2366 - Athletic Mining Co., Graham County, Ariz. 2/26/52 Subject application for expl ation assistance sent to Storms with brochure) and an info. copy of e memo to Anderson.

DMA Form 1

DEFENSE MINERALS ADMINISTRATION
Control Slip

CONTROLLED DOCUMENT

DMEA ~~XXXX~~ Docket No. 2366

DO NOT DETACH THIS SLIP

Action on this document is recorded and controlled in Reports and Records Branch. Any movement of this document between divisions or offices of DMA or movement outside DMA must be reported to the Reports and Records Branch. Actions taken that affect status of the case must also be reported.

This document has been recorded as
EXPLORATION PROJECT

Any action taken to change the type of request for assistance must be promptly reported to the Reports and Records Branch. Use DMA Form 2 for submitting these reports.

Routing Slip
(Copies to U.S.B.M., U.S.G.S., & Reg. IV)

To:	CODE 500 Rm. 2614	Date	2-6-52
To:	Op. Comm.	Date	2/15/52
To:	Operating Comm	Date	2/28/52
To:	Op Com	Date	9-23-52
To:	Op Com	Date	11-14-52
To:	Oper Com	Date	4-17-53
To:		Date	
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CONTROLLED DOCUMENT

M-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc

Idm-E378

Government Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

EXPLORATION PROJECT CONTRACT[1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Athletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona, P. O. Box 540, Fort Smith, Arkansas, hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Graham, described as follows:[3] Four patented mining claims, the Panama, Norton, Curtis, and Colon. The claims are situated in southern part of Section 25 and in the Northern part of Section 36, all lying in Township 5 South; Range 19 East; as shown on attached map, Fig. 2.

the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

~~(b) That the Operator will expend, in possession and the Owners Consent to the Exploration~~

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Lead-zinc

in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) The Government's payment in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 50 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $50,225.00, which is 50 percent of $100,450.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of disputes as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C O Mitteudorf
Acting Administrator
Defense Minerals Exploration Administration

Athletic Mining Company
(Operator)

By _____

I, _____, certify that I am the secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ 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]

U. S. GOVERNMENT PRINTING OFFICE 16—66328-1

EXPLORATION PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMEA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each, one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00*

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8" x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8', compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) Independent Contracts

Stages I and II

None

(2) Labor, Supervision and Consultants

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) Operating Materials and Supplies

Stages I and II

None (except as indicated in (6) and (7))

(4) Operating Equipment

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment. 3,000.00*

(5) Rehabilitation and Repairs

Stages I and II

None

(6) New Buildings, Improvements, Installations

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

MF-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc

Idm-E378 Field Team's Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

EXPLORATION PROJECT CONTRACT[1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Athletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.
P. O. Box 540
Fort Smith, Arkansas

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[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
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(*b*) The Government's payments in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay **50** percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $**50,225.00**, which is **50** percent of $**100,450.00**, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* **The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.**

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Athletic Mining Company
(Operator)

By [signature]
Acting Administrator
Defense Minerals Exploration Administration

By

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then 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 PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMEA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00*

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8" x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8' compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) **Independent Contracts**

Stages I and II

None

(2) **Labor, Supervision and Consultants**

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) **Operating Materials and Supplies**

Stages I and II

None (except as indicated in (6) and (7))

(4) **Operating Equipment**

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment. 3,000.00*

(5) **Rehabilitation and Repairs**

Stages I and II

None

(6) **New Buildings, Improvements, Installations**

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

(7) **Miscellaneous**

Stage I

Supplies and Assaying	$ 450.00	
Accounting - 6 months @ $50/month	300.00	$ 750.00*

Stage II

Supplies and Assaying	600.00	
Accounting - 15 months @ $50/month	750.00	1,350.00*

(8) **Contingencies**

Stage I

None

Stage II

For unforeseen expenditures	1,600.00 *

S U M M A R Y

Total Estimated Cost Stage I	$21,875.00*
Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

MF-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc

Idm-E378 Finance Office's Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

EXPLORATION PROJECT CONTRACT[1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Atuletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.
P. O. Box 540
Fort Smith, Arkansas

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Graham, described as follows:[3] Four patented mining claims, the Panama, Norton, Curtis, and Colon. The claims are situated in southern part of Section 25 and in the Northern part of Section 36, all lying in Township 5 South; Range 19 East; as shown on attached map, Fig. 2.
the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

(*b*) ~~That the Operator [illegible]~~
The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Lead-zinc

in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related [redacted] allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) The Government's payments in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 50 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $50,225.00, which is 50 percent of $100,450.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Athletic Mining Company
(Operator)

By C O Mittendorf
Acting Administrator
Defense Minerals Exploration Administration

By ______________________

I, ______, certify that I am the ______ secretary of the corporation named as Operator herein; that ______, who signed this contract on behalf of the Operator, was then ______ 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]

U. S. GOVERNMENT PRINTING OFFICE 16—66328-1

EXPLORATION PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMEA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00 *

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8" x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8' compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) **Independent Contracts**

Stages I and II

None

(2) **Labor, Supervision and Consultants**

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) **Operating Materials and Supplies**

Stages I and II

None (except as indicated in (6) and (7))

(4) **Operating Equipment**

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment.	3,000.00*

(5) **Rehabilitation and Repairs**

Stages I and II

None

(6) **New Buildings, Improvements, Installations**

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

(7) **Miscellaneous**

Stage I

Supplies and Assaying	$ 450.00	
Accounting - 6 months @ $50/month	300.00	$ 750.00 *

Stage II

Supplies and Assaying	600.00	
Accounting - 15 months @ $50/month	750.00	1,350.00 *

(8) **Contingencies**

Stage I

None

Stage II

For unforeseen expenditures	1,600.00 *

S U M M A R Y

Total Estimated Cost Stage I	$21,875.00*
Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

MF-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc
Idm-E378
Docket Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

EXPLORATION PROJECT CONTRACT[1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and[2] Athletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.
P. O. Box 540
Fort Smith, Arkansas

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Graham, described as follows:[3] Four patented mining claims, the Panama, Norton, Curtis, and Colon. The claims are situated in southern part of Section 25 and in the Northern part of Section 36, all lying in Township 5 South; Range 19 East; as shown on attached map, Fig. 2.
the Operator represents and undertakes:[4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for[5] Lead-zinc
in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related [redacted] allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) The Government's payments in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 50 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $ 50,225.00, which is 50 percent of $ 100,450.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By C. P. Mitteudorf
Acting Administrator
Defense Minerals Exploration Administration

Athletic Mining Company
(Operator)

By _____

I, _____, certify that I am the Secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ 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]

U. S. GOVERNMENT PRINTING OFFICE 16—66328-1

EXPLORATION PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMEA-2366

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Description of the Work

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Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

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Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

MF-209
(June 1951)
(Revised Feb. 1952)

DOCKET NO. D[redacted]A 2356

COMMODITY Lead-Zinc

Idm-E378
Division Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

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Fort Smith, Arkansas

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(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related [redacted] allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) The Government's payme in all cases will be based on actual, neces costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration, with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay **50** percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $**50,225.00**, which is **50** percent of $**100,450.00**, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Athletic Mining Company
(Operator)

By [signature]
Acting Administrator
Defense Minerals Exploration Administration

By

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then 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.

