per cent (49%) of the net annual profits of the mining operations conducted on the leased premises.

2. Amounts paid by Lessee to Lessor as royalties may be decreased pursuant to the provisions of III below.

3. Any other provisions of this Lease or other agreements notwithstanding, the minimum annual royalty to be paid Lessor by Lessee will be ten per cent (10%) of the net annual profits of the mining operations conducted on the leased premises.

III

CONTRIBUTIONS OF CAPITAL BY LESSOR

1. If at any time or times after the Lessee has paid $100,000 to Lessor under the provision of that certain Exploration Agreement with Option to Lease effective as of January 1, 1973, for exploration and/or development of the leased premises, Lessee determines in the exercise of its sole discretion that it is necessary or desirable to make additional capital expenditures for the purpose of either developing or exploiting the mineral potential of the leased premises or related thereto, Lessee shall notify Lessor and provide Lessor with a reasonable opportunity, not to exceed thirty (30) days, to contribute pro rata to the extent of 49% of any such additional capital expenditures in or related to the leased premises by Lessee. If Lessor elects so to do, its rights under this Lease to royalties to be paid out of net profits of production from the leased premises will remain unchanged. If Lessor should decline or fail so to do, its rights under this Lease to royalties in and to said profits will be reduced according to the following schedule:

(a) Lessor's interest in and to the net profits of production from the leased premises, as reflected by annual royalty payments, will be reduced by one per cent (1%) for each $4,000 expended by Lessee up to and including

a reduction of interest in the amount of ten per cent (10%).

(b) After Lessor's royalty interest in and to said net profits has been reduced by the amount specified in (a) above, further reductions in said interest will result at the rate of one per cent (1%) for each additional $6,000 expended by Lessee up to and including a reduction of interest in the amount of ten per cent (10%).

(c) After Lessor's royalty interest in and to said net profits has been reduced by the amounts specified in (a) and (b) above, further reductions in said interest will result at the rate of one per cent (1%) for each additional $8,000 expended by Lessee up to and including a reduction of interest in the amount of ten per cent (10%).

(d) After Lessor's royalty interest in and to said net profits has been reduced by the amounts specified in (a), (b) and (c) above, further reductions in said interest will result at the rate of one per cent (1%) for each additional $15,000 expended by Lessee up to and including a reduction of interest in the amount of nine per cent (9%).

2. Any failure by Lessor to notify Lessee of Lessor's election to contribute under III hereinabove shall be and shall be deemed to be conclusive evidence of Lessor's declining to so contribute.

3. Notwithstanding the foregoing provisions, and pursuant to II-3 above, at no time shall Lessor's royalty interest in and to the profits of production from the leased premises be reduced to less than ten per cent (10%) by reason of Lessor's failure or refusal to contribute additional capital.

IV

LESSEE'S OPTION TO ACQUIRE TITLE

1. Lessor hereby grants unto Lessee the option, exercisable at any time while this Lease is in effect, to acquire legal title and any and all other rights, titles, and interests which Lessor may possess in and to the leased premises.

(a) Upon receipt of written notice of Lessee's intent to exercise this option, Lessor shall promptly execute and deliver to Lessee all of the documents necessary to transfer legal title and any and all other rights, titles, and interests to the leased premises to Lessee.

(b) In the event that Lessee elects to exercise this option, the annual royalties payable to Lessor shall not be affected thereby and shall continue at the rate which was in effect at the time of the exercise of this option; subject, however, to the provisions of III above.

V

LESSOR'S COVENANTS

1. Lessor makes the following representations covering the leased premises:

(a) That it is in possession and holds good and merchantable possessory title free and clear of all liens, encumbrances, or unrecorded agreements of any kind.

(b) That the mining claims are in good standing to the best of its knowledge and belief and that the assess-

ment work required by law has been duly performed for the assessment year ending September 1, _____, and for prior years.

(c) That it does not know of any right or interest in the leased premises asserted by others through overlapping or conflicting mining claims, mill sites, tunnel locations or government leases.

(d) That it has the right, power and authority to execute this Lease and convey the entire leasehold interest to Lessee.

(e) That no other person, association or corporation has any interest in or claim to the leased premises, and that all prior leases, if any, have been terminated or released.

(f) That it will protect, defend and save harmless Lessee from anyone claiming any interest in the leased premises by, through or under it.

2. Lessor grants to Lessee a right of access through and across the leased premises to any adjacent properties not owned or controlled by Lessor but which may be explored, developed or mined by Lessee, together with the privilege of mining adjacent premises through workings on or in the leased premises. No additional royalty or payment shall be made to Lessor if Lessee exercises the right or privilege herewith granted.

3. Lessor agrees that Lessee shall have the right during the term of this Lease or within six months after the termination

of this Lease to remove all machinery, fixtures and improvements placed or erected on the premises by Lessee, but shall not remove or impair any supports placed in the mines or any timbers or framework necessary to the use and maintenance of the shafts or other approaches to the mines, or any haulageways within the mines.

4. If any other person, association, or corporation has any interest in or claim to the leased premises, Lessor agrees to assist Lessee in obtaining the inclusion of such person, association or corporation in this Lease, and if Lessor subsequently acquires the interest of any other person, association, or corporation, such interest shall be deemed to be included within the terms of this Lease.

5. Activities of Lessor, or of anyone claiming under Lessor, in connection with exploration for or production of the reserved oil, gas, and petroleum products shall be conducted in such a manner that they will not interfere with the operations of Lessee.

VI

LESSEE'S COVENANTS

1. Lessee shall conduct its operations in accordance with good and economic mining practices.

2. Lessee shall perform all necessary assessment work upon the unpatented mining claims held under this Lease by the end of the current assessment year. Thereafter, while this Lease is in effect, Lessee shall perform all necessary assessment work upon unpatented mining claims held under this Lease; provided, however, that Lessee shall not be obligated to perform assessment work upon unpatented

mining claims which have been surrendered or released to Lessor or for which notices of surrender or release have been given prior to July 1 of any assessment year. Lessee shall file in the name of Lessor all proofs of labor required by law.

3. Lessee shall commence mining operations within a reasonable time after discovery of commercial ore in the leased premises and thereafter continue diligently mining such ore as can profitably be recovered by it. Lessee is not required to commence or to continue mining operations when there is no market for the ore or when the ore cannot be mined profitably by it.

4. Lessee shall pay when due all claims for work done, services rendered, or material furnished to the leased premises, and shall hold Lessor harmless from any liability arising out of any operations under the Lease. Lessee shall defend at its own expense any suits or claims resulting from its operations under the Lease, and shall keep the leased premises free from any liens.

5. Lessee assumes full responsibility in case of accident to persons on the leased premises, and agrees to hold Lessor harmless from any suits for injury or accident arising out of its operations. Lessee shall apply for and maintain at all times workmen's compensation insurance pursuant to the laws of the State of Montana, and shall comply in all respects with any state or federal laws pertaining to employment of persons in mining operations.

6. Lessee shall keep accurate records and accounts of all operations under this Lease, and shall permit Lessor or its agents to inspect and make copies of the same at all reasonable times.

The records shall include, but not be limited to, copies of all maps, surveys, exploratory drilling logs, geological or assay reports, and other operational data prepared from or connected with the leased premises. Lessee agrees to fulfill reasonable requests from Lessor for reports from these records.

7. Lessor or its agents may, at all reasonable times, enter upon and into the leased premises for inspection or to conduct survey or sampling operations, provided that such activities shall not unreasonably interfere with the operations of Lessee.

8. Any mining claims located during the term of this Lease by Lessee within the limits of the leased premises shall be included in the terms of this Lease to the same extent as if they were located by Lessor.

VII

TAXES

Lessee shall pay when due all taxes levied on the leased premises and upon minerals mined and sold therefrom by Lessee for those years during which Lessee is in possession under this Lease. If Lessee's possession is for less than a full calendar year, Lessee's tax payment for such year shall be prorated on the basis of the portion of the year Lessee was in possession; provided, however, that if the taxes are measured by value of mineral production, Lessee's tax payment shall be prorated on the basis of that portion of the value attributable to Lessee's operations.

VIII

CANCELLATION AND SURRENDER

1. If Lessee violates any provisions of this Lease or fails to perform any covenants made by it herein, Lessor may, at its option, cancel this Lease by giving written notice to Lessee of its election to cancel the Lease, and by specifying in such notice the matters in which Lessee is in default; provided, however, that such cancellation shall be inoperative if, within sixty (60) business days from the effective date of such notice, Lessee remedies the matters of default specified by Lessor.

2. Lessee may surrender this Lease or release any portion of the leased premises by giving Lessor thirty (30) days' written notice; provided, however, that Lessee must perform any necessary assessment work and filing of proofs of labor thereof as required by law for the assessment year in which the mining claims are surrendered or released if notice of surrender or release is not given to Lessor prior to July 1 of the assessment year. Surrender shall terminate all obligations of Lessee except those accrued prior to the effective date of surrender, and release of any portion of the leased premises shall remove such portion from the operation of this Lease and terminate all obligations of Lessee with respect to such portion except those accrued prior to the effective date of the release.

3. In the event this Lease is cancelled,terminated or surrendered at any time for any reason whatsoever other than the default of Lessee,Lessee's fifty one (51%) per cent interest in and to the proceeds of the sale or liquidation of any and all assets and in and to the net profits of operation shall continue unaltered. In the event this Lease is cancelled, terminated or

surrendered at any time for the default of Lessee, an annual royalty in and to ten per cent (10%) of the net annual profits shall be retained by Lessee in his favor.

IX

FORCE MAJEURE

The failure to perform or to comply with any of the covenants or conditions hereof on the part of the Lessee, shall not be a ground for cancellation, termination or forfeiture hereof, during such time as such failure to perform is caused, or compliance is prevented, by severe weather, explosion, unusual mining casualty, mill shutdown, damage to or destruction of mill or mill plant facility, fire, flood, civil or military authority, insurrection, riots, strikes, inability after diligent effort to obtain competent workmen or materials, acts of God or any circumstances or conditions beyond the reasonable control of Lessee, and Lessee shall be excused from, and not held liable for such failure to perform or to comply. All periods of force majeure shall be deemed to begin at the time Lessee is prevented from performance hereunder by reason of force majeure. Lessee shall promptly notify Lessor of the commencement and termination of any such period of force majeure.

X

AREA OF INTEREST

While this Lease is in effect, if Viking or Johns-Manville shall acquire properties in Fergus or Phillips Counties, Montana, believed to contain valuable deposits of either silver or gold, it shall immediately notify the other and upon request of the other, such properties shall become subject to all of the terms and conditions of this Lease.

XI

NOTICE

Any written notice provided for herein shall be sent by certified mail, return receipt requested, addressed as follows:

To Lessor: Viking Exploration, Inc.
820 Denver Center Building
Denver, Colorado 80203

To Lessee: Johns-Manville Products Corporation
Greenwood Plaza
Denver, Colorado 80217

Either party may change the name or address above by written notice to the other party. Notices shall be effective when deposited in the United States mail.

XII

ASSIGNMENT

1. Lessor and Lessee may assign any and all of their interests in this Lease to any wholly-owned subsidiary, or to any wholly-owned subsidiary of a parent corporation without first offering to assign to the other.

2. Except as provided in XII-1, if either party hereto desires to assign any or all of its interests in this Lease, it shall advise the other party of the terms pursuant to which it proposes to make an assignment and offer to assign such interest to the other on the same terms and conditions. The party receiving this offer shall notify the offeror in writing within sixty (60) business days of its election to accept or reject the offer and failure to act within that time shall be deemed a rejection.

3. Anyone acquiring an interest in this Lease and the operations hereunder shall be bound by all of the terms and conditions of this Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Lease the day and year first above written.

VIKING EXPLORATION, INC.

[seal] By_____

Attest:

_____

JOHNS-MANVILLE PRODUCTS CORPORATION

[seal] By_____

Attest:

_____

ENDORSEMENT

L. C. Hoffman, d/b/a Blue Range Mining Company, acknowledges that he has read and understands the provisions of Paragraph X of this Lease, entitled AREA OF INTEREST, and by his signature hereto agrees to be bound by the terms and conditions of said paragraph in the same manner as if he were a party to this Lease.

_____
L. C. HOFFMAN, d/b/a Blue Range Mining Company

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing Mining Lease Agreement was acknowledged before me this _____ day of _____, 19____, by _____, of VIKING EXPLORATION, INC.

Witness my hand and official seal.

My commission expires: _____.

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing Mining Lease Agreement was acknowledged before me this _____ day of _____, 19____, by _____, of JOHNS-MANVILLE PRODUCTS CORPORATION.

Witness my hand and official seal.

My commission expires: _____.

_____
Notary Public

[illegible]

[illegible]

[illegible]

[illegible]

U.S. Dept of Interior
[illegible]logical Survey
[illegible] of Mineral Exploration
[illegible]ington, D. C. 20242

Our Bond No. [illegible]

[illegible]ured's No. [illegible]

Viking Exploration, Inc.

[illegible], Colorado

[illegible] of Contract: Exploration on [illegible] & 6th [illegible], [illegible] Mine, [illegible]
(Indicate location [illegible] Owner's Contract [illegible])

Mon[illegible] Contract [illegible] 2309

[illegible] S. A.

Contract [illegible] 45 [illegible] 21,375 [illegible] Date [illegible]

Without [illegible] or altering our liability under our bond(s) described above, we would appreciate [illegible] following information [illegible]

[illegible] yours,

[illegible]

CONTRACT COMPLETED, PLEASE STATE:

Approximate date of completion of work (or final delivery) [illegible]

Approximate acceptance date [illegible]

Total Contract Price $ [illegible]

CONTRACT UNCOMPLETED, PLEASE STATE:

Approximate percentage or dollar amount of contract completed or delivered **No funds spent to date on contract.**

3. Do you know of any unpaid bills for labor or material (Check) Yes [illegible] No **X**

4. Remarks: (If [illegible] **Contract requires that work shall begin on or before June 1, 1973.**

April 10 19 **73**

Signature [illegible]

Title **Chief, Office of Minerals Exploration**

[illegible] RETURN ORIGINAL [illegible] THIS [illegible] TO THE TRAVELE[illegible] COMPANY

[illegible] Office at 101 Univer[illegible] Blvd.

Denver, Colo[illegible] 80206

[illegible] 1-61 PRINTED IN U.S.A.

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
1/23/73	Weeks	120
		120
		220

January 23, 1973

Memorandum

To: The File

From: Chief, Office of Minerals Exploration

Subject: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana
Contract 2309

The minor change in language of Annex I of the subject contract noted in the Operator's letter of January 12, 1973, corrects the designation of Viking Exploration, Inc., to "a Colorado corporation authorized to do business in the State of Montana." This change has been initialled by the Operator and by me for the Government.

Harold Kirkemo

Harold Kirkemo

cc: Director's Reading File
Mineral Resources
OME File
OME Reading File
Branch of Financial Management
RAWeeks
HKirkemo

RAWeeks/gla 1-23-73

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 24 1973
INITIALS | CODE
Cec | 20 YW
Jr | 130
Rew | ~~A.W~~

January 22, 1973

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (gold)
Spotted Horse Mine, Inc.
Fergus County, Montana
Contract No. 2309

Dear Mr. Einarsen:

Enclosed is a three-month's supply of the Operator's Monthly voucher, Form 9-1648. The original and three copies of the completed report forms as well as the narrative, maps, assays, and all technical data, should be submitted for each month in which contract costs have been incurred. However, in the event that you do not wish to submit a voucher for any month, the narrative report for the work done in that month is required. Delay in processing can be avoided if reports are submitted promptly to this office. I am assuming that contract work will not start at the Spotted Horse mine for a few months.

Also enclosed are two copies of Standard Form 38, entitled "Notice of Nondiscrimination in Employment." In accordance with Exhibit B of your contract, you should complete one copy of Standard Form 38 and send it to any labor union that may be involved in your OME contract work and should post one copy in a conspicuous place available to employees or applicants for employment. The enclosed poster also should be exhibited in a conspicuous place available to both employees and applicants for employment. Please advise us when the OME contract work has started.

Sincerely,

W. P. Puffett
Field Officer, Region I

cc: DRF
OME

Puffett/at

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 22 1973

INITIALS	CODE
HK	120
Rew	CAM
	220

January 12, 1973

RECEIVED
JAN 16 1973
O. M. E.
SPOKANE, WASH.

Mr. Willard P. Puffett
Field Officer, Region I
U. S. Department of the Interior
Geological Survey
Office of Minerals Exploration
656 U. S. Court House
Spokane, Washington 99201

Re: ~~OME 6880~~-Gold
Spotted Horse Mine
Fergus County, Montana
Contract No. 2309

Dear Mr. Puffett,

Regarding your January 5 letter, I am enclosing herewith the original and two copies of the Exploration Contract (Short Form) No. 2309 dated December 19, 1972. We are retaining the executed Operator's Copy.

Please note that on Annex I, Viking is a Colorado corporation authorized to do business in the State of Montana, rather than a Montana corporation. We have made this minor change and have initialled same on each of the returned copies.

I certainly want to express our gratification in the confidence shown in Viking by the granting of this exploration loan. I trust that it will result in the discovery of substantial gold reserves, and will help the economy of the Lewistown, Montana area.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

Enclosures
CAE:rk
cc: Mr. Larry C. Hoffman
Route 3, Box 39
Lewistown, Montana 59457

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
JAN 8 1973
INITIALS CODE
Cac 120 M
430
HK 120
Rwd 130

January 5, 1973

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME 6880-Gold
Spotted Horse Mine, Inc.
Fergus County, Montana
Contract No. 2309

Dear Mr. Einarsen:

Enclosed are the original and three copies of a proposed contract to explore the Spotted Horse mine. The contract consists of MME Form 51 (five pages), Annex I (two pages), a Performance Bond, Exhibit A (two pages), Exhibit B (one page), Exhibit B-1 (one page), and two maps (Figures 1 and 2). All copies of the contract have been signed for the Government. The starting date was inserted after consultation with Mr. Larry Hoffman.

If the proposed contract is satisfactory to you, please sign all copies. Note that Article 6(e) on page 3 of the contract has been lined out and initialed by the Government. Please initial this deletion on all contract copies. Retain that copy marked "Operator's Copy" and return the other signed contracts to me.

The 5¾ percent interest accrues from the dates on which individual payments are made by the Government and like the principal is repayable from royalty on production.

If any part of the proposed contract does not have your approval, the original and all copies should be returned to me with the proposed changes for consideration.

Sincerely,

Willard P. Puffett
Field Officer, Region I

Enclosures

PuffeBE/at
cc:

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
12/13/72	Kirkemo	
12/13/72	Weeth	
12/14/72	MRMudge	
12/15	J.P. Albers	
12/19	Nenen	

JAN 2 1973

Memorandum

To: Field Officer, Region I

From: Chief, Office of Minerals Exploration

Subject: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Enclosed are the original and three copies of a proposed contract to explore the Spotted Horse mine. The contract consists of MME Form 51 (five pages), Annex I (two pages), a Performance Bond, Exhibit A (two pages), Exhibit B (one page), Exhibit B-1 (one page), and two maps (Figures 1 and 2). All copies of the contract have been signed for the Government. You should insert the date for commencement of the work. An extra copy of the contract is enclosed for field use.

If the proposed contract is satisfactory to you and the Applicant, all four copies should be signed by an authorized representative of the Applicant. Note also that Article 6(e) on page 3 of the contract has been lined out and initialed by the Government on the advice of the Associate Solicitor for the reason explained in the enclosed copy of a memorandum dated December 8, 1972 to this office. Please ask the Applicant to initial on each copy the deletion of this article. When signed and initialed, please distribute the copies as usual.

Please advise the Applicant that the 8½ percent interest accrues from the dates on which individual payments are made by the Government and like the principal is repayable from royalty on production.

If any part of the proposed contract does not have your approval or that of the Applicant, the original and all copies should be returned to this office together with the proposed changes for consideration.