[signature]

[CORPORATE SEAL]

EXPLORATION PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMEA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00*

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8" x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8' compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) Independent Contracts

Stages I and II

None

(2) Labor, Supervision and Consultants

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) Operating Materials and Supplies

Stages I and II

None (except as indicated in (6) and (7))

(4) Operating Equipment

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment.	3,000.00*

(5) Rehabilitation and Repairs

Stages I and II

None

(6) New Buildings, Improvements, Installations

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

(7) **Miscellaneous**

Stage I

Supplies and Assaying	$ 450.00	
Accounting - 6 months @ $50/month	300.00	$ 750.00*

Stage II

Supplies and Assaying	600.00	
Accounting - 15 months @ $50/month	750.00	1,350.00*

(8) **Contingencies**

Stage I

None

Stage II

For unforeseen expenditures	1,600.00 *

S U M M A R Y

Total Estimated Cost Stage I	$21,875.00*
Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

MF-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc
Idm-E378

Operator's Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 27 1953

EXPLORATION PROJECT CONTRACT [1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Athletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.
P. O. Box 540
Fort Smith, Arkansas

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Graham, described as follows: [3] Four patented mining claims, the Panama, Norton, Curtis, and Colon. The claims are situated in southern part of Section 25 and in the Northern part of Section 36, all lying in Township 5 South; Range 19 East; as shown on attached map, Fig. 2.

the Operator represents and undertakes: [4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

~~(b) That the Operator [illegible] subordination agreement to a lien is attached.~~

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within 60 days from the date of this contract shall commence work on a project of exploration for [5] Lead-zinc

in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

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(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

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(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

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[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
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[5] Name of mineral or minerals.

(*b*) The Government's payments in all cases will be based on actual, necessary costs (including contract unit prices) incurred not in excess of any "allowable maximum," and not in excess of the fixed percentage of the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

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(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

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(1) One and one-half ($1\frac{1}{2}$) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half ($1\frac{1}{2}$) percent of any such net amounts, plus one-half ($\frac{1}{2}$) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half ($1\frac{1}{2}$) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half ($3\frac{1}{2}$) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided*, that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By

Acting Administrator
Defense Minerals Exploration Administration

Athletic Mining Company
(Operator)

By

I, , certify that I am the secretary of the corporation named as Operator herein; that , who signed this contract on behalf of the Operator, was then 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 PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMKA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00*

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8" x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8' compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) Independent Contracts

Stages I and II

None

(2) Labor, Supervision and Consultants

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) **Operating Materials and Supplies**

Stages I and II

None (except as indicated in (6) and (7))

(4) **Operating Equipment**

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment. 3,000.00*

(5) **Rehabilitation and Repairs**

Stages I and II

None

(6) **New Buildings, Improvements, Installations**

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

(7) **Miscellaneous**

Stage I

Supplies and Assaying	$ 450.00	
Accounting - 6 months @ $50/month	300.00	$ 750.00*

Stage II

Supplies and Assaying	600.00	
Accounting - 15 months @ $50/month	750.00	1,350.00*

(8) **Contingencies**

Stage I

None

Stage II

For unforeseen expenditures	1,600.00*

S U M M A R Y

Total Estimated Cost Stage I	$21,875.00*
Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

P. O. BOX 792
SAFFORD, ARIZONA

P. O. BOX 540
FORT SMITH, ARKANSAS

ATHLETIC MINING COMPANY

HARVIE L. HORTON, VICE PRES. AND MGR.

SAFFORD, ARIZONA

Fort Smith, Arkansas
April 7, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 9 1953

Mr. C.O. Mittendorp, Administrator
Defense Mineral Exploration Administration
Washington 25, D.C.

Dear Mr. Mittendorp:

Your registered letter of April 3rd was received, as you know.

We are sorry that your previous letter of December 11th had been overlooked; however, herewith enclosed, you will find original and four copies as requested, of the proposed contract No. 2366 which we elected to pass up.

Cac
4/9

Yours very truly,

Raymond F. Orr

Raymond F. Orr
President
Fort Smith, Arkansas

RFO/j

MF-200
(June 1951)
(Revised Feb. 1952)

DOCKET NO. DMEA 2366

COMMODITY Lead-Zinc

Idm-E378
Extra Copy

UNITED STATES OF AMERICA
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

EXPLORATION PROJECT CONTRACT [1]

IT IS AGREED this 30th day of July, 1952, between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Athletic Mining Company, a corporation duly organized and existing under and by virtue of the laws of the State of Arizona.
P. O. Box 540
Fort Smith, Arkansas

hereinafter called the "Operator," as follows:

ARTICLE 1. *Authority for contract.*—This agreement is entered into under the authority of the Defense Production Act of 1950, as amended, pursuant to DMEA Order 1 entitled "Government Aid in Defense Exploration Projects."

ARTICLE 2. *Operator's property rights.*—With respect to that certain land situated in the State of Arizona, County of Graham, described as follows: [3] Four patented mining claims, the Panama, Norton, Curtis, and Colon. The claims are situated in southern part of Section 25 and in the Northern part of Section 36, all lying in Township 5 South; Range 1, East; as shown on attached map, Fig. 2.

the Operator represents and undertakes: [4]

(*a*) That the Operator is the owner, in possession and entitled to possession, and that the property is subject only to the following claims, liens, or encumbrances as to each of which the subordination agreement of the holder is attached:

None

~~(*b*) That the Operator is a lessee, in possession and entitled to possession, and the owner's consent~~

The Operator shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of the exploration project without any allowance for the use, rental value, depreciation, depletion, or other cost of acquiring, owning, or holding possession thereof.

ARTICLE 3. *Exploration project.*—The Operator, within _____ days from the date of this contract shall commence work on a project of exploration for [5] Lead-zinc

in or upon the described land; and shall bring the project to completion within a period of 24 months from the date of this contract. The work to be performed is more fully described in Exhibit "A" attached hereto, which, with any maps or drawings thereto attached, are made a part of this contract. The Government will contribute to the cost of this work as hereafter provided.

ARTICLE 4. *Performance of the work.*—(*a*) *Operator's responsibility.* The work shall be performed efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for workmens' compensation and employers' liability insurance, with suitable and adequate equipment, materials, and labor, to bring the project to completion within the time fixed. To the extent specified in Exhibit "A," attached hereto, the work may be performed by independent contractor or contractors; and work not specified in Exhibit "A" for performance by independent contractor may nevertheless be so performed upon amendment of Exhibit "A," as agreed to by the parties, to state the work to be so performed and the estimated unit costs thereof, as provided hereafter.

(*b*) *Independent contracts.*—Any independent contract for the performance of work shall be on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved), or on some basis that will indicate the amount due for work performed at any stage of the work to be performed under such independent contract. The Government shall not be nor be considered to be a party to any such independent contract, and the Government's right to terminate the exploration project contract under any of its provisions shall not in any manner be affected by reason of any such independent contract. If the reference in Exhibit "A" to any such independent contract states that the Government's approval thereof is required, the Government may refuse to participate in the cost thereof unless and until it has given its written approval of the independent contract.

(*c*) *Government may inspect.*—The Government shall have the right to enter and observe and inspect the work at all reasonable times, and the Operator shall provide the Government with all available means for doing so. The Government may consult with and advise the Operator on all phases of the work.

ARTICLE 5. *Estimated costs of the project.*—A statement of the estimated cost of the project is set forth in Exhibit "A," attached hereto. Except insofar as any item of requirement or the estimated cost thereof set forth in Exhibit "A" is there or elsewhere designated as an "allowable maximum," such items of requirement and of related cost are estimates only, and may be exceeded to the extent that the Government may from time to time approve for the most economic and beneficial performance of the work within the limitation of the total aggregate estimate of costs. The Government's approval of any such excess over the estimate for an item of requirement or related cost will be signified by its approval and payment of any invoice or voucher for payment which expressly calls attention to such excess. Items expressly designated in Exhibit "A" or elsewhere as "allowable maximum," and the total aggregate estimated cost are limitations, and any excess therein will be for the sole account of the Operator in which the Government will not participate.

ARTICLE 6. *Allowable costs of the project.*—(*a*) The costs of the project in which the Government will participate are limited to the following:

(1) *Independent contracts.*—Payments to independent contractors under independent contracts listed in Exhibit "A." The estimated cost of any work to be performed under an independent contract is or shall be included in the estimate of costs in Exhibit "A" in terms of the estimated numbers of units of work to be performed, the estimated amount to be paid per unit, and the estimated total amount to be paid to the independent contractor, and such estimates shall be allowable maximums above which the Government will not contribute. Regardless of the provisions of any such independent contract, the Government will participate in the payments to the independent contractor only on account of work actually performed and that conforms with the provisions of the exploration project contract, and only to the extent that the Government deems the unit prices for the work under the independent contract to be reasonable and necessary. No such independent contract shall have the effect of increasing the estimated total cost of the exploration project contract nor the maximum amount which the Government will pay as provided in the exploration project contract.

(2) *Labor, supervision, consultants.*—Labor, supervision and technical services (including engineering and geological consultants), a schedule of which is included in the estimate of costs set forth in Exhibit "A." The requirements and related estimated costs for supervision and technical services are allowable maximums.

(3) *Operating materials and supplies.*—Necessary materials and supplies including items of equipment costing less than $50.00 each, and power, water, and fuel, a schedule of which is included in the estimate of costs in Exhibit "A."

(4) *Operating equipment.*—Any operating equipment to be rented or purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or the allowable depreciation, as the case may be, a schedule of which is included in Exhibit "A." Any items listed as owned and to be furnished by the Operator, and related allowable depreciation, are allowable maximums.

(5) *Rehabilitation and repairs.*—Any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and to be devoted to the purposes of the exploration contract, a schedule of which is included in the estimate of costs set forth in Exhibit "A." These items are allowable maximums.

(6) *New buildings, improvements, installations.*—Any necessary buildings, fixed improvements, or installations to be purchased, installed, or constructed for the purposes of the exploration work, with the estimated cost of each, a schedule of which is included in the estimate of costs in Exhibit "A." All of these items are allowable maximums.

(7) *Miscellaneous.*—Repairs to and maintenance of operating equipment (not including initial rehabilitation or repairs of the Operator's equipment), analytical work, accounting, workmen's compensation and employers' liability insurance and payroll taxes.

(8) *Contingencies.*—Such other necessary, reasonable direct costs of performing the exploration work, within the limit of the total aggregate estimate of costs, whether or not included in any schedule of costs in Exhibit "A," as may be approved by the Government in the course of the work, as indicated by its approval and payment of invoices and vouchers.

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] State name, address, and nature of organization if any.
[3] Give legal description or enough to identify the property, particularly excluding any land or interest therein to which the Government's lien is not to attach or the production from which is not to be subject to the Government's percentage royalty.
[4] Strike out the provision not applicable.
[5] Name of mineral or minerals.

(*b*) The Government's payments in [illegible]ases will be based on actual, necessary co[illegible] (including contract unit prices) incurred not in excess of any "allowable ma[illegible]mum," and not in excess of the fixed percentage [illegible] the total aggregate estimated cost. Costs will be considered to be incurred only as they are or become due and payable.

(*c*) No items of general overhead, corporate management, interest, taxes (other than payroll and sales taxes) or any other indirect costs, or work performed or costs incurred before the date of this contract, shall be allowed as costs of the project in which the Government will participate.

ARTICLE 7. *Reports, accounts, audits.*—(*a*) *Progress reports.* The Operators shall provide the Government with monthly reports of work performed and costs (including contract unit prices) incurred under the contract, in quintuplicate (five copies), upon forms provided by the Government. These progress reports shall be certified by the Operator, and shall constitute both the Operator's invoice of costs incurred on the project during the period covered by the report and his voucher for repayment by the Government, unless the Government requires the use of a standard voucher form with invoice attached. Progress reports shall include surface and/or underground engineering-geological maps or sketches showing the progress of the exploration; with assay-reports on samples taken concurrently with the advance in mineralized ground.

(*b*) *Final report.*—Upon completion of the exploration work or termination of the contract the Operator shall provide the Government with an adequate geological and engineering report, in quintuplicate (five copies), including an estimate of ore reserves resulting from the exploration work.

(*c*) Compliance with requirements.—If, in the opinion of the Government, any of the Operator's reports are insufficient or incomplete, the Government may procure the making or completion of such reports and attachments as an expense of the exploration work; and the Government may withhold approval and payment of any vouchers depending upon insufficient or incomplete reports.

(*d*) *Accounts and audits.*—The Operator shall keep suitable records and accounts of operations, which the Government may inspect and audit at any time. The Government may at any time require an audit of the Operator's records and accounts by a certified public accountant, the cost thereof to be treated as a cost of the project. The Operator shall keep and preserve said records and accounts for at least 3 years after the completion of the project or the termination of this contract. Upon the completion of the project or termination of the contract the Operator shall render a final account as provided in Article 12.

ARTICLE 8. *Payments by the Government.*—(*a*) The Government will pay 50 percent of the allowable costs incurred, as they accrue, in an aggregate total amount not in excess of $50,225.00, which is 50 percent of $100,450.00, the agreed, estimated total cost of the project in which the Government will participate; *Provided,* that until the Operator's final report and final accounting have been rendered to the Government, and any final auditing required by the Government has been made, and a final settlement of the contract has been made, the Government may withhold from the last voucher or vouchers such sums as it sees fit not in excess of ten (10) percent of the maximum total which the Government might have been called upon to pay under the terms of the contract.