Harold Kirkemo

Enclosure

cc: Director's reading file
Mineral Resources
OME reading file

Mr. Kirkemo
130
HKirkemo/cac 12/13/72

RWeeks:cac
DRAFT 11/24/72

Received
General Legal
Services 12-1-72

MME Form 51
July 1965

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
U. S. Geological Survey

EXPLORATION CONTRACT
(Short Form)

Docket	Commodity	Contract No.	County	State
OME-6880	Gold		Fergus	Montana

It is agreed _____ (Date), between the United States of America, acting through the Department of the Interior, U. S. Geological Survey, hereinafter called the "Government," and

Viking Exploration, Inc., a corporation

_____,

whose mailing address is 820 Denver Center Bldg., 1776 Lincoln Street, Denver, Colorado 80203
hereinafter called the "Operator," as follows:

ARTICLE I. Authority and scope.--(a) This contract, entered into under the authority of Public Law 701, 85th Cong., 2d sess. (72 Stat. 700; 30 U.S.C. § 641 - 646), consists of this form, the attached Annex I (land description), Exhibit A (work and costs), and the maps and documents listed. The work is a search for new or unexplored deposits of the commodity designated above. The Operator shall begin the work on or before _____ (Date), and, subject to the provisions of Article 7 and Exhibit A, shall complete the work within 18 months from the date of the contract.

(b) The description of the work and the fixed cost for each unit of work to be performed (per foot of drilling, per foot of drifting, per hour of operations, etc.) are hereby agreed upon as specified in Exhibit A. The estimated total cost of the work is $ 28,500.00 The Government will contribute ~~30~~ 75 percent of the total fixed unit costs of the work performed, not in excess of $ 21,375.00 in accordance with the provisions of Articles 4 and 5.

(c) Interest computation.--Simple interest at the rate of _____ percent shall accrue from the dates Federal funds are made available until the period specified for payment of royalty expires, or until the amount of Federal funds contributed is fully repaid with interest.

(d) The Operator shall not transfer or assign this contract or any right or obligation thereunder without the written consent of the Government.

ARTICLE 2. Operator's rights in land.--(a) The Operator represents and undertakes that Annex I correctly describes the land which is the subject of this contract and the nature of the Operator's right of property and possession therein (whether as owner, lessee, or otherwise), and that such right, title, or interest is subject only to the following claims, liens, or encumbrances:

See Annex I

(b) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above and (if the Operator does not hold the legal title) the Lien Agreement of any holder of the legal title of the land (lessor, seller, optionor, etc.) are attached as follows:

See Annex I

(c) The Operator shall preserve and maintain his right, title, or interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. The Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a royalty on production and liens for the payment thereof. Two true copies of such instrument shall be furnished to the Government. If the Government's rights to royalty as provided in Article 6 have been terminated, the provisions of this paragraph (c) shall become inapplicable.

ARTICLE 3. Performance of the work.--(a) Operator's responsibility.--The work shall be performed diligently, efficiently, in a workmanlike manner in accordance with good mining standards, and in compliance with State laws governing health, safety, and liability insurance covering employment. The Operator shall provide suitable and adequate equipment, facilities, materials, supplies, and labor to complete the work as specified in Article 1(a).

(b) Government may inspect.--The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract and production operations during the period that royalty is payable to the Government. The Operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 4. Contribution by the Government.--The Government will make its contribution on the basis of the monthly vouchers referred to in Article 5(b), but all payments by the Government are provisional only, subject to audit. Until the account between the Operator and the Government is finally audited and settled and the Operator's final report has been received, the Government may withhold such sums as are necessary to protect its interests. To the extent that amounts in excess of fixed unit costs or in excess of the estimated total cost may be necessary for the performance of the work, the Operator shall incur and pay such amounts for his own account without contribution by the Government. The Government will not contribute to the cost of any work performed prior to the date of this contract. The Government may make payments for the account of the Operator directly to independent contractors and suppliers rather than to the Operator.

ARTICLE 5. Reports, accounts, audits.--(a) Operator's records.--The Operator shall keep suitable records and accounts of the units of work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine all pertinent books, documents, papers, and records of the Operator.

(b) Monthly reports.--The Operator shall provide the Government with four copies of monthly reports in three sections as follows:

(1) Operator's Monthly Voucher claiming costs for work performed;

(2) Operator's Progress Report showing the number of units of the various types of work performed; and

(3) a narrative report of the work performed during the reporting period, including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground.

(Forms for reporting under (1) and (2) above will be provided by the Government.)

(c) Final report.--Upon completion of the work or termination of the Government's obligation to contribute to costs, the Operator shall furnish the Government with three copies of a final report (in addition to the final monthly report). This final report shall include a geological and engineering evaluation of the results of the work performed under the contract with an estimate of the ore reserves resulting from such work, complete assay data, adequate geological and engineering maps or sketches, and a summary of the work performed and the unit costs thereof.

(d) Report of sales.--The Operator shall provide the Government with suitable accounting and documentary evidence covering all production to which the Government's royalty relates, such as two copies of smelter or concentrator settlement sheets and certified accounts of production and sale or other disposition of production.

(e) Compliance with requirements.--If the Government determines that any of the Operator's reports, records, or accounts are insufficient or incomplete, or if the Operator fails to make them, the Government may procure the preparation or completion of same with suitable attachments as an expense of the work to which the Operator shall contribute. The Government may withhold approval and payment of any vouchers relating to insufficient or incomplete reports, records, or accounts.

ARTICLE 6. Repayment by Operator.--(a) Certification.--If the Government considers that mineral or metal production from the land covered by the contract may be possible as a result of the exploration work, it shall so certify in writing to the Operator at any time not later than six months after a sufficient final report and final accounting (see Article 5) have been furnished.

(b) Royalty on production.--The Operator, whether or not the producer (for example, if the Operator either transfers or does not retain his interest in the land), shall pay to the Government a royalty on all minerals and metals mined or produced from the land as follows:

(1) irrespective of any certification of possible production--from the date of the contract until the lapse of the time within which the Government may issue such certification or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first; or

(2) if the Government issues a certification of possible production--for a period of ten years from the date of the contract or until the total net amount contributed by the Government is fully repaid with interest, whichever occurs first.

(c) Payment of royalty.--(1) The Government's royalty shall be five percent of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrate, metal, or equivalent), at the point of delivery (the f.o.b. point); except, that charges of the buyer arising in the regular course of business and shown as deductions on the buyer's settlement sheets (such as treatment processes performed by the buyer, sampling and assaying to determine the value of the production sold, and freight payable by the buyer to a carrier (not the Operator or producer)), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. No costs of the Operator or producer are deductible in arriving at the "gross proceeds" as that term is here used.

The term "treatment processes" means those processes (such as milling, concentrating, smelting, refining, or equivalent, but excluding fabricating or manufacturing) applied to the crude ore or other production after it is extracted from the ground to put it into a commercially marketable form.

(2) The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be.

(d) Unsold production.--If any production (ore, concentrate, metal, or equivalent), after the lapse of six months from the date the ore was extracted from the ground, remains neither sold nor used in integrated manufacturing or fabricating operations (for instance if it is stockpiled), the Government, at its option, as long as it so remains, may require the computation and payment of its royalty on the value of such production in the form (ore, concentrate, metal, or equivalent) it is in when the Government elects to require computation and payment. If any production is used in integrated manufacturing or fabricating operations before the Government makes its election, the Government's royalty on such production shall be computed on the value thereof in the form in which and at the time it is so used. "Value" as here used means what is or would be gross income from mining operations for percentage depletion purposes in Federal income tax determination, or the market value, whichever is greater.

~~(e) Lien for payment.--To secure the payment of royalty (see Article 6(b)), the Operator hereby grants to the Government a lien upon his interest in the land and upon any production of minerals and metals therefrom until the royalty claim is extinguished by lapse of time or is fully paid.~~

(f) Notice to purchasers.--The Operator or producer shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Government, and this estimate shall be final and binding upon the Operator or producer.

(g) No obligation to produce.--Nothing in this contract shall be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

(h) Government not obligated to buy.--Nothing in this contract shall be construed as imposing any obligation on the Government to purchase any minerals and metals mined or produced from the land.

ARTICLE 7. Termination of the Government's Obligations.--(a) If the Government determines that operations at any time have failed to achieve anticipated results and further work is not justified, the Government may give the Operator written notice thereof, and thereupon:

(1) the Government shall be free of all obligation to pay on account of units of work not then performed; and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

(b) If the Government determines that the Operator is in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon:

(1) the Government shall be relieved of all obligation to pay on account of units of work not performed when the notice was given, and

(2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to final accounting and reporting.

The Government may also avail itself of any other remedy the law may provide for breach of contract, including the right to rescind the contract and to demand repayment of all moneys contributed by the Government under the contract.

(c) The giving of any notice by the Government under the provisions of this Article 7 shall not affect the Government's rights as provided for in the contract with respect to royalty and liens to secure the payment thereof, and such rights shall be fully preserved.

(d) The determinations of the Government are subject to appeal under Article 11.

ARTICLE 8. Notices to be given by the Government may be delivered to the Operator or may be sent by certified mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 9. Officials not to benefit.--No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 10. Nondiscrimination in Employment.--The provisions respecting nondiscrimination in employment which are required by section 301 of Executive Order 10925, dated March 6, 1961, as amended and supplemented, are attached hereto as Exhibit B-1 and are hereby incorporated in and made a part of this contract.

ARTICLE 11. Disputes.--Any dispute arising under this contract which is not disposed of by agreement shall be decided by the Director, U. S. Geological Survey, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Operator. The decision of the Director, U S. Geological Survey, shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Operator mails or otherwise furnishes to the Director, U. S. Geological Survey, a written appeal addressed to the Secretary of the Interior. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence.

The term "Director, U. S. Geological Survey," as used herein includes his duly authorized representative.

ARTICLE 12. Work Hours Act of 1962 - Overtime Compensation.--This contract, to the extent that it is of a character specified in the Work Hours Act of 1962 (Public Law 87-581, 76 Stat. 357-360) and is not covered by the Walsh-Healey Public Contracts Act (41 U.S.C. 35-45), is subject to the following provisions and to all other provisions and exceptions of said Work Hours Act of 1962.

(a) Overtime requirements.--No Operator or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any workweek unless such laborer or mechanic receives compensation at a rate of not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any such calendar day or in excess of forty hours in any such workweek, as the case may be.

(b) Violations; liability for unpaid wages; liquidated damages.--In the event of any violation of the clause set forth in subparagraph (a) of this paragraph, the Operator and any subcontractor responsible therefor shall be liable to any affected employee for his unpaid wages. In addition, such Operator and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the clause set forth in subparagraph (a) of this paragraph, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (a) of this paragraph.

(c) Withholding for unpaid wages and liquidated damages.--The U. S. Geological Survey may withhold or cause to be withheld, from any moneys payable on account of work performed by the Operator or subcontractor, such sums as may administratively be determined to be necessary to satisfy any liabilities of such Operator or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (b) of this paragraph.

ARTICLE 13. Copeland (Anti-Kickback) Act--Nonrebate of wages.--The regulations of the Secretary of Labor applicable to contractors and subcontractors (29 CFR, Part 3), made pursuant to the Copeland Act, as amended (40 U. S. C. 276c) and to aid in the enforcement of the Anti-Kickback Act (18 U. S. C. 874) are made a part of this contract by reference. The Operator will comply with these regulations and any amendments or modifications thereof and will be responsible for the submission of affidavits required of independent contractors thereunder. The foregoing shall apply except as the Secretary of Labor may specifically provide for reasonable limitations, variations, tolerances, and exemptions.

ARTICLE 14. Changes and added provisions.--

The Government shall not make or be obligated to make any contribution to the costs of work performed under this contract until the Operator has submitted an adequate performance bond in the penal sum of $21,375.00 and the bond has been approved by the Government.

Executed in ~~duplicate~~ quadruplicate the day and year first above written.

Viking Exploration, Inc.
(Operator)

By _____

Title _____

THE UNITED STATES OF AMERICA

By _____
Director, U. S. Geological Survey

I, _____ (Name), certify that I am the _____ secretary of the corporation named as Operator herein; that _____ (Name), who signed this contract on behalf of the Operator, was then _____ (Title) of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

_____

[CORPORATE SEAL]

EXPLORATION CONTRACT
VIKING EXPLORATION, INC.
OME-6880

ANNEX I

The land, including all rights pertaining thereto, referred to in Article 2 of the Contract consists of two (2) patented lode mining claims and five (5) unpatented lode mining claims, all in Sec. 5, T. 16N., R. 20E., Fergus County, Montana, as shown on Figure 1 entitled "Property Map - Spotted Horse Mine, Fergus County, Montana" attached hereto and made a part hereof. The patented claims are:

Name	Survey No.	Patent No.
Spotted Horse	2361	16116
Kentucky Favorite	3314	19189

The unpatented claims are recorded in the Records of the County Clerk, Fergus County, Lewistown, Montana as follows:

Name	Lode Locations Book No.	Page
Old Murph	17	238
Asphidity	17	237
George H.	17	236
Puffrey	17	235
Deefy	17	318, 320

The two patented lode mining claims are owned by First Trust Company of Montana, Great Falls, Montana, and are leased to L. C. Hoffman doing business as Blue Range Mining Company, until May 31, 1976. The Blue Range Mining Company is also the locator of the Old Murph, Asphidity, George H.,

and Puffrey unpatented lode mining claims. These six mining claims have been assigned to Viking Exploration, Inc., a Montana corporation, by L. C. Hoffman under terms of a Mining Sub-Lease and Option dated February 28, 1972.

Viking Exploration, Inc. is in possession of the Deefy lode mining claim by right of location.

A Performance Bond in lieu of Lien and Subordination Agreements in the amount of $21,375.00, will be furnished by the Operator, and attached and made part hereof.

In the event the Operator or any subsidiary thereof at any time during the period expiring ten years from the date of this contract acquires any right, title, or interest in or to any land situated within 600 feet of the mining claims shown on Figure 1 previously referred to, the Operator shall promptly notify the Government of such acquisition and furnish a description of the land and the nature of the right, title, or interest acquired, maps and such other data as the Government shall require, and such land automatically shall become subject to the provisions of this Contract as of the date of acquisition.

EXPLORATION CONTRACT
VIKING EXPLORATION, INC.
OME-6880

EXHIBIT A

The purpose of this project is to explore for gold ore by drifting and crosscutting in Carboniferous limestone near its contact with intrusive syenite porphyry and rhyolite porphyry on the 4 and 6 levels of the Spotted Horse mine.

GENERAL PROVISIONS

The Operator shall provide such supervision, labor, and technical services as may be required to perform the work in a satisfactory manner.

The location, direction, and extent of each work item shall be subject to Government approval.

No work under this contract shall be performed within 100 feet of the outer boundary of the project area.

All drifts and crosscuts shall be not less than 5 by 7 feet in cross section and shall be adequately supported by timber where necessary using standard 8-by 8-inch drift sets or equivalent round timber.

Mine rails shall be not less than 16-pound size, air lines not less than 2-inch diameter, water lines not less than 1-inch diameter, and vent lines not less than 8-inch diameter.

All significantly mineralized areas traversed by the exploration work shall be sampled. A representative bulk sample shall be collected from each round broken in mineralized rock. Channel samples shall be cut normal to the trends of the deposits at intervals of not more than 5 feet.

All samples, from whatever source, shall be split as necessary and one split assayed for gold and silver. The Operator shall store one split

of each sample in a suitable container properly identified as to source and location for Government inspection and possible use. With prior Government approval, the Operator may dispose of the stored samples.

True copies of assay certificates, and maps or sketches showing the work completed during the reporting period, the location, width, and assay value of all samples taken, and the geological formations and structures traversed by the drifts and crosscuts shall be furnished monthly to the Government.

The Operator shall provide such supervision, labor, and technical services as may be required to complete the work in a satisfactory manner.

The Operator shall perform all work in such a manner as to maintain the quality of the environment in the vicinity of the project. Waste mineral materials generated in the process of the exploration work shall be stored in a safe manner so as not to degrade the existing quality of adjacent land, air, and streams.

DESCRIPTION OF THE WORK

The proposed work is shown on Figure 2 - entitled "Proposed Exploration, Spotted Horse Mine, Fergus County, Montana" attached hereto and made part hereof.

Starting approximately 30 feet northwesterly from the Spotted Horse Shaft on Level 4, drift north-northeasterly to the contact between the limestone and the rhyolite porphyry. It is anticipated that the work will traverse a zone of brecciated limestone and porphyry. Maximum length of drift is 80 feet.

Starting approximately 75 feet due south from the Spotted Horse Shaft on the 6 level, drift southeasterly along the limestone-syenite porphyry contact

for 300 feet to explore for the downward extensions of the Bonanza and Glory Hole veins.

ESTIMATED COST OF THE WORK

Fixed Unit Cost 1/

Drifting and crosscutting 380 feet at $75/ft.	$28,500.00
Government participation at 75 percent	21,375.00

1/ The unit cost includes all costs of labor, materials, equipment purchased, supervision, insurance, assays, mileage, and office expense. The Government retains no equity in any of the equipment or materials used.

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

December 20, 1972

RECEIVED
DEC 26 1972
O. M. E.
SPOKANE, WASH

Mr. Willard P. Puffett
Field Officer, Region I
Office of Minerals Exploration,
U. S. Geological Survey
656 U. S. Court House
Spokane, Washington 99201

Re: OME 6880 (Gold)
Spotted Horse Mine
Fergus County, Montana

OFFICIAL COPY
O. M. E.
RECEIVED
DEC 29 1972

INITIALS	CODE
Cee	120
Rew	6-4
HK	120

Dear Mr. Puffett,

Responding to Mr. Kirkemo's telephone call yesterday, we are enclosing the original Form 25 Performance Bond for the work we are to perform under the subject OME loan contract, which is to be dated December 19, 1972. The date for commencement of the work to be performed is to be determined by Larry C. Hoffman, and I understand that he will advise you of this date by telephone.

The bond is dated December 19, 1972 with Travelers Indemnity as surety and is for the sum of $21,375. We trust that this is satisfactory with you. I am sending Mr. Kirkemo and Mr. Hoffman copies of the bond for their information.

I would like to take this opportunity to wish you a very happy Christmas and pleasant holidays, as well as all good wishes for the New Year.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enc.
cc w/enc. Mr. Harold Kirkemo, Chief,
OME - Washington, D. C.;

Mr. Larry C. Hoffman, Route 3,
Box 39, Lewistown, Mont. 59457

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

ORIGINAL COPY
O. M. E.
RECEIVED
DEC 26 1972

INITIALS	CODE
Cac	120
HK	170
Raw	BU

December 20, 1972

Mr. Willard P. Puffett
Field Officer, Region I
Office of Minerals Exploration,
U. S. Geological Survey
656 U. S. Court House
Spokane, Washington 99201

Re: OME 6880 (Gold)
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Puffett,

Responding to Mr. Kirkemo's telephone call yesterday, we are enclosing the original Form 25 Performance Bond for the work we are to perform under the subject OME loan contract, which is to be dated December 19, 1972. The date for commencement of the work to be performed is to be determined by Larry C. Hoffman, and I understand that he will advise you of this date by telephone.

The bond is dated December 19, 1972 with Travelers Indemnity as surety and is for the sum of $21,375. We trust that this is satisfactory with you. I am sending Mr. Kirkemo and Mr. Hoffman copies of the bond for their information.

I would like to take this opportunity to wish you a very happy Christmas and pleasant holidays, as well as all good wishes for the New Year.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enc.
cc w/enc. Mr. Harold Kirkemo, Chief,
OME - Washington, D. C.;

Mr. Larry C. Hoffman, Route 3,
Box 39, Lewistown, Mont. 59457

United States Department of the Interior

OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

DEC 8 1972

Memorandum

To: Chief, Office of Minerals Exploration

From: Associate Solicitor--General Legal Services

Subject: Viking Exploration, Inc.
OME-6880 (Gold)
Fergus, Montana

We have reviewed the subject contract and wish to call your attention to the following item.

The Spotted Horse and Kentucky Favorite patented lode claims are owned by the First Trust Company of Montana and leased to L. C. Hoffman, d/b/a Blue Range Mining Company, who has in turn assigned his lease to the Operator under a sublease and option dated February 28, 1972. Article IX of the lease to Hoffman from the Bank provides the lessee "[s]hall keep said mine and mining property free from liens or encumbrances of any kind and nature . . .".

As you know Article 6(e) of the proposed exploration contract (MME Form 51), provides specifically that the Operator "grants to the Government a lien upon his interest in the land upon the production of minerals and metals therefrom."

An assignee obtains only the rights and title of his assignor by virtue of an assignment, and is subject to the same limitations and restrictions imposed upon the assignor. Therefore, since Hoffman is legally required to keep the property free from liens and encumbrances Viking is likewise subject to this restriction as assignee of Hoffman's lease. For this reason in our opinion Viking and Hoffman would technically be in breach of Hoffman's lease with the Bank upon execution of the exploration contract. To avoid placing the Corporation and Hoffman in this position, we have revised the contract by lining out Article 6(e). This change should be initialed by the Operator and the Government. The Government's interest will be protected by the performance bond to be submitted by Viking.

If Viking exercises the option to purchase the Spotted Horse and Kentucky Favorite claims prior to the termination or expiration of the exploration contract, the Government could agree to cancellation of the bond as to those claims provided Article 6(e) is reinstated.

C. Brewster Chapman Jr.

C. Brewster Chapman
Associate Solicitor
General Legal Services

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

December 7, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
DEC 12 1972
INITIALS | CODE
Cal 120 M
~~120~~
HK 124
Ray ~~B4~~

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Charles A. Einarsen
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME 6880-gold
Spotted Horse Mine, Inc.
Fergus County, Montana

Dear Mr. Einarsen:

Enclosed are the 1"=40' maps of the surface plus the 1, 2, 3, 4, 5, 6, and 7 levels of the Spotted Horse Mine and the bound copy of the Spotted Horse Mine Exploration program. You asked that these be returned to you.

I have submitted my report to Washington and will not be needing the enclosed material for a while at least. Undoubtedly Mr. Hoffman will be able to get me the report or copies of the maps at a later date if I need them.

Sincerely,

Willard P. Puffett
Field Officer, Region I

Enclosures

cc: DRF
OMR

WPuffett/at

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

November 24, 1972

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

COPY
O. ...
RECEIVED
NOV 28 1972

INITIALS	CODE
Cae	120
	~~130~~
HK	~~120~~
Paul	B-10

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Kirkemo:

Thank you for your letter of November 22, 1972, wherein you advise that you are preparing a contract in accordance with costs submitted in Mr. Hoffman's October 27 letter to Mr. Puffett.

I am enclosing herewith two executed copies of Exhibit B-1, Certification of Non-Segregated Facilities, which I understand you will include in the Government's and Operator's copies of the proposed contract.

We appreciate your calling to our attention the item covered in your paragraph 4. Mr. Hoffman was forwarded a copy of your August 17 letter and accordingly is familiar with the problem you outlined. I believe he has taken the necessary steps to file an additional claim on the area you mention, however, since it is not involved directly in the proposed exploration on the 4th and 6th Levels, I trust that whether we are able or not able to get a claim would not be material insofar as the granting of the OME loan is concerned.

Per your paragraph 3, we will delay preparation of the performance bond until receipt of the contract from your office.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enc.
cc: Mr. Larry C. Hoffman
Rt.3, Box 39, Lewistown, Mont. 59457
Mr. Willard P. Puffett, OME-
Spokane, Washington

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
11/22/72		120
	Weeks	
		220

November 22, 1972

AIRMAIL

Mr. Charles A. Einarsen
President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Einarsen:

The Field Officer, Region I, Office of Minerals Exploration, has completed his report and recommendations on your application for financial assistance to explore the Spotted Horse mine. A proposed contract is now being prepared that will reflect the approximate costs submitted in L. C. Hoffman's letter of October 27, 1972, to Mr. Puffett.

As mentioned in the enclosure to our letter of August 17, 1972, all OME contracts now require certification of nonsegregated facilities from the Operator on projects exceeding $10,000. Please execute the enclosed two copies of Exhibit B-1, "Certificate of Nonsegregated Facilities," and return both to this office for inclusion in the Government's and Operator's copies of the proposed contract.

Three copies of a Performance Bond, Standard Form 25, are also enclosed for later execution. Two completed copies will be returned to this office for inclusion in the contract. A bond in the penal sum of $21,375.00 should be furnished by Viking Exploration, Inc., as soonaas the proposed contract has been prepared, the date and contract number determined. We will inform you as soon as these data are available. Do not execute the bond until this information is furnished. The surety company, The Travelers Insurance Company, mentioned in Mr. Strand's letter of September 5, 1972 (enclosed with your letter of September 6, 1972), is on the list of Government-approved sureties for such bonds.

We mentioned in our letter of August 17, 1972, that there is a small strip of unclaimed ground located between the Spotted Horse and Kentucky Favorite patented claims. Careful inspection of the location notice of the Old Murph claim indicates that its southeastern sideline would establish possession of the northwesternmost 100 feet or so of the strip, but no claim covers the southeastern part. As stated in our letter of September 12, 1972, this land is not involved directly in the proposed exploration on the 4 and 6 level. It would, however, be traversed by other projects outlined in your original proposal, especially if projects were directed northeastward from the Spotted Horse shaft toward the Kentucky Favorite claim. You should consider establishing claim rights to this small tract for your own interests.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

Enclosures

cc: Director's Reading File
Mineral Resources
OME Docket
OME Reading File
OME Region I
Mr. Weeks
Mr. Kirkemo

11/22/72

United States Department of the Interior

GEOLOGICAL SURVEY

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

November 7, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
NOV 13 1972
INITIALS CODE
Cac 120 m
gla 120
120
Rew BW

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Application report and recommendation
OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

INTRODUCTION

On Sept. 5, 1972, Viking Exploration, Inc. submitted an application for OME assistance to explore extensions of the old Spotted Horse mine by drifting on the 4 and the 6 levels, which are serviced from a vertical shaft. The applicant estimates the proposed work will cost $38,077.10. I did not schedule a field examination as I had visited the mine in May 1972 while on an annual inspection trip of certified projects. Mr. Larry Hoffman was at the mine and conducted me through the workings and discussed the proposed exploration. I spent about 4 hours at the property and collected several specimens, two of which were assayed for gold and silver.

The work as proposed extended outside the applicant's property and it has been necessary for him to stake a new claim since submitting his application. I have also corresponded with the applicant several times to discuss several aspects of the project's costs.

RECOMMENDATION

I recommend that a unit-cost contract be awarded to Viking Exploration, Inc. to explore for gold ore in the Spotted Horse mine by drifting 80 feet on the 4 level and 300 feet on the 6 level. Unit-costs, that encompass all expenses including collar costs, are to be $75.00 per foot. Total contract cost is $28,500 of which the Government's share is 75 percent or $21,375.00.

FIELD APPL
REPORT

APPLICANT

Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Officers include:

President: Charles A. Einarsen, 820 Denver Center Bldg., Denver, Colorado

Vice President-Exploration: Theodore D. Sheldon, Denver Center Building

Secretary-Treasurer: F. M. Stevenson, 1200 Security Life Building, Denver, Colorado

The project engineer is Larry C. Hoffman, Rt. 3, Box 39, Lewistown, Montana 59457

PROPERTY

The applicant's property consists of five unpatented and two patented claims (Figure 1-Plan maps of surface, 1, 4, and 6 levels, Spotted Horse Mine, Sec. 5, T. 16 N., R. 20 E., Fergus County, Montana). The two patented claims are as follows:

Claim	Survey No.	Patent No.
Kentucky Favorite	3314	19189
Spotted Horse	2361 (Lot No. 42)	16116

These claims are owned by First Trust Company of Montana, Great Falls, Montana, and are leased to L. C. Hoffman, d/b/a Blue Range Mining Company by an agreement dated May 14, 1968, and extended by additional agreements until May 31, 1976. This lease was assigned to Viking Exploration, Inc. under terms of a mining Sub-Lease and Option dated Feb. 28, 1972. The First Trust Company of Montana refused to sign MME Form 52, the Lien and Subordinate Agreements. Viking Exploration, Inc., in a letter dated Sept. 6, 1972, submitted a copy of a letter from Strand-Nordstrom and Co., Insurors, dated Sept. 5, 1972, which indicates that Viking Exploration, Inc. can furnish a performance bond if an OME contract is offered.

The five unpatented claims are recorded in the County Clerk's Office, Lewistown, Montana, as follows:

Claim	Book	Page
Old Murph	17	238
Asphidity	17	237
George H	17	236
Puffrey	17	235
Deefy	17	318
	amended on	320

The Deefy claim was located for Viking Exploration, Inc. The other four claims were located for Blue Range Mining Company whose interest was assigned to Viking Exploration, Inc. under the terms of the Mining Sub-Lease and Option dated Feb. 28, 1972. No MME forms 52, Lien and Subordination Agreements, have been signed by Larry C. Hoffman for the four claims that were located for Blue Range Mining Company. The proposed project work will not come close to the Blue Range Mining Company's claims, and hence these claims should not be included as part of the property in the event an OME contract is awarded to Viking Exploration, Inc.

11-21-72 Form 52 not needed if Performance Bond is furnished. RGW.

The Spotted Horse is an old mine having first been worked in the early 1880's (Robertson, A. F., 1950, p. 18), but has been idle since the mid-1930's. A vertical shaft connects to 8 levels, the lowest being flooded now. Access to the shaft is through an adit--the first level--because the shaft above the adit is caved. Some production was obtained in early days from several surface cuts (figure 1). The surface plant consists of a few dilapidated buildings and a cabin. The tool shed at the adit portal is usable and an assay office is in a 12' x 36' frame building.

L. C. Hoffman has rehabilitated the underground workings sufficiently to permit examination of all but the lowest level. The shaft had not been repaired in May 1972, and access to lower workings was by ladders constructed from cement-reinforcing steel rods. The underground workings stand well without timber support. Rehabilitation work cleared the workings of sloughed wall rock and slime from standing water. Water above the lowest level is not a problem but reportedly there is a heavy flow of water on the 8 level.

The application lists a large quantity of material and equipment at the mine that can be used in an exploration project.

LOCATION AND ACCESSIBILITY

The applicant's property is in the NE¼ sec. 5, T. 16 N., R. 20 E., Fergus County, Montana. The nearest town of any size is Lewistown, the county seat of Fergus County. To reach the Spotted Horse mine from Lewistown, drive north on U. S. highway 191 for about 11 miles, then turn east on the Maiden road for about 10 miles to end of pavement; turn at Maiden Canyon Resource Conservation Area sign and follow road to old cement dam that is near the mine portal. Total distance from Lewistown, Montana, is about 22 miles.

The applicant reports the property is accessible from about May 1 to December 15. The road to the mine is not passable during the winter once it has been allowed to drift closed.

HISTORY AND PRODUCTION

The Spotted Horse is an old mine, first being located in 1881, and worked intermittently until 1901. Production during this period was not recorded but has been estimated to be about 3 million dollars (Robertson, 1950, p. 19). The mine was idle until 1910, when James Breen of Spokane obtained it and leased it to other interests. The application lists production from 1909 until August 1935 that total 13,274.6 ounces of gold from milled ore and 4,822 ounces from direct shipping ore. The silver content of the ore was generally less than the gold but Robertson (1950, p. 18) reports that about 15,000 ounces of silver were produced between 1909 and 1935.

The application details much of the history of the property. Many different companies attempted to operate the mine but only a few were successful. The mine maps indicate that much drifting was done in a rather aimless fashion. Several different mills have been erected on the property but none remain.

GEOLOGY

The ore at the Spotted Horse Mine occurs in brecciated rock near the contact between Carboniferous limestone and either rhyolite porphyry or syenite porphyry (figure 1). Conspicuous gangue minerals include fluorite, vanadium mica, and quartz. Ore minerals are free gold and tellurides. Good descriptions of the ore are given by Weed and Pirsson (1898, 590-594), and by the applicant. Other reports on the geology of the area and mine are by Corry (1933), Robertson (1950) and Wallace (1953).

The applicant's map of the mine area shows the presence of two limestones, one Carboniferous and the other Cambrian. The ore deposits are in the gently dipping Carboniferous limestone but none are in the Cambrian. Both limestones have been intruded by the syenite porphyry and rhyolite porphyry, parts of laccolithic masses characteristic of the region. The applicant's map indicates that the rhyolite porphyry is younger than the syenite porphyry.

Wallace (1953) described the petrology of the Judith Mountains but did not differentiate between Cambrian and Carboniferous limestone. He included the igneous rocks in the Gold Hill quartz monzonite porphyry.

Most of the known ore bodies on the Spotted Horse claim are in a crudely triangular-shaped area of Carboniferous limestone bounded on the north and west by rholite porphyry and on the northeast by syenite porphyry. The ore bodies are in brecciated rock along the steeply-dipping contact between the limestone and the igneous rocks and in brecciated zones entirely within the limestone or the rhyolite porphyry. The ore bodies are generally elongate parallel to the contact and the discovery vein ore shoot extends from the surface to the deepest levels of the mine. As shown on the applicant's map the ore bodies generally are less than 150 feet long and average less than 10 feet thick. Reportedly there were rich lenses as much as 30 feet across.

Ore specimens are generally limestone andrhyolite fragments cemented by quartz, fluorite, and green vanadium mica. Tiny rust-colored grains might be altered tellurides or hydrated pyrite. Native gold reportedly occurs within the fluorite. According to Weed and Pirsson (1898, p. 590), the ore "Sometimes is a rusty limonitic limestone, sometimes a dark brownish-gray to clear-gray limestone, rather crystalline, but otherwise not appearing altered, and showing here and there patches of red-purple fluorite with dull, greenish, soft, earthy flecks, which sometimes have a bronze-like color and which are an altered gold compound, probably a telluride. These spots, on treatment with intense heat and a flux, develop into beads of gold, and a specimen of the limestone, which has a dull, faint greenish tone, but otherwise shows no hint of the precious metal, will, on heating in a forge, come out spangled and glittering with beads and threads of gold. This is the character of the best and richest ore which has yet been found in the district, and the bonanza shoots of the Spotted Horse were composed of it."

All the reports on the mine indicate that locally some very rich ore occurred in the shoots. Some of the rich bodies of soft, decomposed gold telluride were taken out with a spoon and packed in small sacks (Weed and Pirsson, 1898, p. 588). The mill concentrates listed by the applicant ranged from less than an ounce to more than 70 ounces of gold per ton, and average 4.47 ounces gold per ton. Two samples of supposedly typical ore collected during the OME examination assayed 0.29 and 0.46 ounces gold per ton and 4.3 and 4.05 ounces silver per ton. These samples were of brecciated dark gray limestone with abundant green vanadium mica and purple fluorite.

Guides to ore are rather obscure. Brecciated rock is the common host rock but some breccia is barren. Most ore bodies are near to the limestone-porphyry contact, but some are distant from the contact, either in the limestone or the intrusive. There is no conspicuous aureole of altered rock surrounding the ore bodies.

The applicant states that drilling is not a good method for ore search because the ore zones are porous and drill recovery is poor and water-loss is a problem. Apparently the best way to explore for ore is to drift along limestone-intrusive contacts either above or below known ore bodies. Weed and Pirsson (1898, p. 597) remark "that on contacts of limestone with porphyry the best results have been obtained where the contact plane is inclined or hades, with the porphyry as the hanging wall."

APPLICANT'S PROPOSAL

The applicant proposed the following exploration program:

1. Rehabilitate necessary facilities and workings to the shaft sump (not part of OME contract).

2. Crosscut 80 feet on the 4 level to the limestone point.

3. Drift 300 feet southeasterly along the syenite porphyry-limestone contact to explore for down-dip extensions of the Bonanza and Glory Hole veins.

The applicant detailed the cost of the proposed work as follows:

Collaring cost:		
4 level	$ 514.39	
6 level	785.31	
Drifting and crosscutting:		
380 feet at $78.88/ft	29,974.40	
New Equipment	553.00	
Overhead	4,250.00	
Total:		$ 38,077.10
75% participation by OME		28,557.83

According to the above costs, the total cost per foot for crosscutting and drifting is $100.20.

APPRAISAL OF APPLICANT'S PROPOSAL

The justification for the applicant's proposal must rest with the data submitted by the applicant and from old reports. No ore remains in the known stoped areas and detailed mapping of the mine would require several days at least. The old reports and shipping records indicate that considerable ore was produced from the mine and there is no reason to doubt that the applicant's maps represent a generally accurate portrayal of the location and extent of the former ore bodies. There are difficulties in projecting known ore bodies between levels, particularly the Bonanza pipe between the 4 and 6 levels, and it may be that some correlations of ore bodies between different levels are wrong.

The Discovery vein or ore shoot has been mined from the surface to the 8 level, thus proving that at least one of the ore shoots is very persistent down-dip, and this is the justification for the drifting on the 6 level. It is to be hoped that both the Bonanza vein and the Glory Hole vein can be found by drifting along the limestone-syenite porphyry contact. The lowest level on which these two veins were mined was the 3 level, some 155 feet higher than the 6 level. Should the veins be found on the 6 level, several hundred tons of ore should be available for overhand stoping. The dimensions of the "veins" to be expected are somewhat modest, and the ore would have to be rich to justify the expense of exploration.

REVISED ESTIMATE OF PROPOSED PROJECT COSTS

I have corresponded with the applicant several times to clarify some of the items included in his cost estimates. He included a disproportionate number of supervisory personnel for keeping only two miners at the face. I suggested that he advance both levels concurrently using a total of at least 4 miners. He insisted that only inexperienced men would be available and it would be unwise to try to operate on two different levels, concurrently, at least until the men gained some experience.

The applicant submitted detailed costs regarding use and maintenance of the equipment he will be using as well as listing a large quantity of materials and supplies that are more than enough for the project. I have used his figures in the following tabulation where I believed the figures are justified. I have deleted some, particularly the charge of $7.14 for car transfer time differential in the hoisting costs, because I don't know what it means. No broken rock, unless it is ore, will be hoisted because there are open stopes underground where the development rock will be dumped. No provision is made for timbering in the following estimate because the applicant states that no timbering has been necessary except around the shaft and this should be included in his initial rehabilitation which is listed under "Collaring Costs."

It is estimated that there will be an average of 22 working days per month and an average daily advance of 4 feet. The miners will commute between the mine and Lewistown, Montana, daily in one vehicle, for a total round trip of 44 miles. Total length of time for the project is 100 working days or a maximum of 6 months.

Category (a) Independent Contracts - None

Category (b) Personal Services

Engineer $850/month + 18.3% insurance	$1,006/month
Hoistman $600/month +24.3% FICA	746/month
Tender $400/month +24.3% FICA	497/month
2 miners $1,000/month +24.3% FICA	1,243/month
	$3,492/month or $39.68/ft

Category (c) and (d) Operating materials and supplies and Operating equipment

Explosives, dynamite, caps, fuse	$8.90/ft
Pipe and fittings	0.83/ft
Bit and steel consumption	2.91
Compressor fuel, oil, and maintenance	2.54
Drill oil, hose, and maintenance	1.49
Mucking machine oil, hose, and maintenance	1.92
Car and track maintenance	0.86
Rail, hardware, and ties	1.99
Shaft maintenance	0.60

Hoist fuel, oil, and maintenance	5.00	
Small tools, etc.	0.50	
Total:		$ 27.54

Category (e) Initial rehabilitation and repairs

Applicant refers to this as collaring costs:

4 level	$ 512.00	
6 level	785.00	
Total:	$1,300.00	
Pro-rated over 380 feet of drift and crosscut:		$ 3.43/ft

Category (g) Miscellaneous

Office and accounting, $100/month for 6 months	600.00	
Gold/silver assays, 80 at $5.00/assay	400.00	
Mileage, 100 days at $4.40/day (44 miles round trip to mine from Lewistown, Montana at $0.12/mile)	528.00	
Total:	$1,528.00	4.02/ft
Total estimated per foot costs:		$74.67
say		$75.00

Total cost of project:

380 feet of drifting and crosscutting at $75/ft	$28,500.00
Government participation at 75 percent:	21,375.00

The above cost is very near the applicant's revised figure of $76.33 per foot listed in his letter of October 27, 1972.