(*b*) The Government may make any payment or payments direct to independent contractors and to suppliers, for the account of the Operator, rather than to the Operator.

ARTICLE 9. *Repayment by Operator.*—(*a*) If, at any time, the Government considers that a discovery or a development from which production may be made has resulted from the exploration work, the Government, at any time not later than 6 months after the Operator has rendered the required final report and final account, may so certify in writing to the Operator. The certification shall describe broadly or indicate the nature of the discovery or development. In the event of such certification, any minerals mined or produced from the land described in Article 2 within 10 years from the date of this contract, including any mined or produced before the certification, shall be subject to a percentage royalty which the Operator or his successor in interest shall pay to the Government, upon the net smelter returns, the net concentrator returns, or other net amounts realized from the sale or other disposition of any such production, in whatever form disposed of, including ore, concentrates, or metal, until the total amount contributed by the Government, without interest, is fully repaid, or said 10 years have elapsed, whichever occurs first, as follows:

(1) One and one-half (1½) percent of any such net amounts not in excess of eight dollars ($8.00) per ton.

(2) One and one-half (1½) percent of any such net amounts, plus one-half (½) percent of such net amounts for each additional full fifty cents ($0.50) by which such net amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such net amounts.

(For instance: The percentage royalty on a net amount of five dollars ($5.00) per ton would be one and one-half (1½) percent; on a net amount of ten dollars ($10.00) per ton, three and one-half (3½) percent.)

(*b*) As here used, "net smelter returns," "net concentrator returns," and "other net amounts realized from the sale or other disposition," mean gross revenue from sales; or if not sold, the market value of the material after it is mined in the form in which and the place where it is held. In the case of integrated operations in which the material is not disposed of as such, these terms mean what is or would be gross income from mining operations for percentage depletion purposes in income-tax determination.

(*c*) To secure the payment of its percentage royalty, the Government shall have and is hereby granted a lien upon the land described in Article 2 and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(*d*) This article is not to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any mining or production operations.

ARTICLE 10. *Assignment, transfer, or loss of Operator's interest.*—Without the written consent of the Government, the Operator shall not assign or otherwise transfer or hypothecate this contract or any rights thereunder. The Operator shall not make any voluntary nor permit any involuntary transfer or conveyance of the Operator's rights in the land described in Article 2, without making suitable provision for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof; *Provided,* that mere failure by the Operator to maintain the Operator's rights in the land, without any consideration running to the Operator other than relief from the cost of maintaining such rights (as by surrender of a leasehold, failure to perform assessment work, or failure to exercise an option), coupled with complete abandonment by the Operator of all interest in or operations on the land for a period of 10 years from the date of this contract, shall not constitute such a transfer or conveyance. Should the Operator make or permit any transfer or conveyance in violation of this provision, the Operator shall be and remain liable for payment to the Government of the same amounts, at the same times, as would have been paid under the terms of the percentage royalty on production. If for any reason the net smelter returns, net concentrator returns, or other net amounts realized from the sale or other disposition of such production are not available as a means of measuring the amount of the Operator's liability, the amount thereof shall be estimated as well as may be, and in the event of dispute as to such estimates, the determination thereof by the Administrator of Defense Minerals Exploration Administration or by his successor shall be final and binding upon the Operator.

ARTICLE 11. *Title to and disposition of property.*—All facilities, buildings, fixtures, equipment, or other items costing more than $50.00 each, paid for or purchased with funds contributed jointly by the Operator and the Government, although title may be taken in the name of the Operator, shall belong to the Operator and the Government jointly, in proportion to their respective contributions, and upon the completion of the work or the termination of the contract shall be disposed of promptly by the Operator for the joint account of the Government and the Operator, either by return to the vendor, by sale to others, or purchase by the Operator at a price at least as high as could otherwise be obtained, as may appear to be for the best interest of the Government, unless the Government, in writing, waives its interest in any such item. If necessary to accomplish such disposition, the Operator shall dismantle, sever from the land, and remove any such item, the cost thereof to be for the joint account of the parties in proportion to their respective interests. If the Operator, within 90 days after the receipt of written notice from the Government, fails, neglects, or refuses to dispose of such property, the Government may itself enter upon the land, take possession of, and remove and dispose of any such property as above provided.

ARTICLE 12. *Termination and completion.*—The Government may, at any time, by written notice to the Operator, terminate this contract: (*a*) If the Operator fails to provide his share of the money necessary to prosecute operations pursuant to the terms of the contract; (*b*) if the Operator, in the opinion of the Government, fails to prosecute operations pursuant to the terms of the contract; or (*c*) if in the opinion of the Government, operations up to the time of the notice have not indicated the probability of making any worth while discovery and in the opinion of the Government further operations are not justified. Upon the completion of the project or any termination of the contract the Operator shall dispose of any remaining materials, supplies, facilities, buildings, fixtures, and equipment in which the Government has an interest, for the joint account of the Operator and the Government in the proportion of their respective interests; shall render to the Government a full and final accounting of his operations under the contract and his expenditures of money; and shall pay to the Government its pro rata share of any money remaining.

ARTICLE 13. *Changes and added provisions.* The Operator's obligation to bring the project to completion continues only as long as the accumulated allowable costs of the project in which the Government will participate do not exceed the agreed, total estimated cost of the project set forth in Article 8.

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

Athletic Mining Company
(Operator)

By _____

Acting Administrator
Defense Minerals Exploration Administration

By _____

I, _____, certify that I am the _____ secretary of the corporation named as Operator herein; that _____, who signed this contract on behalf of the Operator, was then _____ 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]

U. S. GOVERNMENT PRINTING OFFICE 16—66328-1

EXPLORATION PROJECT CONTRACT
ATHLETIC MINING COMPANY
DOCKET NO. DMRA-2366

EXHIBIT "A"

Description of the Work

Stage I

In this stage there will be approximately 2,550 feet of diamond drilling, i. e. 7 vertical and 4 inclined holes will be drilled from surface locations as shown on the attached map Fig. 3. At stations A. B. C. D., two holes each one vertical and the other inclined at 50° - will be drilled, and at Stations E. F. and G. vertical holes will be drilled to test the downward extension of the ore. However, the need for, and location of holes at E. F. and G. will depend on the findings in holes drilled at A. B. C. and D., and this drilling will only be undertaken upon the expressed approval of the Government engineers.

Stage II

The work in this Stage will not commence until after the completion of the work in Stage I and will be undertaken only if, in the opinion of the Government engineers, the results of Stage I warrant further exploration of the deposit.