JUSTIFICATION FOR PROJECT

The proposed project, using the unit-cost per foot for drifting as outlined above, will cost $28,500 and the Government's share of the cost is $21,375. If the Government is to be repaid from the 5 percent royalty on net smelter returns, there should be at least $430,000 worth of ore (net smelter) indicated by the work. The present price of gold is more than $60 per ounce and if one can assume that gold produced from the Spotted Horse mine can be sold for $60 an ounce, it would take a minimum of about 7,500 ounces of gold for the Government to recover its money from royalty payments.

If the exploration is successful in finding extensions of the two ore shoots on the 6 level and these are an average of 60 feet long and 5 feet thick, they will contain a combined tonnage of 50 tons per vertical foot. If they can be projected up to the 4th level, a distance of about 100 feet, the tonnage indicated above the 6 level will be 5,000. A downward projection of the same distance will double the tonnage of course. If the ore will average an ounce of gold per ton, the total indicated ore will contain 10,000 ounces, more than enough to repay the Government.

The objective for the work on the 4 level is less well-defined than that on the 6 level. A fair-sized ore shoot was mined a few feet below the 5 level and its upward extension is the objective of the 4 level crosscut. The geologic environment is the projected contact between the rhyolite porphyry and limestone that is also very near the contact between the limestone-syenite porphyry contact. Perhaps a small but rich ore shoot can be found in the area, but it is almost meaningless to try to estimate a value for it at this time.

SUMMARY AND CONCLUSION

Several small but rich ore shoots have been found in the Spotted Horse mine in brecciated rock near a limestone-porphyry contact. At least one has been mined from the surface to a depth of several hundred feet. Other known ore shoots might extend to depth and exploration for their down-dip extension is justified. If the work is successful, there is a fair chance that the Government can be repaid through royalties on the newly discovered gold.

ENVIRONMENTAL IMPACT STATEMENT

All of the proposed work will be underground. All broken rock, except that which is ore-bearing, will be dumped in old stopes underground and none will be dumped on the surface. There exist several surface cuts on the mine property but these will not be enlarged by any of the contract work. The mine is relatively dry and there is little likelihood that mine waters will be a source of pollution to nearby wells or streams. No personnel will be living at the mine and this will decrease the possibilities of damage to the existing environment from the proposed project.

REFERENCES CITED

Corry, A. V., 1933, Some gold deposits of Broadwater, Beaverhead, Phillips, and Fergus Counties, Montana: Montana Bur. Mines and Geology Mem. No. 10, 45 p.

Robertson, A. F., 1950, Mines and mineral deposits (except fuels) Fergus County, Montana: U. S. Bur. Mines Inf. Circ. 7544, 76 p.

Wallace, S. R., 1953, The petrology of the Judith Mountains, Fergus County, Montana: U. S. Geol. Survey open-file report, 189 p.

Weed, W. H., and Pirsson, L. V. 1898, Geology and mineral resources of the Judith Mountains of Montana: U. S. Geol. Survey 18th Annual Rpt., pt. 3, Economic Geology, pp. 437-616.

Willard P. Puffett

Willard P. Puffett

Enclosure: Figure 1 - Plan maps of surface, 1, 4, and 6 levels, Spotted Horse Mine, Sec. 5, T. 16 N., R. 20 E., Fergus County, Montana.

RECEIVED
OCT 31 1972
O.M.E.
SPOKANE, WASH.

Larry C. Hoffman
Viking Exploration, Inc.
Rt. 3 Bx. 39
Lewistown, MT 59457
Oct. 27, 1972

Mr. Willard Puffett
Office of Minerals Exploration
656 U. S. Court House
Spokane, Wash. 99201

Re; OME-6880 (gold)
Spotted Horse Mine
Fergus County, MT

Dear Mr. Puffett:

To clarify my previous letter, I believe the following is required:

Engineer	($850 + 18.3% employment costs)	= $1006/mo.	= $ 48.10/day
Hoistman	($600 + 24.3% " ")	= $ 746/mo.	= 33.90/day
Tender	($400 + 24.3% " ")	= $ 497/mo.	= 22.60/day
2 miners	($1000 + 24.3% " ")	= $1243/mo.	= 56.50/day
	TOTAL:		$161.10/day

equals $40.30/ft. @ 4 ft. advance/ day	$40.30/ft.
Materials & supplies	$21.44/ft.
Hoisting costs	$ 7.38/ft.
	$69.12/ft.
Your Misc. Costs	$ 7.21/ft.
TOTAL	$76.33/ft.

This would make the total cost of the proposed project $29,000 or a 75% interest to the government of $21,750, all figures to slide rule accuracy.

You will note that I have modified my labor cost figures, with some misgivings. I feel that the men can be hired at these average wages over the duration of the project, but a higher turnover risk is incurred. It has been my experience that many green hands, after a few weeks underground, tend to feel qualified for the higher wages they hear about at Butte or elsewhere. We will base this estimate on the hiring of local men with other incentives to remain in the area.

Considering that the government lien on this proposed project would cover the whole mine and not just the two target areas, I do not think it at all unreasonable to expect full repayment of an exploration loan, especially considering the past history of the property. Since all of the ore shoots worked in the past were high-grade, I think it is quite safe to assume similar grade under similar conditions.

Almost every geologist who has examined the prospect has agreed that it has a higher potential than most, both in the downward extensions of the known veins and in possible undiscovered ore shoots. There is no physical or theoretical evidence of bottoming at the lowest worked depths, and the same geologic conditions found in the ore shoots mined apparently exist in undeveloped areas of the mine, such as the proposed targets. I feel that the proposed targets have a potential of over 15,000 ounces of recoverable gold available to overhand stoping upon completion of development work on the proposed levels. This estimate is conservatively based on past performance of similar deposits, not only in the Spotted Horse, but in the two adjoining mines as well.

Sincerely yours,

L. C. Hoffman

L. C. Hoffman
Mining Projects Engineer

cc; Viking Denver

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

O. M.
RECEIVED
OCT 27 1972
INITIALS CODE
Cac 140m
~~120~~
HK ~~110~~
Ben HB.W

October 24, 1972

Mr. L. C. Hoffman
Viking Exploration, Inc.
Rt. 3, Box 39
Lewistown, Montana 59457

Re: OME-6800 (gold)
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Hoffman:

Thank you for your letter with revised location of the Deefy claim plus comments about per-unit cost for drifting on the 4 and 6 levels. It is my understanding that you believe the following is required:

Supervision: Engineer and Foreman ($1,700/month)	$ 77.47/day
Hoistman	34.81/day
Topman	34.81/day
Cage tender	34.81/day
2 miners	69.62/day
Total:	$251.32/day

At average advance of 4 feet per day:	$ 62.83/ft
Materials & supplies (from your figures)	21.44/ft
Hoisting costs (your figures)	7.38/ft
Total for labor, materials, and supplies	$ 91.65/ft

Miscellaneous costs (from my letter to you of Oct. 18, 1972)

Office, $100/month for 6 months	$ 600.00	
80 gold assays at $5.00/assay	400.00	
Mileage, 100 days at $4.40/day	440.00	
Collar costs: 4 level = $515.00 6 level = $785.00	1,300.00	
	$2,740.00 or	$ 7.21/ft

Total per unit cost for drifting: $ 98.86/ft.

The estimated total cost of the project your propose, using the above unit-cost figure, is $37,567.00. The Government's share, at 75 percent, would be $28,175.25. It is my understanding from reading your letter that you would not favorably consider any lesser unit costs than I've shown above.

Any project in which the Government participates should have a reasonable chance of discovering sufficient ore to repay the Government's cost. As our only source of reimbursement is the 5 percent royalty, it is necessary that we find at least $20 worth of ore (net smelter return) for every dollar spent. This, of course, is not always the case, and we have had several projects that were not successful. In the case of your project, however, I wonder if we can reasonably expect to indicate at least $600,000 worth of ore—the minimum required for royalty payment to the Government. The projected ore shoots are small and little is known about their gold content. You mention that the Bonanza contained about 20,000 tons averaging 3 ounces gold per ton. An ore body of this size and gold content would certainly be a worthy target for exploration, but I wonder if it is reasonable to expect such an ore body from your proposed work.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: Charles A. Einarsen

OME/w cy of inc. ltr
DRF

WPuffett/at

RECEIVED
OCT 24 1972
O.M.E.
SPOKANE WASH.

L. C. Hoffman
Viking Exploration, Inc.
Rt. 3 Bx 39
Lewistown, MT 59457

Mr. Willard Puffett
Field Officer, Region I
Office of Minerals Exploration
656 U. S. Court House
Spokane, Wash. 99201

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County MT

Dear Mr. Puffett:

Enclosed is a revised claim map of the Deefy claim in relation to the Spotted Horse claim. The claim is located structurally up dip from the proposed exploration targets, rather than vertically. However, the side line is still over 100 feet from the exploration area, projected on the vertical plane. On plotting this map I noticed that the bearing and distance from the BM to the NW corner were in error and should be corrected to 210 feet S80W.

As you may recall from your inspection trip, the Bonanza Pipe separates from the contact just above the fourth level and descends at an angle to the fifth level. It is then nearly vertical to the lowest level worked.

I am not in favor of running both levels concurrently, for several reasons. With green hands the risk of accident would be higher and the work output much lower with one supervisor trying to oversee two levels. For the work on the fourth level, a crew would not even be broken in before the job was finished, and if no new work was ready, they would have to be laid off. This would create a hardship for the men and give Viking a poor reputation for future hiring. Considering advance per unit of time/wages, there is no way a green crew could drive drift anywhere near $62.00/ft.

I would also much prefer to have a cage tender for car and material transfer, relieving the miners of this duty and resulting in faster advance. The tender would be utilized in maintenance during slack time, along with the hoistman. It is my opinion that the overall cost of the project would be lower if a tender was employed.

I feel that two miners running one heading at a time, with a hoisting engineer and topman, supervised by myself, would make the most economical and efficient crew for the proposed project. The miners could utilize slack time created in one heading by fumes, etc. to work on the other, the tender could aid in track laying, and otherwise help the miners, and with the hoist operator could perform maintenance and tend the power house. My time not directly supervising would be utilized for specialized maintenance, reports, obtaining supplies, assaying, etc. From past experience I am quite sure that this would result in the most efficiency per labor dollar.

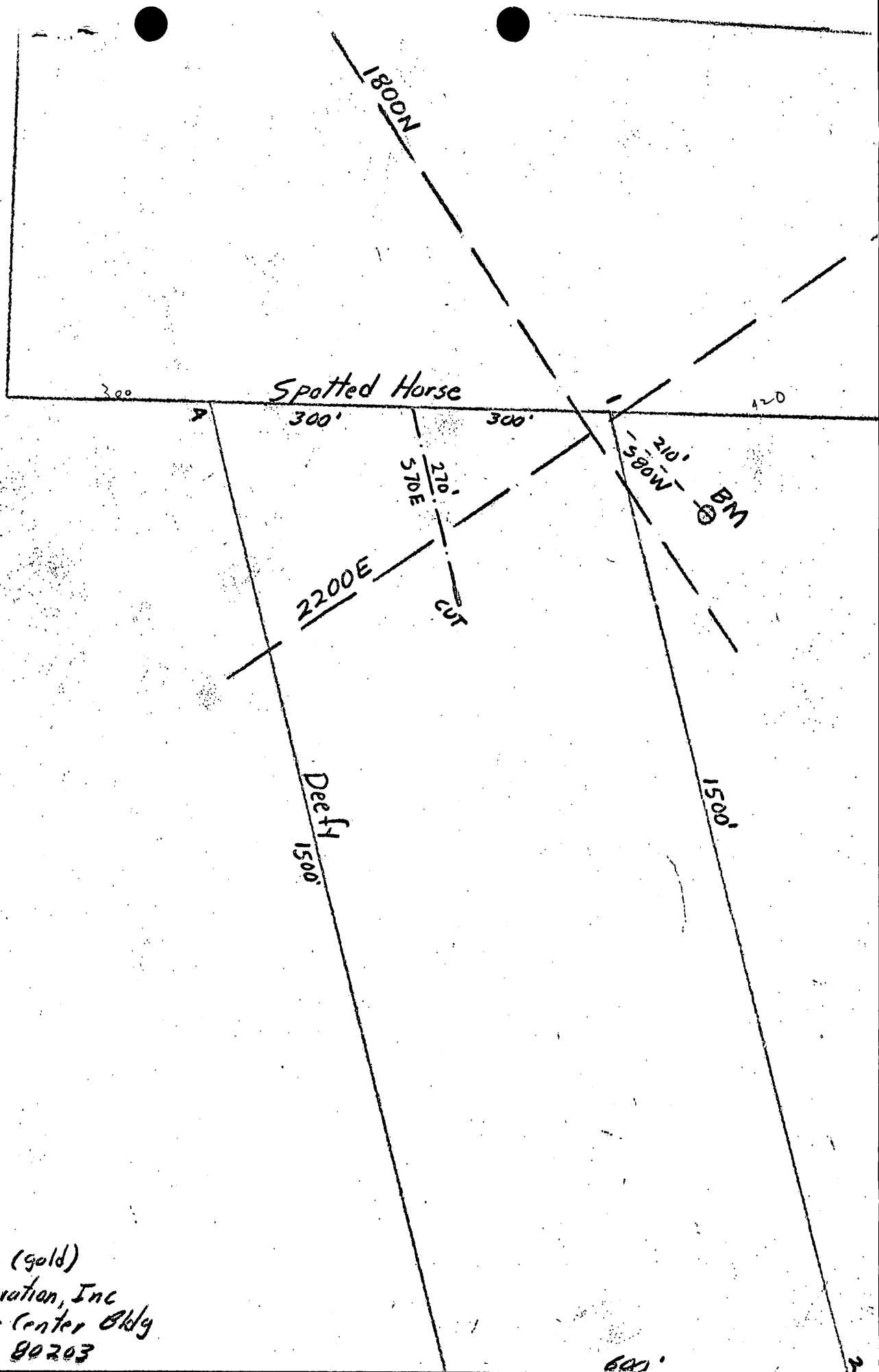
I do not think that core or longhole work would provide any definitive results in the case of the Spotted Horse deposits, for the reasons set forth in my original report. If the government wishes to include such an allowance, however, we do have an EX underground drill and would be willing to participate at a reasonable rate for holes less than 50 feet long and allowances for sampling up to 20 feet of each hole at 2 foot intervals.

I hope this answers your questions. Please let me know if you require further information.

Sincerely yours,

L. C. Hoffman
Mining Projects Engineer

encl.: maps (2 copies)
cc; Denver Viking



OME-6880 (gold)
Viking Exploration, Inc
820 Denver Center Bldg
Denver Colo 80203

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY

October 18, 1972

OCT 25 1972

INITIALS	CODE
Cal	120
	~~130~~
HK	~~120~~
King	~~B40~~

Mr. L. C. Hoffman
Viking Exploration, Inc.
Rt. 3, Box 39
Lewistown, Montana 59457

Re: OME-6880 (gold)
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Hoffman:

Your letter with map of the Deefy claim arrived today. According to my calculations, the northwest end of the center line is 563 feet southwesterly from the northeast corner of the Spotted Horse claim, and according to your mine co-ordinates this is approximately 1723N.-2120 E. Your map does not include the complete outline of the Spotted Horse claim, but it is necessary that I know the location of the Deefy sidelines in relation to the Spotted Horse claim.

In re-checking your level maps I find that the location of the Bonanza Pipe as shown on the 4 level does not correspond with the position as shown on the 6 level. There is no clear explanation of this in the body of your report. Has there been an error in drafting?

My preliminary calculations suggest that allowable drifting costs, after preparation for mining is completed on the 4 and 6 levels, are $62.00 per foot. This includes allowances for 2 miners on both levels, one supervisor, and a top man who is responsible for hoisting and maintenance. Office expense at $100 a month for 6 months, 80 assays at $5.00 per assay, mileage for 100 days at 44 miles ($4.40) per day, and collar costs of $515.00 for the 4 level and $785 for the 6 level, makes a total project cost of $26,300.00 or an average of $69.21 per foot of drift advance. Perhaps some allowance should be made for long-holing. Would you be willing to participate in an OME contract at this unit-cost?

Please let me know at an early date about the exact location of the Deefy sidelines, location of the Bonanza pipe, and your opinion of my preliminary costs figures. Nothing in this letter should be construed as a commitment by the Government to enter into an exploration contract with Viking Exploration, Inc.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: Charles A. Einarsen

DRF
OME/cy inc. ltr w/map

WPuffett/at

RECEIVED

OCT 18 1972

O. M. E.
SPOKANE, WASH.

L. C. Hoffman
Viking Exploration, Inc.
Rt. 3 Bx. 39
Lewistown, Mt.

Mr. Willard Puffett
Field Officer, Region I
Office of Minerals Exploration
656 U. S. Court House
Spokane, Washington 99201

Re: OME-6880 (gold) Spotted Horse Mine, Fergus County, MT

Dear Mr. Puffett:

The "Deefy" quartz lode mining claim has been located to cover the area of proposed exploration. The claim is laid out 300 feet on either side of the surface exposure of the East Dike contact and runs 1500 ft. South 70 degrees East. The West endline coincides exactly with the Spotted Horse East side line, or approximately North 30 degrees East, and the East endline is parallel. This claim is recorded on page 318 of book 17, Lodes, Fergus County Montana and amended on page 320 of book 17, Lodes. The amendment was necessary because I accidentally made the initial location with the end lines 20 degrees of departure instead of 30.

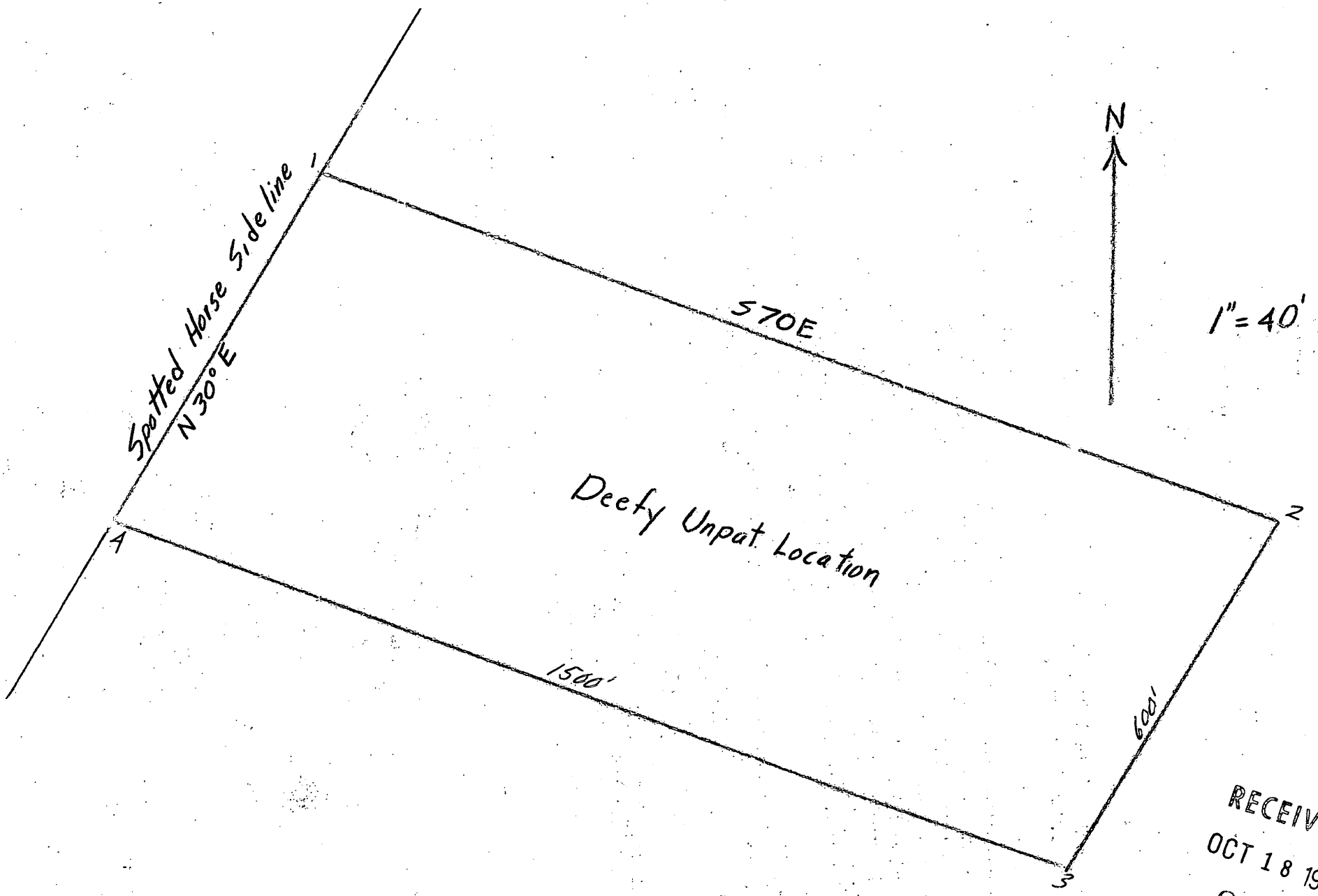
I apologise for the delay in this information, my schedule is overworked trying to get ready for winter.

Sincerely,

L C Hoffman

L. C. Hoffman

encl. : claim maps
cc



RECEIVED
OCT 18 1972
O. Mi. E.
SPOKANE, WASH.

Viking Exploration, Inc
820 Denver Center Bldg
Denver, Colo 80203

OME-6880 (gold)

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

October 11, 1972

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Cae 1 20 M
HK ~~120~~ ~~120~~
B. W.

Re: OME-6880 (gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Einarsen:

Your letter of Sept. 15, 1972, suggested that we should soon have the information concerning a new claim to be staked that will cover the ground to be explored on the 6 level of the Spotted Horse mine. Mr. Larry Hoffman wrote me a letter around Sept. 18, 1972, wherein he discussed the costs but he did not mention staking another claim.

I have delayed processing your application until I receive the claim data. Perhaps it has been submitted but has been delayed or lost enroute.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: DRF
OME

WPuffett/at

RECEIVED
SEP 18 1972
O. M. E.
SPOKANE, WASH.

Larry C. Hoffman
Mining Projects Eng.
Viking Exploration Inc.
Rt. 3 Bx. 39
Lewistown, MT 59457

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 22 1972

INITIALS	CODE
Cat	133 W
	130
HK	120
Law	Lucas

Mr. Willard Puffett
Office of Minerals Exploration
656 U. S. Court House
Spokane, Wash.,99201

OME-6880 (Gold)

Dear Mr. Puffett:

My apologies for the delay in answering your letter of August 28th to Mr. Einarsen, which was forwarded to me for reply.

At the time the application was prepared, and even now, the relative merits of a two man crew and a four man crew are open to question. Since we would have to train our miners from green hands, a four man crew on two headings would almost certainly require another supervisor beside myself, especially as the headings are on different levels making constant back and forth checking very difficult. Safety must be the major consideration. A two man crew would only require my services, but the job would take twice as long with lower utilization of service and supervision. I feel that in the end result there would be little cost difference between the two, and would therefore be most agreeable to whichever the OME should prefer.

The electric service and telephone service were listed under separate headings from office overhead because I was refering to mine power and calls from the mine to other than the Viking Denver office.

Miners will have to transported from Lewistown as there is no water available at the cabin at the mine, and the other minor inconveniences involved might be beyond the tolerance of trainee miners.

A separate geologist was listed because it was felt that the OME might not approve of a non-degree geologist even though I do have a minor and a fair amount of practical experience. If this is not a problem, you may adjust the application accordingly. If you prefer I can re-calculate the application, but it would take some time as we are working longdays to get ready for winter and paperwork is done late at night. To be frank, not only am I very tired, but my wife is quite unhappy about it. I hope you can understand my position.

If I have not answered in sufficient detail, please drop me a note and I will try and call you and we can discuss it.

Regards,

L. Hoffman

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

September 15, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 20 1972

INITIALS	CODE
Rod	Weeks
HK	120

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

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Kirkemo:

We appreciate your letter of September 12, 1972, which recaps the matters still to be resolved and the information still to be furnished the OME in connection with our subject loan application.

We enclose herewith the latest financial statement for Viking Exploration, Inc., dated June 30, 1972, with respect to our ability to furnish our share of the cost of the exploration work. Please advise if you need additional information.

Mr. Larry Hoffman, Viking's Mining Projects Engineer in charge of the Spotted Horse Mine, is completing the clarification of costs as requested by Mr. Willard P. Puffett, Field Officer, OME Region I, and will forward same directly to Mr. Puffett, sending copies to us for our information.

As to the claim matter, Mr. Larry Hoffman is sending the data to us, and we will transmit same to you without delay, hopefully by the end of next week.

Thank you for your assistance and kind cooperation.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk
Enc.
cc: Mr. Willard P. Puffett,
OME Spokane, Washington

Mr. Larry C. Hoffman
Route 2, Box 39
Lewistown, Montana 59457

OME 6880-Gold

VIKING EXPLORATION, INC.
BALANCE SHEETS
AS OF JUNE 30, 1972
Unaudited - Prepared Internally

ASSETS		LIABILITIES & Shareholders' Equity	
Current Assets		Current Liabilities	
		Notes Payable-First Natl. Bank	$ 40,500
Cash	$ 23,261	Notes Payable-Hickerson Oil Co.	$ 4,246
		Notes Payable-C. A. Einarsen	$ 78,406
		Accounts Payable	
		Trade	$ 21,268
Accounts Receivable			
Trade	$ 4,371		
		Accrued and withheld payroll taxes	$ 1,368
Total Current Assets	$ 27,632		
		Accrued Interest	
		Shareholder	$ 933
		Other	$ 126
		Total Current Liabilities	$146,847
Properties and Equipment at Cost		Long-term Liabilities	
		M. Fleisher & Co. Lease	$ 36,000
Oil and Gas Properties			
Undeveloped Leases	$ 54,613		
Nonproducing Royalties	28,703		
Producing Oil & Gas properties	6,704	Shareholders' Equity	
Mineral Interests	32,473	Common stock-par value 10¢ authorized 1,000,000 shares outstanding:	
Total Oil and Gas Properties	$122,493	6-30-72 - 272,009 shares	$ 27,201
Real Estate	$ 16,000		
Mining Equipment	$ 7,569	Capital Contributed in Excess of Par	$ 76,519
Other Property and Equipment	$ 20,776		
Less Accumulated Depreciation	$ 7,300	Retained Deficit	($ 98,896)
Net Properties and Equipment	$ 21,045		
		Total Shareholders' Equity	$ 4,824
Deposits	$ 501		
	$187,671		$187,671

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
9-12	Weeks	

SEP 1 2 1972

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Einarsen:

Thank you for your letters of September 6 and 7, 1972, concerning the identity of the applicant, and the status of rights to land. We note that Mr. Larry C. Hoffman will locate another lode claim to cover the open ground bordering the Spotted Horse lode claim, and that you will send us the recording data. We hope this will include also a map of the new claim and adjacent existing claims.

You state that the narrow strip of "vacant ground" between the Spotted Horse and Kentucky Favorite patented lode claims "is claimed anyway." These quotes from your letter of September 7 are contradictory because the ground is either claimed or unclaimed. If you were to undertake work northeast from the Spotted Horse shaft into the Kentucky Favorite claim as originally proposed, it would be important first to obtain rights to the strip of land in question. This problem, however, would not be of concern for the proposed work on the 4 and 6 levels in the vicinity of and south-southeast of the Spotted Horse shaft.

The identity of the applicant appears now to be correct.

With respect to furnishing your share of the cost of the exploration work, would you please furnish a current financial statement for Viking Exploration, Inc.. This should show that funds on hand or assured are sufficient to meet the Operator's share of costs in the event of an OME contract, and the source of such funds.

We note that on August 28, 1972 Mr. Willard F. Puffett, Field Officer, OME Region I, requested clarification of certain costs. Presumably this is in preparation or has already been sent to Mr. Puffett.

Submittal of the requested information should not be construed as a commitment by the Government that a contract will be offered.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
Region I with cy of new MME Form 40
Mr. Kirkemo

HKirkemo/cac 9-12-72

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

September 7, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
SEP 11 1972
INITIALS CODE
Cae 120 mu
120
120
Blocks

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

Re: OME-6880 (Gold), Viking Exploration, Inc.
Spotted Horse Mine,
Fergus County, Montana

Dear Mr. Kirkemo;

Further to our letter of September 6, please refer to paragraphs 4 and 5 of your letter of August 17, inquiring as to a narrow strip of vacant ground between the Spotted Horse and Kentucky Favorite patented claims.

Mr. Larry C. Hoffman has advised us that no work is planned within 100 feet of the strip, which is claimed anyway.

He further advises us that in consideration of Mr. Puffett's comments, as noted in your letter of August 25, we will abandon the Spotted Horse millsite and will replace it with a mining claim to cover the 6th level exploration. Mr. Hoffman will forward to us the recording data as soon as this is accomplished, and he will correspondedirectly with OME in this regard.

We are in telephone contact with Mr. Hoffman (Viking's Mining Projects Engineer in charge of the Spotted Horse Mine) and trust you will call to our attention any additional matters which must be resolved in connection with this loan application. Thank you for your assistance and kind cooperation.

Yours very truly,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:rk

cc: Mr. Willard P. Puffet -
OME Spokane, Washington

Mr. Larry C. Hoffman
Route 2, Box 39
Lewistown, Montana 59457

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

OFFICIAL
COPY
O. M. E.
RECEIVED
SEP 11 1972
INITIALS CODE
CAE 120 mb
~~130~~
120

September 6, 1972

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

Re: OME-6880 (Gold)
Viking Exploration, Inc.
Spotted Horse Mine,
Fergus County, Montana

Dear Mr. Kirkemo:

Kindly refer to your letter of August 17, 1972, wherein you asked for certain information, as follows:

With regard to paragraphs 4 and 5, Mr. Larry C. Hoffman is developing the information for you and he will forward same to us, whereupon we will immediately transmit same to you.

With regard to paragraphs 6 and 7, I am enclosing herewith a copy of a letter from Strand-Nordstrom & Co., insurors, dated September 5, which indicates that Viking Exploration, Inc. can furnish a performance bond in the event a contract is offered Viking by the OME.

Regarding paragraphs 8 and 9, I am enclosing herewith a revised Form MME 40 in duplicate, showing that the applicant is Viking Exploration, Inc. and not Viking Exploration, Inc. d/b/a Blue Range Mining Company. In the original preparation of this form, Blue Range Mining Company was inadvertently added to the name Viking Exploration, Inc. in the box entitled "Name of Applicant". For your information Mr. Larry C. Hoffman, an individual, has been doing business as Blue Range Mining Company in the State of Montana for several years. Mr. Larry C. Hoffman is employed by Viking Exploration, Inc. as a Mining Projects Engineer. There is no corporate connection whatsoever between Viking Exploration, Inc. and Blue Range Mining Company. I trust the revised Form MME 40 (omitting any reference to the Blue Range Mining Company) should satisfy the questions you raised in paragraphs 8 and 9.

Very truly yours,

VIKING EXPLORATION, INC.

Charles A. Einarsen

Charles A. Einarsen, President

CAE:ek
Enclosures
cc: Mr. Willard P. Puffett -
OME Spokane, Washington

Mr. Larry C. Hoffman
Route 3, Box 39
Lewistown, Montana 59457

Strand-Nordstrom & Co.
Insurance - Bonds
101 UNIVERSITY BOULEVARD
DENVER, COLORADO 80206
(303) 355-9011

Send Copy To OMIE !

September 5, 1972

Mr. Charles Einarson
Viking Exploration, Inc.
820 Denver Center
1776 Lincoln St.
Denver, Colorado 80203

Dear Chuck:

This is to advise you that if it should become necessary to issue a performance bond for your mining operation at Spotted Horse Mine, AFE 5512, Lewiston, Montana, we will be happy to do so.

The Travelers Insurance Company has advised that since you have long established surety credit with their company, they could issue this kind of bond for you immediately.

Please advise us if we can issue this bond or be any service to you. It is always a pleasure servicing your insurance and bond needs.

Sincerely,

STRAND NORDSTROM & CO.

OWEN STRAND

OS:bw

OTE

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

COPY
O. M. E.

August 28, 1972

INITIALS | CODE
Coc | 120 NW
HK | 120
Klw | BWeb

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (gold)
Viking Exploration, Inc.
d/b/a Blue Range Mining Company
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Einarsen:

I need some additional information in order to understand the costs you have estimated for the proposed work at the Spotted Horse Mine. From the figures given in the application it appears that two men will be working underground and will be supported by a hoisting engineer and topman on the surface. Additionally there are provisions for the services of an engineer and supervisor. This seems like a high overhead for only two men at one heading. If the drifts on the 4 and 6 levels could be advanced concurrently, the high cost of supervision and hoisting could be spread over a greater foot-per-day advance.

You have itemized costs for office and bookkeeping as well as telephone and electric service under Overhead Costs. Ordinarily I would assume that electric service and telephone would be part of the office cost. I assume the provision for mileage is for transporting miners to and from Lewistown, but I wonder how many times this will be necessary. I thought that there are facilities for housing two miners on the property.

Ordinarily on a small project such as the one you propose, the engineering, supervision, and geology is capably handled by one man. Mr. Hoffman should be well qualified to do this.

Perhaps you or Mr. Hoffman can give me a little more detail as to how the work is planned so as to help me analyze your proposed costs for the project.

Sincerely,

Willard P. Puffett
Field Officer, Region I

cc: FRF
OME
WPuffett/at

FILE COPY

AUG 25 1972

Mr. Charles A. Kinarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: OME-6880 (Gold)
Viking Exploration, Inc.
d/b/a Blue Range Mining Co.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Kinarsen:

In reviewing your application, Mr. Willard P. Puffett, Field Officer, OME Region I, notes several additional problems pertaining to your claims and the proposed exploration project on Level 6.

The Spotted Horse mill site claim is parallel and contiguous to the northeast boundary of the Spotted Horse patented lode claim which is the site of the proposed exploration work on Level 6 of the Spotted Horse mine. The proposed drift to explore the Bonanza and the Glory Hole veins on Level 6 would cross the eastern boundary of the Spotted Horse lode claim about 555 feet south of claim corner No. 2, and either enter open, unclaimed ground or the Spotted Horse mill site claim. In either case, OME cannot participate in any work closer than 100 feet of the outer boundary of valid mineral claims held by an applicant.

A mill site claim does not convey mineral rights to the claimant, and anyone may locate and establish rights to mineral lode claims over mill site claims.

We bring this matter to your attention because in the event of an OME contract, you would have to establish rights to additional land in this area before a contract could be offered. However, this letter should not be construed as a commitment by the Government that a contract will be offered.

You may wish to acquire rights to property beyond your present holdings irrespective of possible OME participation in any exploration project.

Sincerely yours,

Harold Kirkemo
Chief, Office of
Minerals Exploration

cc: Director's reading file
Mineral Resources
OME reading file
Region I
Mr. Kirkemo
HKirkemo/cac 8-25-72

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
8/17	Weeks	

AUG 17 1972

Memorandum

To: Field Officer, Region I

From: Chief, Office of Minerals Exploration

Subject: OME-6880 (Gold)
Viking Exploration, Inc.
d/b/a Blue Range Mining Co.
Spotted Horse Mine
Fergus County, Montana

The subject application is referred to you for further study and your recommendation. In view of your field examination of this property earlier this year during the time the application was being prepared, no further field examination seems needed.

The enclosed copy of our letter today to the Applicant notes the additional information yet to be furnished.

As described by the applicant, principal values in prospective ores will be in gold, but some silver is associated, and also fluorspar. How much fluorspar is present in the ores, and does it represent a valuable constituent, such that we should consider it part of the objectives of exploration (and possibly reduce the Government's participation in this project to 62½%)?

Please include recommendations on the specific mineral commodities to be named as targets.

The Field Office copy of the application and accompanying material and maps are being sent to you in a separate package.

Harold Kirkemo

Harold Kirkemo

cc: Director's reading file
Mineral Resources
OME reading file
Mr. Kirkemo
Mr. Weeks
130

HKirkemo/cac 8-16-72

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
8/17	Wuhs	

Mr. Charles A. Einarsen, President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

AUG 17 1972

Re: OME-6880 (Gold)
Viking Exploration, Inc.
d/b/a Blue Range Mining Co.
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Einarsen:

Your application for exploration assistance, dated August 1, 1972 has been assigned Docket No. OME-6880. Please identify all future correspondence relating to your application by this docket number.

We enclose for your information a copy of Exhibit A, entitled "Notice to Prospective Federally Assisted Construction Contracts" which describes certain recent additional regulations and requirements. This should be filed with your copy of the application.

The application has been reviewed in this office and referred to Mr. Willard P. Puffett, Field Officer, Region I, Office of Minerals Exploration, U. S. Geological Survey, 656 U. S. Courthouse, Spokane, Washington 99201. Mr. Puffett will contact you if additional information is needed.

We note on your various maps and the small scale copies of the Land Office plats that the Spotted Horse and Kentucky Favorite patented claims do not join. Is there a narrow strip of vacant ground between these claims? Exploration assistance under the OME program cannot be authorized for work within 100 feet of any unclaimed ground.

For your own interests, you may consider establishing claim rights to this ground. The records submitted also did not include copies of the location notices for the two mill site claims or, in lieu thereof, a statement concerning the book and page numbers of recordation in the county courthouse.

The Lien and Subordination Agreement (MME Form 52) submitted with your application is returned herewith. Mr. L. C. Hoffman, signator, cannot grant a lien on the Spotted Horse and Kentucky Favorite mining claims described in the sub-lease agreement because they are owned by the First Trust Company of Montana. The latter has declined to subordinate these claims so, in lieu thereof, the Applicant company must furnish a performance bond in the event of an OME contract. We enclose copies of a Performance Bond and Affidavit of Individual Surety (Standard Forms 25 and 28) for your information. In the event of a contract, one or both of these documents would be required.

Some applicants are experiencing difficulty in obtaining performance bonds, so before proceeding further with your application we would appreciate assurance from you that you could post a bond in the amount of the Government's share of the costs set forth in a contract. For preliminary purposes in contacting prospective bonding companies you could estimate the amount of a bond at 75 percent of the estimated total cost ($38,077) shown on your application. The figure may be revised if a contract is prepared. Do not furnish a bond at this time, however.

The Applicant is identified on the application form as Viking Exploration, Inc. d/b/a Blue Range Mining Co. but the Mining Sub-lease and Option of February 28, 1972 refers only to Viking Exploration, Inc. Item 1 (b) of the Addenda to the application states that the proposed work would be done in the name of Blue Range Mining Company, and that the name is ficticious. Please furnish proper documentation whereby the Applicant as identified on the application form legally succeeded L. C. Hoffman d/b/a Blue Range Mining Co. and acquired the latter's rights, interests, and obligations.

There are at least two courses by which you might accomplish this; (1) amend the Mining Sub-lease and Option of February 28, 1972, to indicate that the interests are conveyed from L. C. Hoffman d/b/a Blue Range Mining Company to Viking Exploration, Inc. d/b/a Blue Range Mining Company, or (2) execute a formal document establishing Blue Range Mining Company as a legal entity within the corporate structure of Viking Exploration, Inc.