In order to permit flexibility in the planning and execution of the work, no attempt will be made to specify in advance the location, direction of, or extent of individual mine openings or drill holes, although the proposed work plan is indicated on the attached map, entitled "Fig. 4." However, the following work will be performed: (a) sinking a vertical shaft 165 feet (b) crosscutting and drifting 1100 feet (c) two-compartment raising 125 feet (d) one-compartment raising 275 feet. All work must be approved by the Government engineers.

Estimated Cost of the Project
(*Indicates Allowable Maximum)

The Government will contribute to the cost of diamond drilling in Stage I and to the cost of drifting, crosscutting, raising and shaft sinking in Stage II as they accrue, for units of work actually performed, on the basis of the agreed estimated unit costs per foot in lieu of actual costs.

These unit costs include all costs of the work except those scheduled below in compliance with Article 6 of the contract to which the Government will contribute on the basis of actual costs.

AGREED UNIT COSTS

Stage I

2550 feet of diamond drilling @ $7.50/ft.	$19,125.00	
Total Unit Costs		$19,125.00*

Stage II

165 feet of shaft sinking @ $100/ft. (4.5' x 9' in clear, 8' x 8" shaft sets on 5' centers lagged on all sides)	16,500.00	
1100 feet of drifting and cross-cutting @ $30/ft (section 5' x 7' timbered where needed)	33,000.00	
125 feet of two-compartment raising @ $45/ft. (Section 6' x 8' compartments separated by lagged stulls)	5,625.00	
275 feet of one-compartment raising @ $30/ft. (Section 5' x 7')	8,250.00	
Total Unit Costs		$63,375.00*

SCHEDULED ACTUAL COSTS

(1) Independent Contracts

Stages I and II

None

(2) Labor, Supervision and Consultants

Stage I

Supervision & sampling - part time engineer & helper - 6/mos. @ $250.00/mo.	1,500.00*

Consultant	$ 500.00*	$ 2,000.00*

Stage II

Supervision and sampling - part time engineer & helper - 15/mos. @ $250.00/mo.	3,750.00*	
Consultant	1,000.00*	4,750.00*

(3) **Operating Materials and Supplies**

Stages I and II

None (except as indicated in (6) and (7))

(4) **Operating Equipment**

Stage I

None

Stage II

An arbitrary depreciation allowance of $200 per month beginning with the first day of the month after that in which the work in this stage has been started will be allowed for a period not in excess of 15 months regardless of the extent of the use of the equipment. 3,000.00*

(5) **Rehabilitation and Repairs**

Stages I and II

None

(6) **New Buildings, Improvements, Installations**

Stage I

None

Stage II

Road to shaft site grading	2,000.00	
Headframe, installing hoist and housing (both items include cost of labor and supplies)	2,500.00	4,500.00*

(7) Miscellaneous

Stage I		
Supplies and Assaying	$ 450.00	
Accounting - 6 months @ $50/month	300.00	$ 750.00*
Stage II		
Supplies and Assaying	600.00	
Accounting - 15 months @ $50/month	750.00	1,350.00*

(8) Contingencies

Stage I

None

Stage II

For unforeseen expenditures	1,600.00*

S U M M A R Y

Total Estimated Cost Stage I	$21,875.00*
Total Estimated Cost Stage II	$78,575.00*
Total Estimated Cost of Project	$100,450.00*
Government Participation @ 50%	$ 50,225.00*