Nothing in this letter should be construed as a commitment by the Government that a contract will be offered for the proposed work.

Sincerely yours,

Harold Kirkemo

Harold Kirkemo
Chief, Office of
Minerals Exploration

Enclosures
Copy to Mr. Larry G. Hoffman

cc: Director's reading file
Mineral Resources
OME reading file
Region I

Mr. Kirkemo
Mr. Weeks
HKirkemo/cac 8-16/72

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/2/72	Kirkemo	120
6/5	Gair	
		220

JUN 8 - 1972

Mr. Larry C. Hoffman
Mining Projects Engineer
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Dear Mr. Hoffman:

Your letter of May 5, 1972, to President Richard M. Nixon urging increased support for the Geological Survey's Office of Minerals Exploration (OME), and commenting on the importance of minerals to the United States has been referred to us for reply.

The Mining and Minerals Policy Act of 1970 which you mention provides the opportunity for the Government, particularly the Department of the Interior, to present and analyze each year all significant and relevant facts concerning the domestic mining, minerals, and mineral reclamation industries, and to recommend legislative programs bearing upon mineral programs and policies. The status of our OME program was described in the First Annual Report of the Secretary of the Interior under this Act, which was issued in March 1972. It was noted that possible improvements in the program were under review. One suggested improvement was to relax the requirements for obtaining exploration loans in order to provide an opportunity and incentive for expanding the exploratory effort by private enterprise, both small and large. A proposal to amend the OME Act and thereby improve the program is under active consideration.

With reference to your comments on the importation of minerals, enclosed Tables 1 and 3 from the Secretary's First Annual Report illustrate the dependence on imports to meet domestic demand for a number of minerals.

We appreciate your support for an active minerals exploration program, and your views on the importance of a strong domestic minerals industry.

Sincerely yours,

Acting Director

Enclosures

cc: ~~Mr. Henry Mary R. Miller, Rm. 6642~~
~~Congressional Liaison~~
General Files
Director's Chron
Mineral Resources
Division File
OME File
OME Reading File
OME Region III
Mr. Kirkemo
130

HKirkemo/gla 6-2-72

Table 1. Total Annual U.S. Mineral Supplies and Uses (short tons).

March 3, 1972

Notes:
(1) = Withheld to avoid disclosure of company confidential data
NA = Data not available
* = Includes Exports
Totals may not agree precisely due to rounding.

	1950				1971 (Preliminary Data)			
	SUPPLIES			USES	SUPPLIES			USES
	Domestic Primary	Old Scrap	Imports For Use	Including Govt. Stockpiling, Industry Stocks, and Exports	Domestic Primary	Old Scrap	Imports For Use	Including Govt. Stockpiling, Industry Stocks, and Exports
Aluminum	374,000	76,000	810,000	1,260,000	500,000	180,000	4,817,000	5,497,000
Antimony	6,404	21,862	15,354	43,620	1,130	18,615	18,654	38,399
Arsenic	10,052	0	11,189	21,241	(1)	0	12,478	(1)
Barium	388,317	0	32,693	421,010	456,000	0	271,000	727,000
Beryllium	20	NA	175	NA	(1)	2	164	(1)
Bismuth	(1)	(1)	391	(1)	(1)	(1)	424	(1)
Boron	59,352	0	1	59,353	178,000	0	900	178,900
Bromine	49,200	0	0	49,200	166,000	0	7	166,007
Cadmium	NA	NA	1,116	NA	1,600	0	2,311	3,911
Calcium	75,089,000	0	NA	NA	89,660,000	0	660,000	90,320,000
Cesium	NA	NA	NA	NA	(1)	0	1.5	(1)
Chlorine	2,084,000	0	0	2,084,000	9,300,000	0	33,135	9,333,135
Chromium	23,116	NA	397,520	NA	0	70,000	404,000	474,000
Cobalt	405	NA	4,548	NA	(1)	34	5,456	(1)
Columbium	NA	NA	NA	NA	0	0	1,271	1,271
Copper	909,000	485,000	636,000	2,030,000	1,533,000	467,000	352,000	2,352,000
Fluorine	135,680	0	74,085	209,765	128,500	0	488,500	617,000
Gallium	NA	NA	NA	NA	(1)	0.0	NA	(1)
Germanium	NA	NA	NA	NA	14	0	3	17
Gold	82	36	159	277	52	91	177	320
Hafnium	NA	NA	NA	NA	NA	0	NA	NA
Indium	(1)	0.0	NA	NA	(1)	0.0	5.5	(1)
Iodine	(1)	0	362	(1)	(1)	0	3,578	(1)
Iron	54,700,000	32,600,000 *	7,200,000	94,500,000	54,400,000	39,300,000 *	28,500,000	122,200,000
Lead	431,000	428,000	542,000	1,401,000	573,000	500,000	265,000	1,338,000
Lithium	129	0	NA	NA	(1)	0	192	(1)
Magnesium, metal	25,202	5,434	868	31,504	115,000	3,000	4,000	122,000
Magnesium, nonmetallic	NA	NA	NA	NA	1,050,000	0	73,000	1,123,000
Manganese	138,833	0	994,032	1,132,865	60,000	0	1,137,000	1,197,000
Mercury	172	76	2,131	2,379	663	419	1,130	2,212
Molybdenum	14,240	0	2	14,242	54,206	0	427	54,633
Nickel	913	4,781	91,347	97,041	15,500	42,000	143,756	201,256
Nitrogen, compounds	1,667,000	0	NA	NA	11,500,000	0	421,000	11,921,000
Nitrogen, gas & liquid	32,000	0	0	32,000	5,477,000	0	0	5,477,000
Palladium	0.4	.7	5.0	6.1	0.3	5.0	22.6	27.9
Phosphorus	1,690,000	0	13,000	1,703,000	5,136,000	0	12,160	5,148,160
Platinum	1.9	1.2	8.5	11.6	0.2	2.9	18.6	21.7
Potassium	1,068,811	0	160,959	1,229,770	2,240,000	0	2,296,000	4,536,000
Rare Earths	(1)	0	89	(1)	(1)	0	1,855	(1)
Rhenium	NA	NA	NA	NA	3.8	0.0	0.2	4.0
Rhodium	0.0	0.0	0.5	0.5	0.0	0.3	1.2	1.5
Rubidium	NA	NA	NA	NA	(1)	0	0	(1)
Scandium	NA	NA	NA	NA	0.0	0.0	0.0	0.0
Selenium	256	NA	182	438	329	15	201	545
Silicon	NA	NA	NA	NA	479,000	0	12,680	491,680
Silver	1,456	1,551	5,185	8,192	1,402	939	1,910	4,251
Sodium	6,863,000	0	NA	NA	17,400,000	0	1,600,000	19,000,000
Strontium	0	0	4,117	4,177	0	0	20,613	20,613
Sulfur	6,704,860	0	112,252	6,817,112	10,800,000	0	1,600,000	12,400,000
Tantalum	NA	NA	NA	NA	0	96	372	468
Tellurium	30	0	0	30	75	0	15	90
Thallium	(1)	0	NA	(1)	(1)	0	1.3	(1)
Thorium	(1)	0	(1)	(1)	(1)	0	178	(1)
Tin	105	35,782	121,854	157,741	(1)	14,500	52,700	(1)
Titanium, metal	(1)	0	0	(1)	(1)	0	4,145	(1)
Titanium, nonmetallic	142,105	0	67,481	209,586	230,000	0	193,000	423,000
Tungsten	1,983	NA	8,074	NA	3,500	250	208	3,958
Vanadium	2,298	0	729	3,027	(1)	0	2,393	(1)
Yttrium	NA	NA	NA	NA	(1)	0	NA	(1)
Zinc	623,000	74,000	435,000	1,132,000	491,000	70,000	662,000	1,223,000
Zirconium, metal	NA	NA	NA	NA	0	0	0	(1)
Zirconium, nonmetallic	NA	NA	NA	NA	(1)	0	47,000	(1)
Asbestos	41,358	0	705,458	746,816	132,000	0	675,000	807,000
Clays	39,381,446	0	161,261	39,542,707	55,000,000	0	55,000	55,055,000
Corundum	0	0	3,543	3,543	0	0	0	2,000
Diatomite	(1)	0	NA	NA	537,000	0	537	537,537
Feldspar	456,876	0	13,851	470,727	712,000	0	2,490	714,490
Garnet	9,304	0	3	9,307	18,325	0	153	18,478
Graphite	5,102	0	43,485	48,587	(1)	0	57,575	(1)
Gypsum	8,192,625	0	3,219,299	11,411,924	9,647,000	0	6,094,000	15,741,000
Kyanite	(1)	0	17,417	(1)	(1)	0	1,343	(1)
Mica, scrap & flake	69,360	0	4,402	73,762	119,000	0	3,640	122,640
Mica, sheet	289	0	14,108	14,397	0	0	2,833	2,833
Perlite	101,536	0	0	101,536	456,000	0	0	456,000
Pumice	719,356	0	19,268	738,624	3,126,000	0	399,733	3,525,733
Sand & Gravel	370,455,000	0	445,295	370,900,295	987,000,000	0	715,000	987,715,000
Stone, crushed	250,253,850	0	NA	NA	820,000,000	0	3,000,000	823,000,000
Stone, dimension	1,859,200	0	NA	NA	1,500,000	0	300,000	1,800,000
Talc	620,750	0	23,387	644,137	1,053,000	0	17,381	1,070,381
Vermiculite	208,096	0	0	208,096	277,000	0	10,000	287,000
Anthracite	44,076,703	0	18,289	44,094,992	8,700,000	0	0	8,700,000
Bituminous Coal & Lignite	516,311,053	0	346,706	516,657,759	560,000,000	0	58,000	560,058,000
Natural Gas (dry)	138,000,000	0	0	138,000,000	495,740,000	0	21,180,000	516,920,000
Peat	130,723	0	124,382	255,105	546,000	0	296,283	842,283
Petroleum(inc. Nat. Gas Liq)	296,400,000	0	42,700,000	339,100,000	564,190,000	0	177,500,000	741,690,000
Shale Oil	0	0	0	0	0	0	0	0
Uranium, metal	(1)	0	(1)	(1)	10,515	0	0	10,515
Argon	4,730	0	0	4,730	153,650	0	0	153,650
Helium	421	0	0	421	3,102	0	0	3,102
Hydrogen	463,000	0	0	463,000	NA	0	0	NA
Oxygen	909,000	0	0	909,000	NA	0	0	NA
TOTAL	1,825,000,000	35,000,000	60,000,000	1,920,000,000	3,723,000,000	41,000,000	256,000,000	4,020,000,000

Table 3. Net Imports as a Percentage of 1971 U.S. Mineral Demand (Preliminary Data).

March 3, 1972

Percent	Commodity
100+	Thorium
100+	Titanium (rutile)
100	Asbestos (long-fiber, iron-free)
100	Diamonds (natural, gemstones and industrial)
100	Mica (sheet)
100	Quartz Crystal (natural, electronic grade)
100	Strontium
96	Manganese
92	Aluminum (including metal content of bauxite and alumina)
89	Chromium
80	Fluorine
76	Asbestos (common)
75	Cobalt
75	Platinum group metals
66	Nickel
64	Tin
55	Columbium
54	Antimony
48	Gold
47	Bismuth
46	Tantalum
45	Potassium
45	Zinc
44	Cadmium
42	Mercury
38	Gypsum
35	Barium
34	Selenium
34	Silver
30	Iron
28	Vanadium
24	Petroleum (including Natural Gas Liquids)
18	Lead
17	Tellurium
16	Titanium (ilmenite)
12	Pumice
7	Sodium
6	Copper
5	Magnesium (nonmetallic)
4	Cement
4	Natural Gas
4	Rhenium
2	Rare Earths
2	Stone

Less than 1 Percent:

Anthracite; Argon; Bituminous Coal and Lignite; Boron; Bromine; Carbon; Chlorine; Clays; Corundum and Emery; Diatomite; Feldspar; Garnet; Helium; Hydrogen; Lime; Magnesium (metal); Mica (scrap and flake); Molybdenum; Nitrogen (compounds); Nitrogen (gas and liquids); Oxygen; Perlite; Phosphorous; Rubidium; Sand and Gravel; Silicon; Sulfur; Talc; Tungsten; Uranium; Vermiculite.

Data not available or withheld to avoid disclosure of company confidential data:

Arsenic; Beryllium; Cesium; Gallium; Germanium; Graphite (natural); Hafnium; Indium; Iodine; Kyanite; Lithium; Peat; Radium; Rubidium; Scandium; Thallium; Yttrium; Zirconium (metal); Zirconium (nonmetallic).

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

MAY 5, 1972

OFFICIAL
COPY
O. M. E.
RECEIVED
MAY 31 1972
INITIALS | CODE
RJ

RICHARD M. NIXON
PRESIDENT OF THE UNITED STATES
WHITE HOUSE
WASHINGTON, D.C.

DEAR MR. PRESIDENT

I AM WRITING BECAUSE I AM CONCERNED THAT A CONGRESS THAT PASSED THE 1970 MINING AND MINERALS POLICY ACT, TO ENCOURAGE PRIVATE ENTERPRISE TO DEVELOPE A SOUND AND STABLE MINING INDUSTRY, HAS ALSO FAILED TO SUPPORT A MAJOR GOVERNMENT AGENCY AIDING SUCH PRIVATE ENTERPRISE.

SINCE 1958 THE OFFICE OF MINERALS EXPLORATION OF THE U.S. GEOLOGICAL SURVEY HAS BEEN PARTICIPATING IN EXPLORATION PROGRAMS WITH SMALL TO MEDIUM SIZE MINING COMPANIES. THE PROGRAM HAS PROVIDED UP TO 75 PERCENT OF THE COST OF AN APPROVED EXPLORATION PROGRAM. THE OME SUCCEEDED THE DEFENSE MINERALS EXPLORATION ADMINISTRATION. THE ATTACHED SUMMARY IS FROM THE 6TH ANNUAL REPORT OF THE OME, AND SHOWS THE RESULTS OF BOTH PROGRAMS. I THINK THE MOST IMPRESSIVE FIGURES ARE THE ONES SHOWING THE VALUE OF ORE FOUND FOR EACH GOVERNMENT DOLLAR INVESTED. NOTE THAT THE RETURNS WERE HIGHER UNDER THE BETTER FINANCED DMEA PROGRAM.

AT THE PRESENT TIME, THE OME FUNCTIONS WITH AN EXPLORATION BUDGET OF ABOUT $200,000. THIS AMOUNT IS ONLY SUFFICIENT TO HELP WITH 3 OR 4 VERY SMALL PROGRAMS AND HARDLY EVEN JUSTIFIES STAFFING THE OFFICE. I SUBMIT THAT THIS IS A NEARLY CRIMINAL SITUATION IN VIEW OF THE MINERAL SHORTAGES OF THIS COUNTRY. IN THE EVENT OF A NATIONAL CRISIS, THERE IS NOT GOING TO BE THE MONEY, MANPOWER, TIME, OR RESOURCES TO GO OUT AND BLINDLY SEARCH FOR NEW MINERAL RESERVES. AN UNDISCOVERED OREBODY IS A WASTED ASSET. A KNOWN, UNDEVELOPED OREBODY IS A WASTING ASSET BUT MAY BE DRAWN UPON AT ANY TIME. YOU MIGHT BE INTERESTED TO INQUIRE INTO THE PERCENTAGES OF STRATEGIC METALS NOW IMPORTED THAT WOULD NOT BE AVAILABLE IN EVENT OF INTERNATIONAL CONFLICT. FOR GOLD ALONE THE U.S. CONSUMES OVER THREE TIMES ITS PRODUCTION.

A PROPERLY FINANCED OME PROGRAM WOULD NOT ONLY HELP SECURE THE NATIONS POSITION, BUT WOULD BOLSTER THE CURRENTLY DEPRESSED EXPLORATION INDUSTRY WITH A RESULTING INCREASE IN CASH FLOW AND AVAILABLE JOBS. THE ORE RESERVES DISCOVERED WOULD BE THE BASIS FOR NEW MINES THAT WOULD FURTHER INCREASE PRODUCTIVITY AND DECREASE UNEMPLOYMENT. THESE MINES WOULD OFTEN BE LOCATED IN AREAS THAT DESPERATELY NEED A FIRM INDUSTRIAL BASE.

ON THIS BASIS, I URGE YOU TO REVIEW THE SITUATION AND SUPPORT A VASTLY INCREASED BUDGET, NOT FOR THE USGS IN GENERAL, BUT SPECIFICALLY FOR THE OFFICE OF MINERAL EXPLORATION.

THANK YOU FOR YOUR CONSIDERATION OF THIS MATTER.

SINCERELY YOURS,

VIKING EXPLORATION, INC.

L. C. Hoffman

LARRY C. HOFFMAN
MINING PROJECTS ENGINEER

LCH/PJ
ENCL.

The DMEA program differed from the OME program in 1) allowing participation by all companies, large or small, 2) not limiting the amount of Government participation in a single contract, and 3) not charging interest on funds spent by the Government on exploration projects. Comparative data on the two programs through June 30, 1971 are shown in Table 17:

17. Comparison of DMEA and OME programs

	DMEA	OME
Period of operation	Mid-1951 to 6/30/58	Since August 1958
Years operated	7	13
Applications received	3,888	889
Contracts executed	1,159	196
Percentage of applications resulting in contracts	30 percent	22 percent
Contracts certified as discoveries	399	47
Percentage of contracts certified	34 percent	24 percent
Government funds spent on contracts	$23,345,488	$4,203,362
Estimated value of ore reserves discovered	$1 billion	$95 million
Estimated recovery value of ore found for each dollar of Gov't. funds spent	$43	$23
Royalties received	$7,133,687	$387,661
Value of ore produced on which royalties were paid	$142,675,000	$7,753,000
Royalties received as percent of Gov't. funds spent	31 percent	9 percent
Contracts repaid in full	97	5

U.S. Mineral Output Far Short of Need

WASHINGTON — American primary production of minerals and the commodities made from minerals fell more than $8 billion short of meeting our 1970 demands.

In 1985, it will fall $31 billion short.

In 2000, it will fall $64 billion short.

Those estimates, based on conservative projections, are contained in the first annual report of the Interior Department pursuant to the 1970 Mining and Minerals Policy Act.

"It will take about 10 years for the shortages of metals in this country to become apparent for all to see. It will hit everyone when the housewife can't get her refrigerator repaired, or she can't buy a new refrigerator or washing machine for lack of metal," said Harry L. Moffett, deputy assistant interior secretary.

Moffett was in charge of preparing this first annual report to the President and Congress under the 1970 Act.

The act states it shall be national policy to foster and encourage private enterprise to develop a sound and stable domestic mining industry; to foster research and reclamation of mineral waste products and of mined land. It requires Interior to submit an annual report on the state of mining and trends in the mining industry.

"In 1970, with less than 6 per cent of the world's population, the United States consumed 30 per cent of the world mineral production. We have to make up our deficits in metals by imports, and they are growing larger each year. If we continue our growing reliance on foreign sources of supply at the present rates, I don't know where we are going to be. The shortages pose a real national security problem for us," Moffett stated.

The U.S. uses 91 minerals and metals, but it had to import at least a portion of 44 of them to meet demand, which has doubled between 1950-70.

The nation is totally deficient in such key minerals as thorium, titanium, asbestos, industrial diamonds, sheet mica, quartz crystal and strontium, the report said.

The environmental movement in this country has brought about air and water pollution control laws and regulations which have resulted in closing a number of smelters, he said. "Some of these smelters were no doubt obsolete, or close to it. But the pollution control laws were the straw that broke the 18 months. These closings not only knocked out the smelters; they also knocked out production of every little mine in their vicinity, as they have no place any longer to process their ore. This is a major problem now for the small mines in Colorado, for example," Moffett said.

On the other hand, two developments abroad are cutting the United States out of access to prime ore bodies and also cutting into domestic jobs, Moffett stated. One is the expropriation of American companies, such as that which occurred to Anaconda and Kennecott in Chile. The other is the development of the "value added" concept by foreign nations.