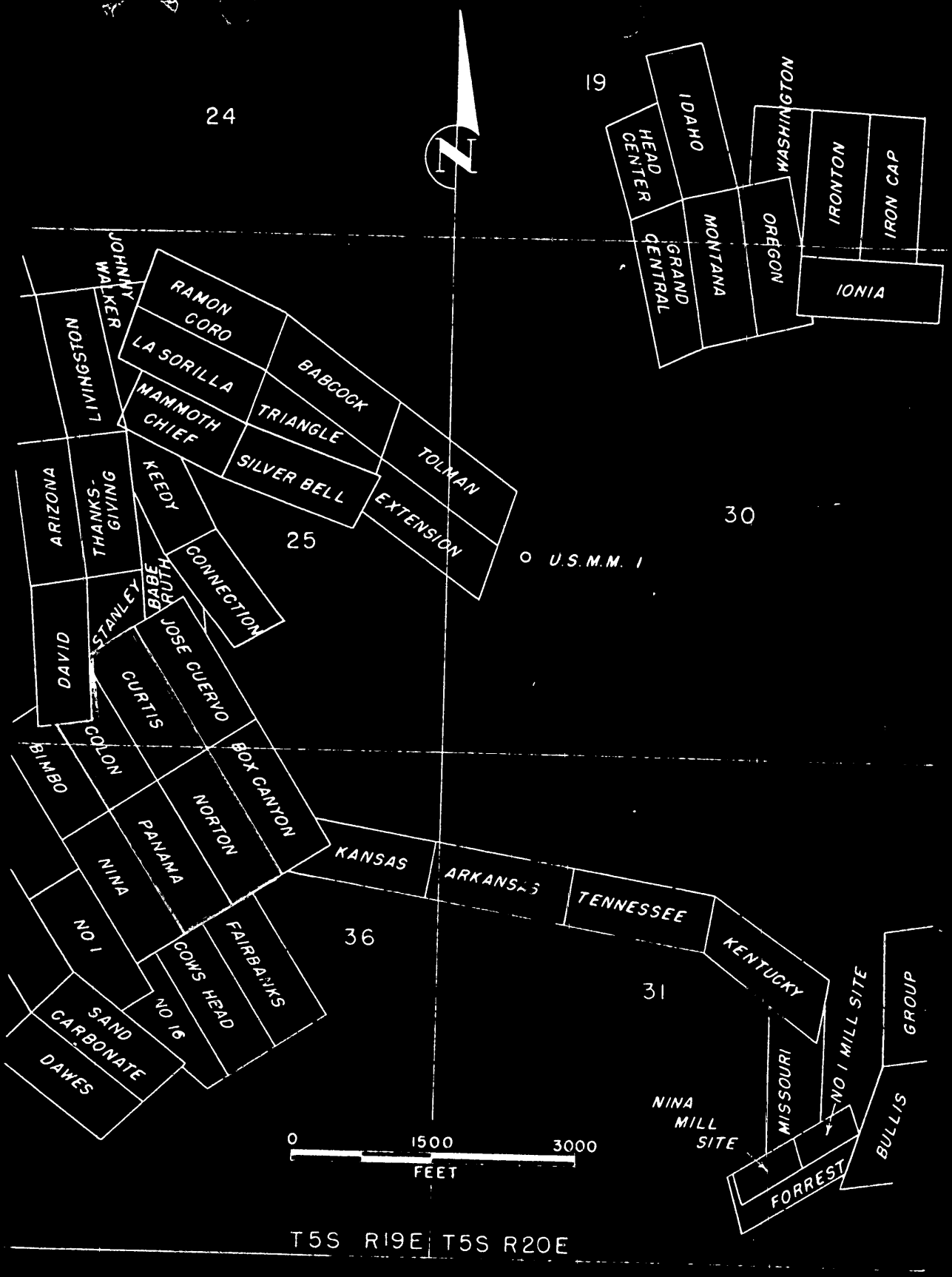
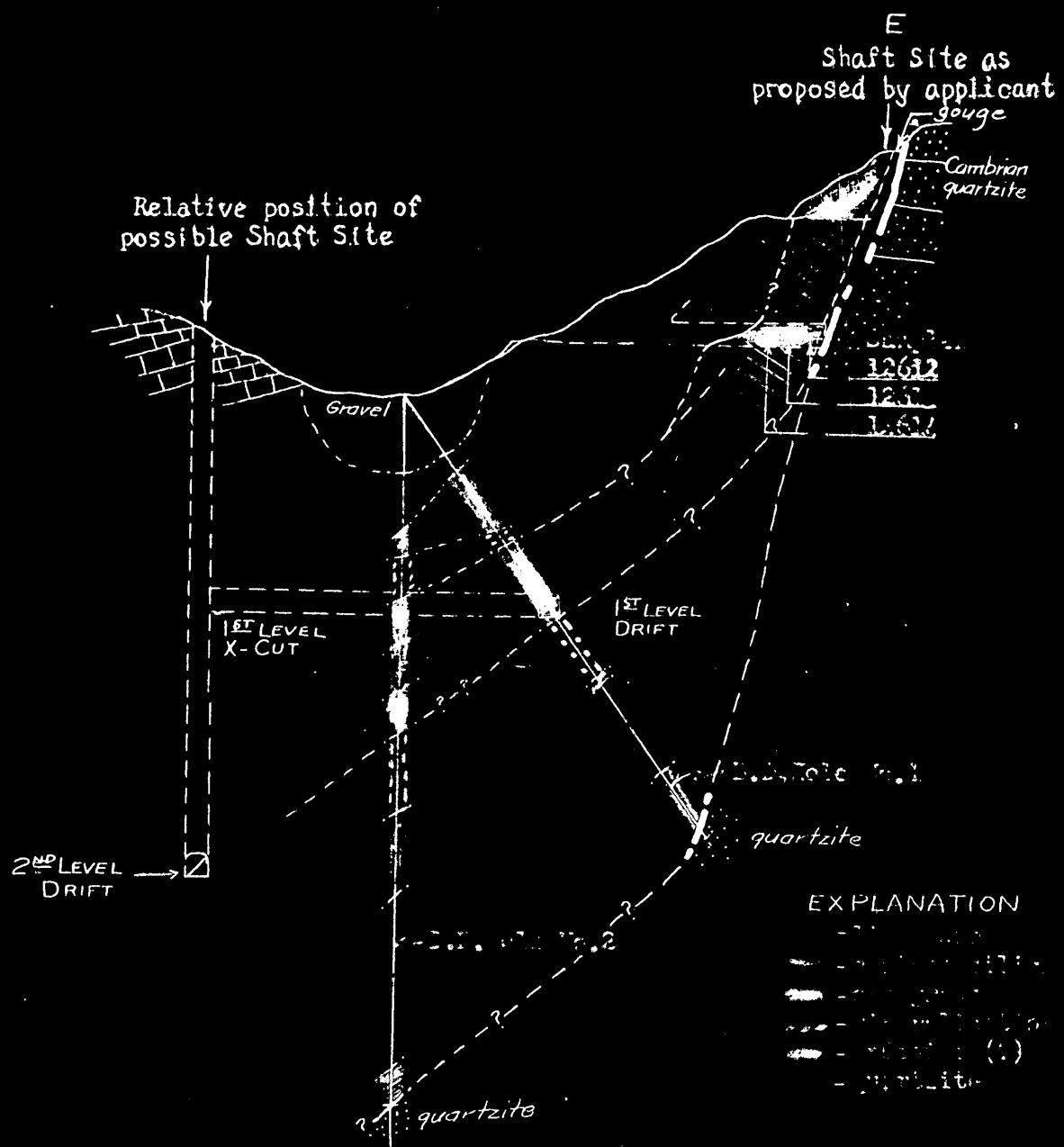


FIG 2 - ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA



CROSS SECTION THRU SOUTHERN OUTCROP SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMEA-2366

Date received 2-4-52

Participation

Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Name and address of applicant

Date January 25, 1952

FILL IN THIS BLOCK

Date of application January 25, 1952

Estimated cost $101,845.00

Mineral or metal Zinc and Lead

Percentage of Government participation 50%

Location of mine Aravaipa District, Graham County, Arizona.

Date of filing MF-100 June 20, 1951

DMA Docket Number, if available MS-2090

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 4 1952

See appended report.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.

*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.

*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.

*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.

15. State in detail how the ore could be shipped and how and where milled.

*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.

*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.

19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?

21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.

22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.

24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Athletic Mining Company
(Name of company)

By Raymond J. Orr
(Signature of authorized official)

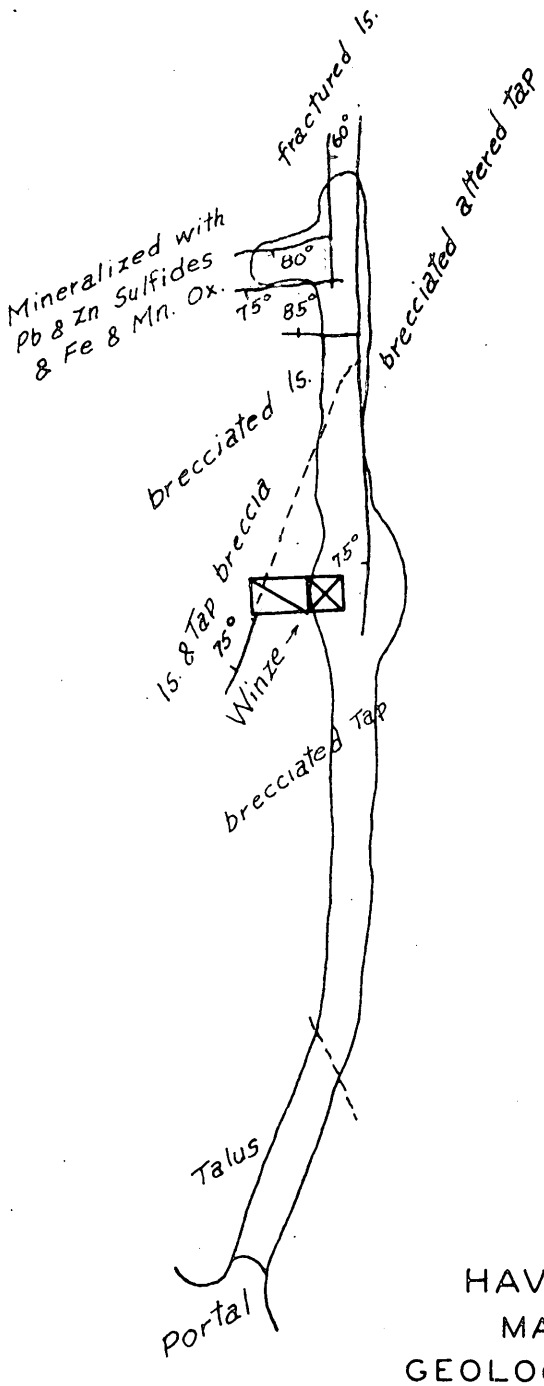
January 25, 1952
(Date)

President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE



HAVALINA TUNNEL
MAP BY A. J. KLANT
GEOLOGY BY E. D. WILSON

SCALE: 1" = 20'

D. R. STEWART

JAN. 1952

JOPLIN, MO.