Developing nations, in particular, are passing laws requiring the processing of ore or the manufacture of metal in the producing countries before the product can be exported. "'Value added' has cost American workers many thousands of jobs in processing and manufacturing metals and metal products," Moffett said.

Long dominant in mining abroad, American companies are being challenged as never before by cartel-type industries in Japan, West Germany and France which are taking steps to pin down abroad under long-term contracts the minerals they don't have. Japan has purchased coal reserves even in this country, for example. Both the Soviet Union and Japan have or are about to pass the United States in the production of steel, and Russia will soon pass the United States in all

tically now to turn this trend around? Moffett was asked. "Improve the climate for mining," he replied. The federal government and the individual states cannot continue to "change the rules of the ball game and expect mining companies to continue to invest in mines and processing plants. We get more compalints from industry about this problem than any other," Moffett said.

Moffett said shortages are likely to become so acute in some metals that it will be only a matter of time before some types of incentives are provided, probably through the tax laws rather than by direct subsidy, to encourage prospecting, exploration and development and processing of certain metals. These might take the form of rapid tax write-offs, a complete write-off of capital investment, or double deduction of exploration costs.

He said it would be only a matter of time "before there is some type of relaxation of the antitrust laws, particularly in the field of research." Pooling research efforts by both industry and government is essential if we are to develop needed substitutes for metals and minerals in short supply, such as using domestic clay rather than imported bauxite to make aluminum, he said. "Companies should be able to pool their ideas and pool their patents so there is not so much duplication of effort and loss of time in research efforts," Moffett said.

7

Interior

MGS

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

g.90

MAY 5, 1972

OFFICIAL COPY
O. M. E.
RECEIVED
MAY 31 1972
INITIALS | CODE
120

RICHARD M. NIXON
PRESIDENT OF THE UNITED STATES
WHITE HOUSE
WASHINGTON, D.C.

DEAR MR. PRESIDENT

I AM WRITING BECAUSE I AM CONCERNED THAT A CONGRESS THAT PASSED THE 1970 MINING AND MINERALS POLICY ACT, TO ENCOURAGE PRIVATE ENTERPRISE TO DEVELOPE A SOUND AND STABLE MINING INDUSTRY, HAS ALSO FAILED TO SUPPORT A MAJOR GOVERNMENT AGENCY AIDING SUCH PRIVATE ENTERPRISE.

SINCE 1958 THE OFFICE OF MINERALS EXPLORATION OF THE U.S. GEOLOGICAL SURVEY HAS BEEN PARTICIPATING IN EXPLORATION PROGRAMS WITH SMALL TO MEDIUM SIZE MINING COMPANIES. THE PROGRAM HAS PROVIDED UP TO 75 PERCENT OF THE COST OF AN APPROVED EXPLORATION PROGRAM. THE OME SUCCEEDED THE DEFENSE MINERALS EXPLORATION ADMINISTRATION. THE ATTACHED SUMMARY IS FROM THE 6TH ANNUAL REPORT OF THE OME, AND SHOWS THE RESULTS OF BOTH PROGRAMS. I THINK THE MOST IMPRESSIVE FIGURES ARE THE ONES SHOWING THE VALUE OF ORE FOUND FOR EACH GOVERNMENT DOLLAR INVESTED. NOTE THAT THE RETURNS WERE HIGHER UNDER THE BETTER FINANCED DMEA PROGRAM.

AT THE PRESENT TIME, THE OME FUNCTIONS WITH AN EXPLORATION BUDGET OF ABOUT $200,000. THIS AMOUNT IS ONLY SUFFICIENT TO HELP WITH 3 OR 4 VERY SMALL PROGRAMS AND HARDLY EVEN JUSTIFIES STAFFING THE OFFICE. I SUBMIT THAT THIS IS A NEARLY CRIMINAL SITUATION IN VIEW OF THE MINERAL SHORTAGES OF THIS COUNTRY. IN THE EVENT OF A NATIONAL CRISIS, THERE IS NOT GOING TO BE THE MONEY, MANPOWER, TIME, OR RESOURCES TO GO OUT AND BLINDLY SEARCH FOR NEW MINERAL RESERVES. AN UNDISCOVERED OREBODY IS A WASTED ASSET. A KNOWN, UNDEVELOPED OREBODY IS A WASTING ASSET BUT MAY BE DRAWN UPON AT ANY TIME. YOU MIGHT BE INTERESTED TO INQUIRE INTO THE PERCENTAGES OF STRATEGIC METALS NOW IMPORTED THAT WOULD NOT BE AVAILABLE IN EVENT OF INTERNATIONAL CONFLICT. FOR GOLD ALONE THE U.S. CONSUMES OVER THREE TIMES ITS PRODUCTION.

Kirkemo

Kirk

Prepare reply for Director's signature — we'll have to temporize a bit to the effect that we are for an expansion, but the matter is being studied — and final decision not yet made. Jack

6/2/72

Jack:

This is third letter of this type received lately — one to Senator Bentsen, & one to Senator Dominick. Apparently, a mining association has urged its members to write their congressmen etc., urging support for exploration aid.

Kirk.

DEPT. OF INTERIOR
MAY 13 9 41 AM '72
OFFICE OF THE SECRETARY

A PROPERLY FINANCED OME PROGRAM WOULD NOT ONLY HELP SECURE THE NATIONS POSITION, BUT WOULD BOLSTER THE CURRENTLY DEPRESSED EXPLORATION INDUSTRY WITH A RESULTING INCREASE IN CASH FLOW AND AVAILABLE JOBS. THE ORE RESERVES DISCOVERED WOULD BE THE BASIS FOR NEW MINES THAT WOULD FURTHER INCREASE PRODUCTIVITY AND DECREASE UNEMPLOYMENT. THESE MINES WOULD OFTEN BE LOCATED IN AREAS THAT DESPERATELY NEED A FIRM INDUSTRIAL BASE.

ON THIS BASIS, I URGE YOU TO REVIEW THE SITUATION AND SUPPORT A VASTLY INCREASED BUDGET, NOT FOR THE USGS IN GENERAL, BUT SPECIFICALLY FOR THE OFFICE OF MINERAL EXPLORATION.

THANK YOU FOR YOUR CONSIDERATION OF THIS MATTER.

SINCERELY YOURS,

VIKING EXPLORATION, INC.

L. C. Hoffman

LARRY C. HOFFMAN
MINING PROJECTS ENGINEER

LCH/PJ
ENCL.

The DMEA program differed from the OME program in 1) allowing participation by all companies, large or small, 2) not limiting the amount of Government participation in a single contract, and 3) not charging interest on funds spent by the Government on exploration projects. Comparative data on the two programs through June 30, 1971 are shown in Table 17:

17. Comparison of DMEA and OME programs

	DMEA	OME
Period of operation	Mid-1951 to 6/30/58	Since August 1958
Years operated	7	13
Applications received	3,888	889
Contracts executed	1,159	196
Percentage of applications resulting in contracts	30 percent	22 percent
Contracts certified as discoveries	399	47
Percentage of contracts certified	34 percent	24 percent
Government funds spent on contracts	$23,345,488	$4,203,362
Estimated value of ore reserves discovered	$1 billion	$95 million
Estimated recovery value of ore found for each dollar of Gov't. funds spent	$43	$23
Royalties received	$7,133,687	$387,661
Value of ore produced on which royalties were paid	$142,675,000	$7,753,000
Royalties received as percent of Gov't. funds spent	31 percent	9 percent
Contracts repaid in full	97	5

U.S. Mineral Output Far Short of Need

WASHINGTON — American primary production of minerals and the commodities made from minerals fell more than $8 billion short of meeting our 1970 demands.

In 1985, it will fall $31 billion short.

In 2000, it will fall $64 billion short.

Those estimates, based on conservative projections, are contained in the first annual report of the Interior Department pursuant to the 1970 Mining and Minerals Policy Act.

"It will take about 10 years for the shortages of metals in this country to become apparent for all to see. It will hit everyone when the housewife can't get her refrigerator repaired, or she can't buy a new refrigerator or washing machine for lack of metal," said Harry L. Moffett, deputy assistant interior secretary.

Moffett was in charge of preparing this first annual report to the President and Congress under the 1970 Act.

The act states it shall be national policy to foster and encourage private enterprise to develop a sound and stable domestic mining industry; to foster research and reclamation of mineral waste products and of mined land. It requires Interior to submit an annual report on the state of mining and trends in the mining industry.

"In 1970, with less than 6 per cent of the world's population, the United States consumed 30 per cent of the world mineral production. We have to make up our deficits in metals by imports, and they are growing larger each year. If we continue our growing reliance on foreign sources of supply at the present rates, I don't know where we are going to be. The shortages pose a real national security problem for us," Moffett stated.

The U.S. uses 91 minerals and metals, but it had to import at least a portion of 44 of them to meet demand, which has doubled between 1950-70.

The nation is totally deficient in such key minerals as thorium, titanium, asbestos, industrial diamonds, sheet mica, quartz crystal and strontium, the report said.

The environmental movement in this country has brought about air and water pollution control laws and regulations which have resulted in closing a number of smelters, he said. "Some of these smelters were no doubt obsolete, or close to it. But the pollution control laws were the straw that broke the camel's back and forced them to close. Six lead and zinc smelters have closed in the past 18 months. These closings not only knocked out the smelters; they also knocked out production of every little mine in their vicinity, as they have no place any longer to process their ore. This is a major problem now for the small mines in Colorado, for example," Moffett said.

On the other hand, two developments abroad are cutting the United States out of access to prime ore bodies and also cutting into domestic jobs, Moffett stated. One is the expropriation of American companies, such as that which occurred to Anaconda and Kennecott in Chile. The other is the development of the "value added" concept by foreign nations.

Developing nations, in particular, are passing laws requiring the processing of ore or the manufacture of metal in the producing countries before the product can be exported. "'Value added' has cost American workers many thousands of jobs in processing and manufacturing metals and metal products," Moffett said.

Long dominant in mining abroad, American companies are being challenged as never before by cartel-type industries in Japan, West Germany and France which are taking steps to pin down abroad under long-term contracts the minerals they don't have. Japan has purchased coal reserves even in this country, for example. Both the Soviet Union and Japan have or are about to pass the United States in the production of steel, and Russia will soon pass the United States in all base metals output, according to the report.

What might be done realistically now to turn this trend around? Moffett was asked. "Improve the climate for mining," he replied. The federal government and the individual states cannot continue to "change the rules of the ball game and expect mining companies to continue to invest in mines and processing plants. We get more compalints from industry about this problem than any other," Moffett said.

Moffett said shortages are likely to become so acute in some metals that it will be only a matter of time before some types of incentives are provided, probably through the tax laws rather than by direct subsidy, to encourage prospecting, exploration and development and processing of certain metals. These might take the form of rapid tax write-offs, a complete write-off of capital investment, or double deduction of exploration costs.

He said it would be only a matter of time "before there is some type of relaxation of the antitrust laws, particularly in the field of research." Pooling research efforts by both industry and government is essential if we are to develop needed substitutes for metals and minerals in short supply, such as using domestic clay rather than imported bauxite to make aluminum, he said. "Companies should be able to pool their ideas and pool their patents so there is not so much duplication of effort and loss of time in research efforts," Moffett said.

OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

June 8, 1972

OFFICIAL COPY O. M. E. RECEIVED JUN 12 1972	
INITIALS	CODE
	120
	220

Mr. Larry C. Hoffman
Mineral Projects Engineer
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

Re: Viking Exploration, Inc.
d/b/a Blue Range Mining Company
Spotted Horse Mine
Fergus County, Montana

Dear Mr. Hoffman:

I am returning the copy of the tentative application that you mailed to me on May 9, 1972, in accordance with our telephone conversation on June 8, 1972. Some of your proposed work is more in the nature of prospecting rather than exploration. The work on the 6 and 4 levels, however, might qualify for OME assistance.

If you should decide to formally apply for OME assistance, please submit evidence that you have the right to assign the lease and include a consent to assignment from First Trust Company. Present evidence that you can furnish your share of the proposed exploration costs and indicate if you can furnish a performance bond in lieu of the Lien and Subordination Agreements that the bank won't sign.

Sincerely,

Willard P. Puffett
Field Officer, Region I

Enclosure

cc: DRF
OME
Puffett/at

MME Form 7
(2/63)

OFFICIAL FILE COPY

Date	Surname	Code
6/7/72		120
		220

June 7, 1972

Memorandum

To: Field Officer, Region I

From: Chief, Office of Minerals Exploration

Subject: Preliminary appraisal
Viking Exploration, Inc.
d/b/a Blue Range Mining Company
Spotted Horse Mine
Fergus County, Montana

I agree with you that of the several exploration proposals described by Mr. Hoffman we could consider a project to explore projections of the Bonanza and Glory Hole veins on the sixth level. However, this is essentially a single objective which the prospective applicant prefers not to pursue to the exclusion of his other objectives. Economic factors of the proposal, too, are unknown--possible grade and tonnage of ore in the target area, length of drift to explore both projections, and the total expenses that would be incurred to accomplish the work. The contact between the limestone and porphyry may be quite irregular as it is on level 3 and require more drift footage than is shown on the map of level 6.

We also could consider participating in the proposal to explore the "point of limestone" target he describes on the second and fourth levels. However, you may have reasons for not considering this target.

Mr. Hoffman's main proposal to drift along the limestone-porphyry contact between the Spotted Horse shaft and the Kentucky Favorite property could not be assisted under present OME funding. The project is more prospecting than exploring and, therefore, is not eligible for assistance. It lacks specific geologic guides to ore, so it is not possible to compare the estimated cost of the proposed work with the value of ore one might find.

The other problems you mention are also to be resolved--the unknown cost of rehabilitation necessary to prepare the mine for safe operation, whether the applicant could pay its share of the costs, and could the applicant furnish a performance bond in lieu of lien and subordination agreements.

I fail to recognize a right-to-assignment provision in the Mining Lease and Option between Mr. Hoffman, d/b/a Blue Range Mining Co., and First Trust Company of Montana. Also, there is no consent to assignment document from First Trust Company with the Mining Sub-Lease and Option agreement between Hoffman and Viking Exploration, Inc. Both questions would have to be resolved in the event of a contract.

Hoffman's property map, Exhibit D, shows space between the Spotted Horse and Kentucky Favorite claims. The patent plat for the Kentucky Favorite claim suggests that the two claims are contiguous. If they are not, do the unpatented claims cover what appears to be open, unclaimed ground?

If Mr. Hoffman decides to request assistance to explore the smaller target areas mentioned above, we would be pleased to consider an application.

The material forwarded with your memorandum is enclosed.

Harold Kirkemo

Harold Kirkemo

Enclosures

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

HKirkemo/gla 6-7-72

United States Department of the Interior

GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION
656 U. S. Court House
Spokane, Wash., 99201

OFFICIAL COPY
O. M. E.
RECEIVED
MAY 30 1972
INITIALS | CODE
120

May 26, 1972

MEMORANDUM

To: Chief, Office of Minerals Exploration

From: Field Officer, Region I

Subject: Preliminary appraisal and examination
Viking Exploration, Inc.
d/b/a/ Blue Range Mining Company
Spotted Horse Mine
Fergus County, Montana

INTRODUCTION

Mr. Larry C. Hoffman, Mining Projects Engineer, Viking Exploration, Inc., telephoned me on May 9, 1972, from the OME office in Denver to discuss an application he intended to submit. He asked for my preliminary appraisal of the application prior to his formally submitting it. I received the application on May 10, 1972, and as it was necessary for me to be in Lewistown, Montana, for a final royalty inspection of the Gold Bug Mine, I arranged with Mr. Hoffman to schedule an on-site examination of the Spotted Horse mine during my brief stay in Lewistown.

On Monday evening, May 22, 1972, Mr. Hoffman and I discussed the proposal and examined some mine maps. The following day I spent about 4 hours at the mine examining the surface and parts of the upper six levels. I collected several rock specimens but did not cut any channel samples for assay. At the conclusion of my examination I advised Mr. Hoffman not to submit his application until I had discussed his proposal with you. My main concern is whether the proposed work is more in the nature of prospecting rather than exploration.

The enclosed information is that which I received from Mr. Hoffman and is the only copy I have available. I suggest that you return it to me.

General

The ore bodies in the Spotted Horse mine are in and near the brecciated contact between fine-grained gray Carboniferous limestone and Cretaceous(?) porphyry, either syenitic or rhyolitic. The ore bodies are crudely lenticular

in plan and have been mined on several levels which indicates they have greater vertical than horizontal continuity. Ore minerals are native gold and several tellurides. Gangue minerals are purple fluorite, greenish roscoelite, and quartz. Mr. Hoffman said that new ore bodies had been found by following narrow white talcy stringers which would suddenly enlarge into rich, minable ore bodies. Other controls or guides to ore bodies are not known.

Many have tried to operate the mine, but only one or two were successful, according to the application. The mine was dormant for several years but in 1968, Mr. Hoffman leased the property from the First Trust Company of Montana, dewatered it, and rehabilitated portions so that an examination of most of the levels can safely be made.

Examination

I examined the Smith Cut, South Cut, Glory Hole, and Discovery Pit on the surface, after which we went underground and I examined parts of the 1, 2, 4, 5, and 6 levels.

The surface cuts were either in fine-grained gray limestone or near a brecciated contact between limestone and porphyry. There are a few small fluorite lenses in some of the cuts near where ore presumably was mined, but there was no other evidence of ore. Even adjacent to the porphyry there were no contact minerals or other evidence to suggest ore, other than fluorite.

Comment

The application is well prepared and describes in detail most of the geologic features of economic interest. The maps are reduced from the 1-inch equal 40-feet originals but they do depict the main geologic features.

My main concern in trying to evaluate the proposal is whether the work is more in the nature of prospecting rather than exploration. For example, the proposed work on the 1 and the 6 level is to drift along a contact in the hopes of intersecting an ore body. The work on the 6 level might be justified to search for downward extensions of the Bonanza and Glory Hole veins. The drifting on the 1 level seems to be more in the nature of prospecting and one does not know if 100 or 700 feet will be successful, for there are no real objectives in the work other than to drift along the contact. There has been considerable drifting along the contact on the 1 level, but only one ore body was found.

On my way back to Lewistown from the Spotted Horse mine, I stopped to look into an open-pit at the Columbia mine. Here was well exposed the contact between limestone and porphyry. The pit trended at right angles to the contact, and this suggests to me that some crosscutting structure is necessary in addition to the contact.

I wish that I could recommend some kind of work to be done at the Spotted Horse mine for it has produced a fair tonnage of high grade silver-gold ore. I cannot improve on the suggestions made by Mr. Hoffman but feel lukewarm as to their probable success.

I will appreciate any comment you might care to make, particularly whether or not I should encourage Mr. Hoffman to submit a formal application. It might be pertinent that the First Trust Company refuses to sign the Lien and Subordination forms.

Willard P. Puffett

Willard P. Puffett

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

USGS-OME

JUN 1 - 1972

Dear Mr. Einarsen:

Thank you for your letter of May 8, 1972, urging an expanded minerals exploration loan program.

The National Mining and Minerals Policy Act of 1970 (P.L. 91-631) declared that it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in the orderly and economic development of domestic mineral resources and reserves. The First Annual Report of the Secretary of the Interior under this Act, dated March 1972, described the present financial assistance program for minerals exploration as inadequate for the implementation of the National Minerals Policy. It suggested relaxing the requirements for obtaining exploration loans in order to provide an opportunity and incentive for expanding the exploratory effort by private enterprise, both small and large.

Studies presently are under way on a proposal to correct by legislative action the several restrictive sections in Public Law 85-701, the Act establishing the Office of Minerals Exploration program. If the changes under consideration are made, we hope to offer a program in which industry will participate to the extent originally expected when the program started in 1958.