Defense Minerals Administration

Review of Application for Exploration Assistance

Mr. J. H. East, Jr.
Executive Officer, Field Team
Region IV
224 New Customhouse
Denver 2, Colorado

Docket No. DMEA-2366

Commodity Lead, zinc

Total Amount $101,845

Govt. Participation 50% $50,922.50

1. Name and Address of Applicant Athletic Mining Company, P. O. Box 540, Fort Smith, Arkansas

2. Location of Property Aravaipi District, Graham County, Arizona (Secs. 25 and 36, T. 5 S., R. 19 E.)

3. Mineral or metal Lead and zinc Is it listed in Section 9 of MO-5? Yes

If not, application will be rejected.

4. Geologic probability of discovery--based on data in application (question #16, 17, 18, 20 and 22)*

Mines or Survey reports, etc., do you rate chances:

a) Good

b) Poor

c) None

d) Don't know--needs field examination X

e) Is there an alternative and favorable project? Do not know
(If so, attach an explanation)

5. Is the applicant's right to the property clearly stated? Yes, owner
(question 5, 6, 7)*

6. If applicant is a lessee, is a copy of the lease attached?

Does the lease have sufficient time to run to cover a future productive period?

*question numbers are those of MF-103

7. Are subordination agreements necessary? No

a) MF-201? _____

b) MF-202? _____

8. From the data presented, does the proposed project appear feasible from the point of view of:

a) Available manpower Yes

b) Equipment and supplies Yes
(question 14 plus general knowledge of availability)*

c) Accessibility (question 12)* Yes

d) Water (question 13)* Yes

e) Power (question 13)* Yes

Is a field check needed on any of these points? No

9. Does the experience of the applicant appear to be adequate to assure that he can properly conduct the proposed project? (question 4)* Yes

_____

Is a field check needed on this point? No

10. Exhibit A. (question 21 and 22)*

a) Is the project adequately described? Yes

If not, are there sufficient data given so that you can describe the project? _____ If so, attach a draft.

b) Is there an adequate map or sketch of the proposed work? Yes, but for only part of the proposed work

c) Is the proposed work "exploration" under the definition of Section 8, MO-5? Yes

If not, what part of it is? _____

_____

_____

_____

Is this part a worth-while exploration project? Yes

d) Are the cost estimates detailed? No

Can they be summarized, as on page 2 of Procedural Instruction 5-A, from the available data? No If so, attach a draft.

e) Are the cost estimates reasonable?

f) Should more information be requested from applicant? Should be detailed

g) Is a field examination necessary to complete Exhibit A? Yes

11. Exhibit B (question 23-d)*

a) Is it applicable? Yes

b) If so, are sufficient data furnished? No If so, attach a draft.

c) Is a field check needed? Yes

12. Exhibit C (question 23-e, f and g)*

a) Is it applicable? Yes

b) Sufficient data? No If so, attach a draft.

c) Are rents and charges reasonable? Don't know, but seem to be reasonable.

d) Is a field check needed? Yes

13. Exhibit D (question 23-a, b)*

a) Are there sufficient data? No

b) Is the schedule adequate for the work proposed? Yes

c) Is the schedule excessive for the work proposed?

d) Are the proposed wages and salaries reasonable? Don't know what they are

e) Is a field check needed? Yes

14. Exhibit E (question 23-c)*

a) Is it applicable? Yes

b) Sufficient data?

c) Reasonable?

d) Field check needed? Yes

15. In your judgment, can the proposed work be done in the proposed time? Yes

(All exploration must be completed within two years)

16. If field examination is not needed, attach your recommendation.

17. If field examination is needed, do you have any special instructions for the field team not indicated by your answers to the foregoing question? Should obtain the Local Wage Schedules and the number of men under each classification under the schedule and the number of shifts under each classification that will be employed. Also the local rental rates for equipment and supplies. The field crew shall also determine if the amount of development work asked for is excessive, and suggest the proper amount determined. We believe the shaft should be sunk only 100 ft., and the drilling should be cut to 3000 ft. Also, the drilling cost seems too high. See attached list of instructions.

Reviewed by: H. E. Olund
Lead-Zinc Br. - BM 2-8-52

H. E. Olund

O. W. Bishop

Date 2-8-52

Instructions to field team

The application does not give any detailed costs, either the union wage scale or the local rental costs for equipment. Therefore, they should be obtained and recorded by the field team.

The field team should also determine the amount of exploration work and record the locations of all the work finally agreed upon by the field team and the company. From a study of the logs of the drill holes Nos. 1,2,3, and 4, the ore horizons are above the 100' level of the shaft to be sunk. Therefore, it seems to us that the allowance for shaft sinking should be cut from 300' to 100'. The amount for drifting and X-cutting seems to be O.K. The amount of diamond drilling can be cut to approximately 3000'. However, the cost per foot of diamond drilling can undoubtedly be cut considerably.

O. M. Bishop BM

H. E. Olund BM

The proposed drilling is justifiable exploration, but the holes should be located on the map. Where will the 16 holes be drilled? There is some question as to the need for a 300' shaft to explore the actinolitic lenses and the mineralized fault. The Eldred D. Wilson report should be reviewed by the field team, since the applicant's geological map is based upon this report. This report was not submitted with the application.