Sincerely yours,

(Sgd) John B. Rigg

Deputy Assistant Secretary of the Interior

Mr. Charles A. Einarsen
President
Viking Exploration, Inc.
820 Denver Center Building
1776 Lincoln Street
Denver, Colorado 80203

cc: Secretary Central
Secretary Reading (2)
General
AS/MR (2)
Dir. Chron
Division
OME File
~~OME File~~
OME Reading File
Mr. Kirkemo
130

195267

HKirkemo/gla 5-23-72

VIKING EXPLORATION, INC.

820 DENVER CENTER BUILDING • 1776 LINCOLN STREET • DENVER, COLORADO 80203 • 303-825-2209

CHARLES A. EINARSEN,
PRESIDENT

May 8, 1972

Honorable Hollis M. Dole
Assistant Secretary - Mineral Resources
U.S. Department of Interior
Washington, D.C.

Dear Secretary Dole:

I am writing because I am concerned that a congress that passed the 1970 Mining and Minerals Policy Act, to encourage private enterprise to develope a sound and stable mining industry, has also failed to support a major government agency aiding such private enterprise.

Since 1958 the Office of Minerals Exploration of the U.S. Geological Survey has been participating in exploration programs with small to medium size mining companies. The program has provided up to 75% of the cost of an approved exploration program. The OME succeeded the Defense Minerals Exploration Administration. The attached summary is from the 6th Annual Report of the OME, and shows the results of both programs. I think the most impressive figures are the ones showing the value of ore found for each government dollar invested. Note that the returns were higher under the better financed DMEA program.

At the present time, the OME functions with an exploration budget of about $200,000. This amount is only sufficient to help with 3 or 4 very small programs and hardly even justifies staffing the office. I submit that this is a nearly criminal situation in view of the mineral shortages of this country. In the event of a national crisis there is not going to be the money, manpower, time, or resources to go out and blindly search for new mineral reserves. An undiscovered orebody is a wasted asset. A known, undeveloped orebody is a wasting asset but may be drawn upon at any time. You might be interested to inquire into the percentages of strategic metals now imported that would not be available in event of international conflict. For gold alone, the U.S. consumes over 3 times its production.

A properly financed OME program would not only help secure the nations position, but would bolster the currently depressed exploration industry with a resulting increase in cash flow and available jobs. The ore reserves discovered would be the basis for new mines that would further increase productivity and decrease unemployment. These mines would often be located in areas that desperatley need a firm industrial base.

On this basis I urge you to review the situation and support a vastly increased budget, not for the USGS in general, but specifically for the Office of Mineral Exploration.

Thank you for your consideration of this matter.

Sincerely yours,

Viking Exploration, Inc.

Charles A. Einarsen

Charles A. Einarsen

CAE/pj
encl.

INTERIOR DEPARTMENT
RECEIVED
MAY 12 1972
OFFICE OF THE
ASSISTANT SECRETARY

U.S. Mineral Output Far Short of Need

WASHINGTON — American primary production of minerals and the commodities made from minerals fell more than $8 billion short of meeting our 1970 demands.

In 1985, it will fall $31 billion short.

In 2000, it will fall $64 billion short.

Those estimates, based on conservative projections, are contained in the first annual report of the Interior Department pursuant to the 1970 Mining and Minerals Policy Act.

"It will take about 10 years for the shortages of metals in this country to become apparent for all to see. It will hit everyone when the housewife can't get her refrigerator repaired, or she can't buy a new refrigerator or washing machine for lack of metal," said Harry L. Moffett, deputy assistant interior secretary.

Moffett was in charge of preparing this first annual report to the President and Congress under the 1970 Act.

The act states it shall be national policy to foster and encourage private enterprise to develop a sound and stable domestic mining industry; to foster research and reclamation of mineral waste products and of mined land. It requires Interior to submit an annual report on the state of mining and trends in the mining industry.

"In 1970, with less than 6 per cent of the world's population, the United States consumed 30 per cent of the world mineral production. We have to make up our deficits in metals by imports, and they are growing larger each year. If we continue our growing reliance on foreign sources of supply at the present rates, I don't know where we are going to be. The shortages pose a real national security problem for us," Moffett stated.

The U.S. uses 91 minerals and metals, but it had to import at least a portion of 44 of them to meet demand, which has doubled between 1950-70.

The nation is totally deficient in such key minerals as thorium, titanium, asbestos, industrial diamonds, sheet mica, quartz crystal and strontium, the report said.

The environmental movement in this country has brought about air and water pollution control laws and regulations which have resulted in closing a number of smelters, he said. "Some of these smelters were no doubt obsolete, or close to it. But the pollution control laws were the straw that broke the camel's back and forced them 18 months. These closings not only knocked out the smelters; they also knocked out production of every little mine in their vicinity, as they have no place any longer to process their ore. This is a major problem now for the small mines in Colorado, for example," Moffett said.

On the other hand, two developments abroad are cutting the United States out of access to prime ore bodies and also cutting into domestic jobs, Moffett stated. One is the expropriation of American companies, such as that which occurred to Anaconda and Kennecott in Chile. The other is the development of the "value added" concept by foreign nations.

Developing nations, in particular, are passing laws requiring the processing of ore or the manufacture of metal in the producing countries before the product can be exported. " 'Value added' has cost American workers many thousands of jobs in processing and manufacturing metals and metal products," Moffett said.

Long dominant in mining abroad, American companies are being challenged as never before by cartel-type industries in Japan, West Germany and France which are taking steps to pin down abroad under long-term contracts the minerals they don't have. Japan has purchased coal reserves even in this country, for example. Both the Soviet Union and Japan have or are about to pass the United States in the production of steel, and Russia will soon pass the United States in all base metals output, according

tically now to turn this trend around? Moffett was asked. "Improve the climate for mining," he replied. The federal government and the individual states cannot continue to "change the rules of the ball game and expect mining companies to continue to invest in mines and processing plants. We get more compalints from industry about this problem than any other," Moffett said.

Moffett said shortages are likely to become so acute in some metals that it will be only a matter of time before some types of incentives are provided, probably through the tax laws rather than by direct subsidy, to encourage prospecting, exploration and development and processing of certain metals. These might take the form of rapid tax write-offs, a complete write-off of capital investment, or double deduction of exploration costs.

He said it would be only a matter of time "before there is some type of relaxation of the antitrust laws, particularly in the field of research." Pooling research efforts by both industry and government is essential if we are to develop needed substitutes for metals and minerals in short supply, such as using domestic clay rather than imported bauxite to make aluminum, he said. "Companies should be able to pool their ideas and pool their patents so there is not so much duplication of effort and loss of time in research efforts," Moffett said.

The DMEA program differed from the OME program in 1) allowing participation by all companies, large or small, 2) not limiting the amount of Government participation in a single contract, and 3) not charging interest on funds spent by the Government on exploration projects. Comparative data on the two programs through June 30, 1971 are shown in Table 17:

17. Comparison of DMEA and OME programs

	DMEA	OME
Period of operation	Mid-1951 to 6/30/58	Since August 1958
Years operated	7	13
Applications received	3,888	889
Contracts executed	1,159	196
Percentage of applications resulting in contracts	30 percent	22 percent
Contracts certified as discoveries	399	47
Percentage of contracts certified	34 percent	24 percent
Government funds spent on contracts	$23,345,488	$4,203,362
Estimated value of ore reserves discovered	$1 billion	$95 million
Estimated recovery value of ore found for each dollar of Gov't. funds spent	$43	$23
Royalties received	$7,133,687	$387,661
Value of ore produced on which royalties were paid	$142,675,000	$7,753,000
Royalties received as percent of Gov't. funds spent	31 percent	9 percent
Contracts repaid in full	97	5

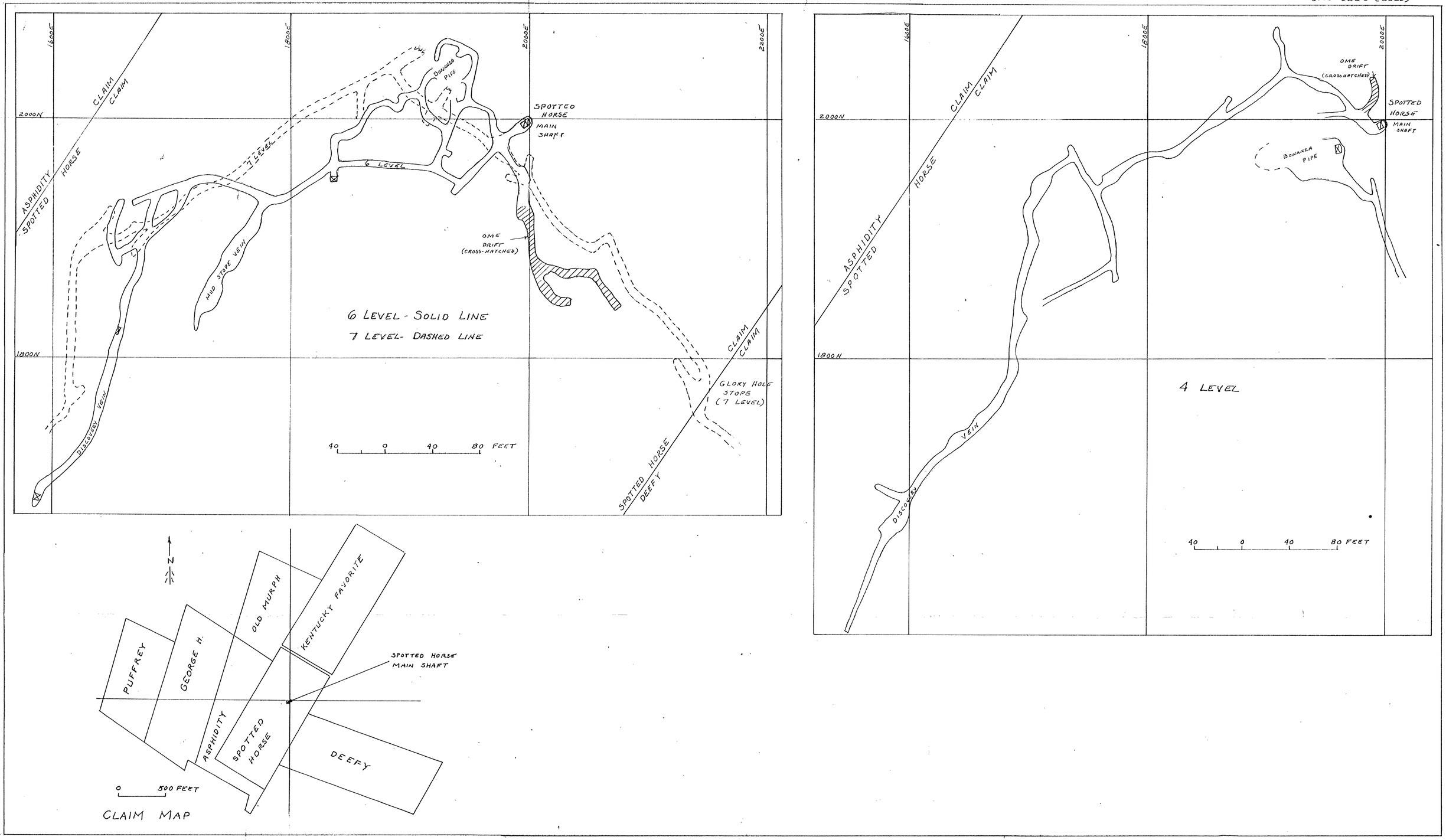


FIGURE 1- CLAIM AND PARTIAL LEVEL MAPS, SPOTTED HORSE MINE, FERGUS COUNTY, MONTANA

U.S. GEOLOGICAL SURVEY
OFFICE OF MINERALS EXPLORATION

OME-6880 (GOLD)

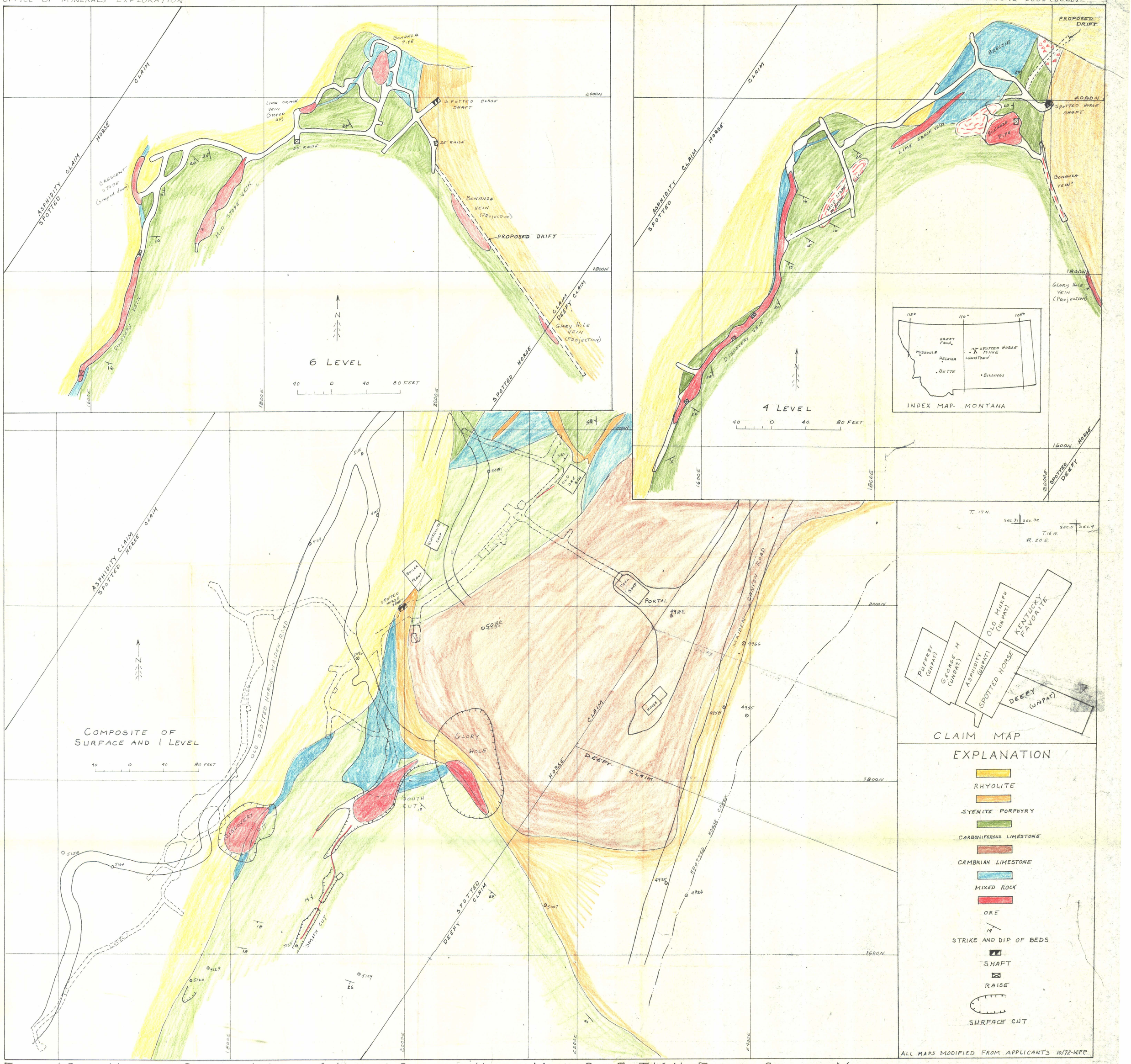
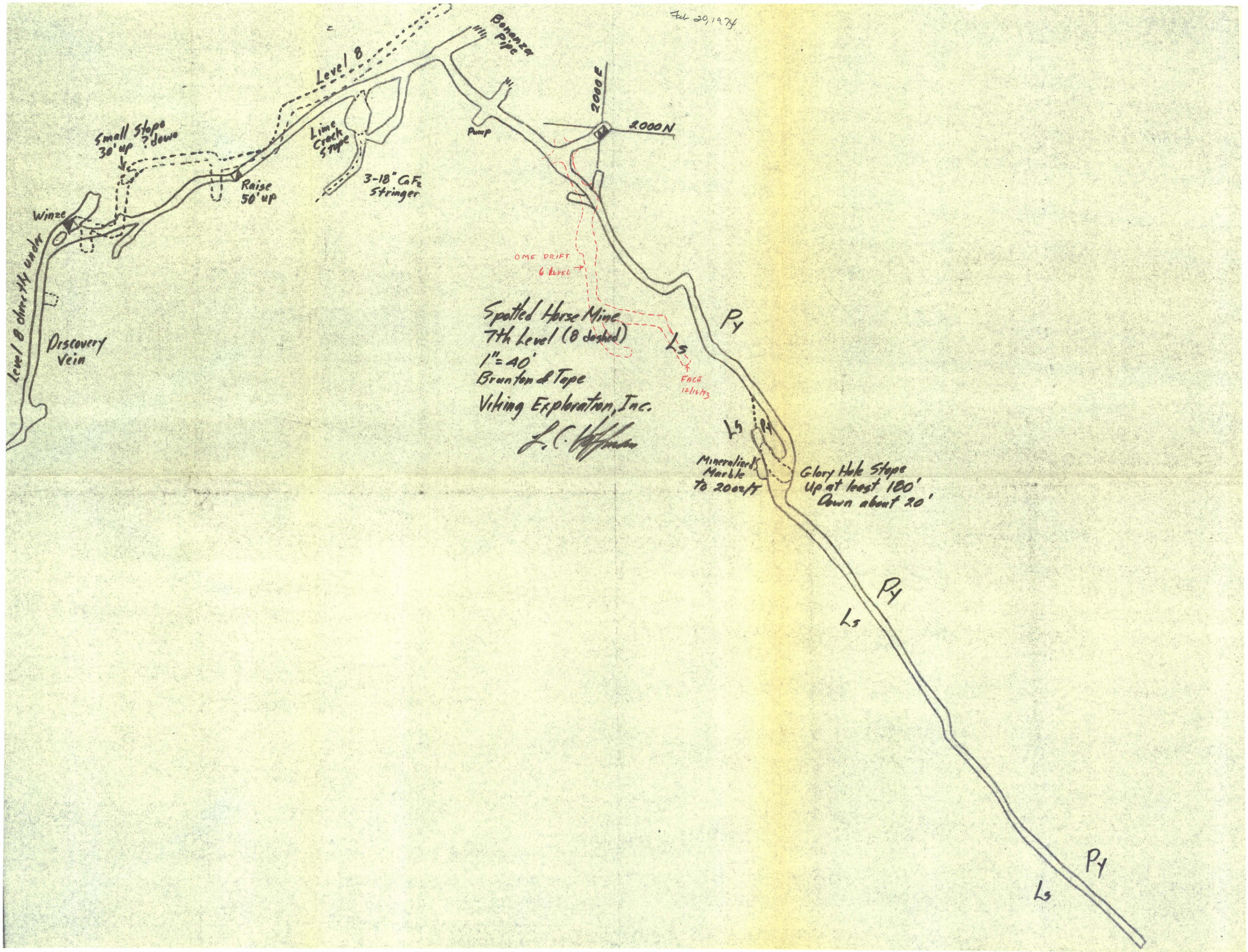


FIGURE 1-PLAN MAPS OF SURFACE, 1, 4, AND 6 LEVELS, SPOTTED HORSE MINE, SEC. 5, T. 16 N., FERGUS COUNTY, MONTANA
R. 20 E.,

Feb 20, 1974


Level 8
Bonanza Pipe
2000 E
2000 N
Pump
Small Stope 30' up ?down
Lime Creek Stope
3-18" CaF2 Stringer
Raise 50' up
Winze
Level 8 directly under
Discovery Vein
OME DRIFT
6 LEVEL
Spotted Horse Mine
7th Level (8 dashed)
1" = 40'
Brunton & Tape
Viking Exploration, Inc.
L. C. Hoffman
Py
Ls
FACE
12 lights
Ls
Py
Mineralized Marble to 20 oz/T
Glory Hole Stope
Up at least 180'
Down about 20'
Py
Ls
Py
Ls