E. L. Newcomb GS

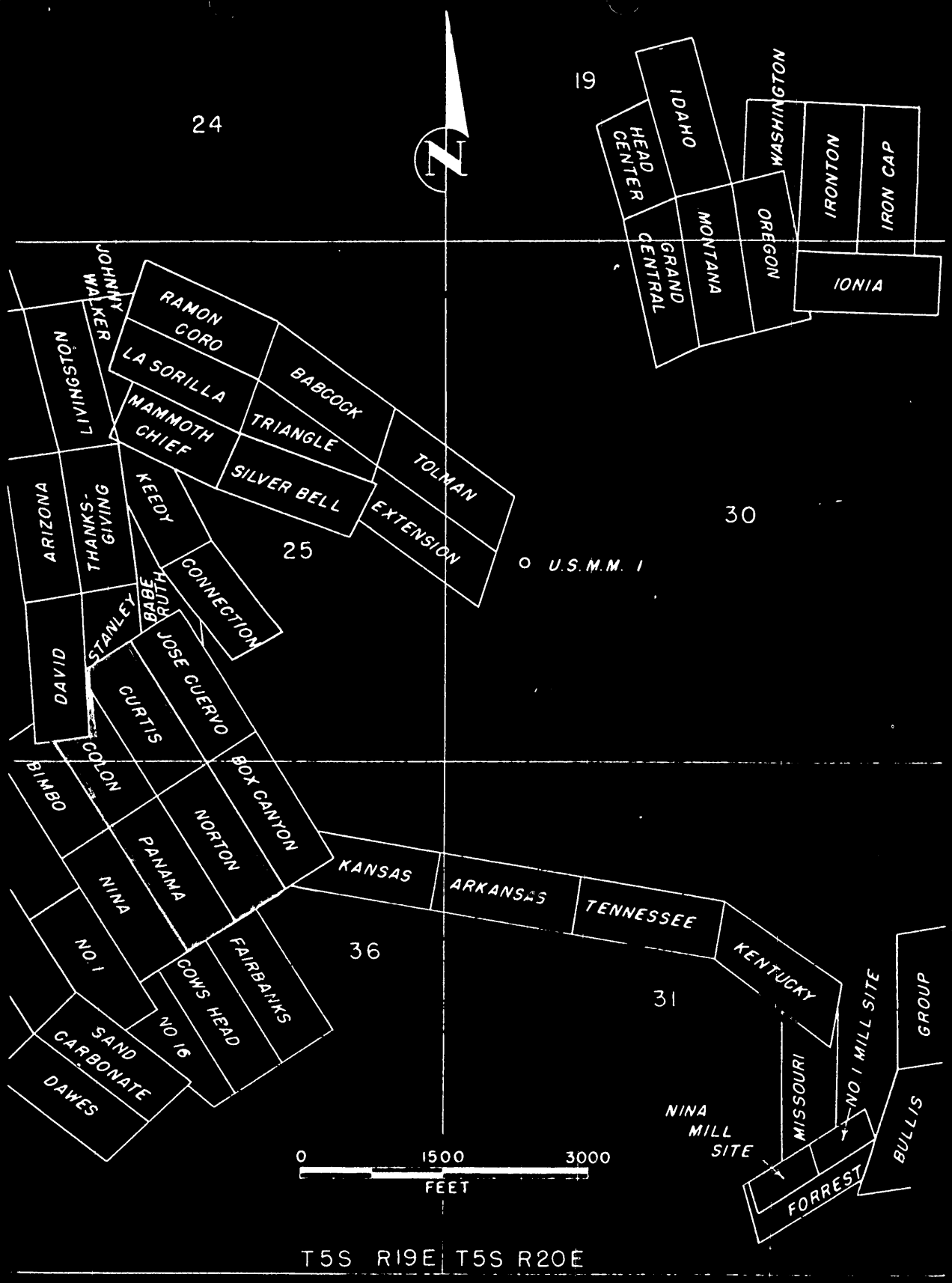
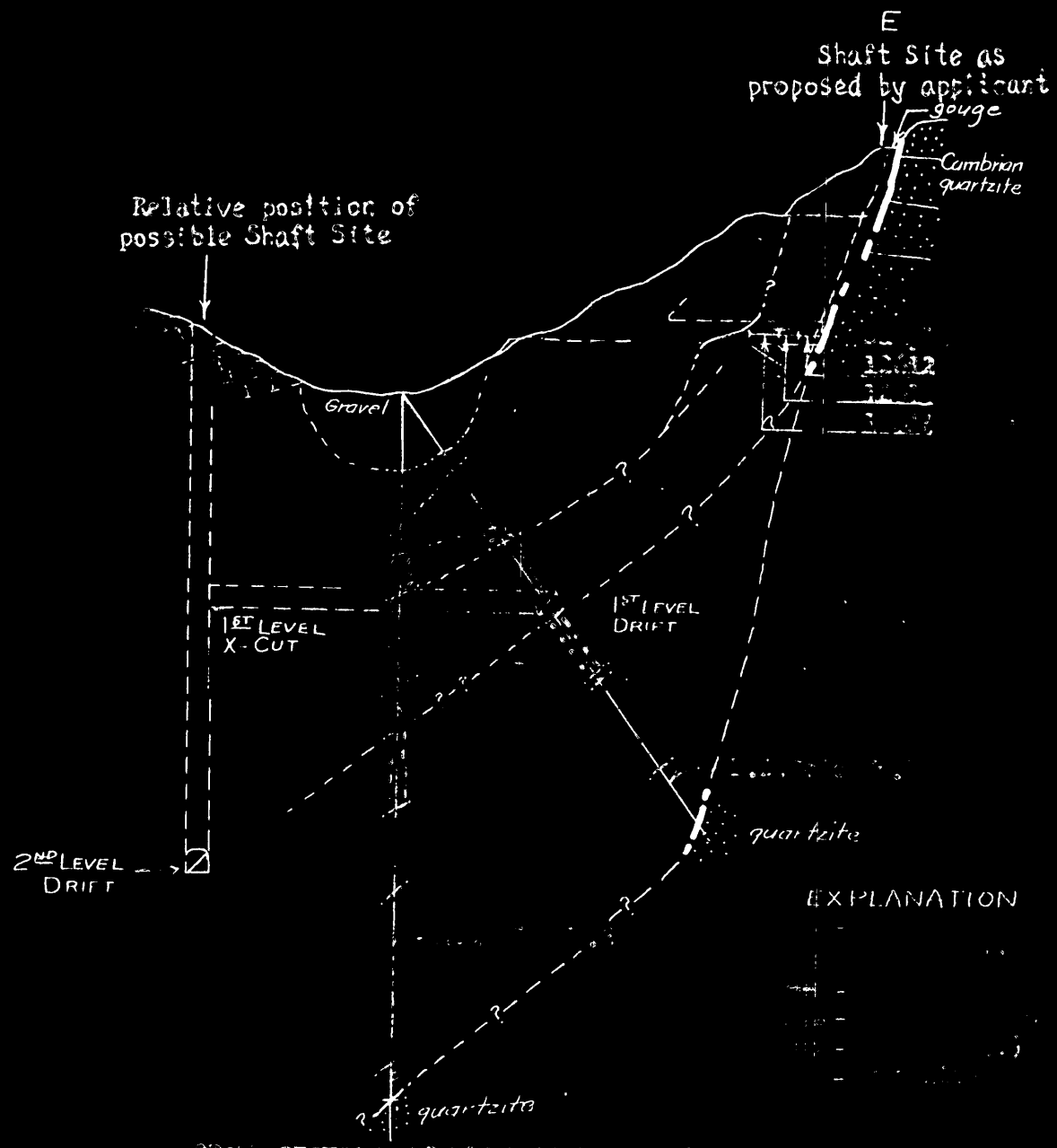
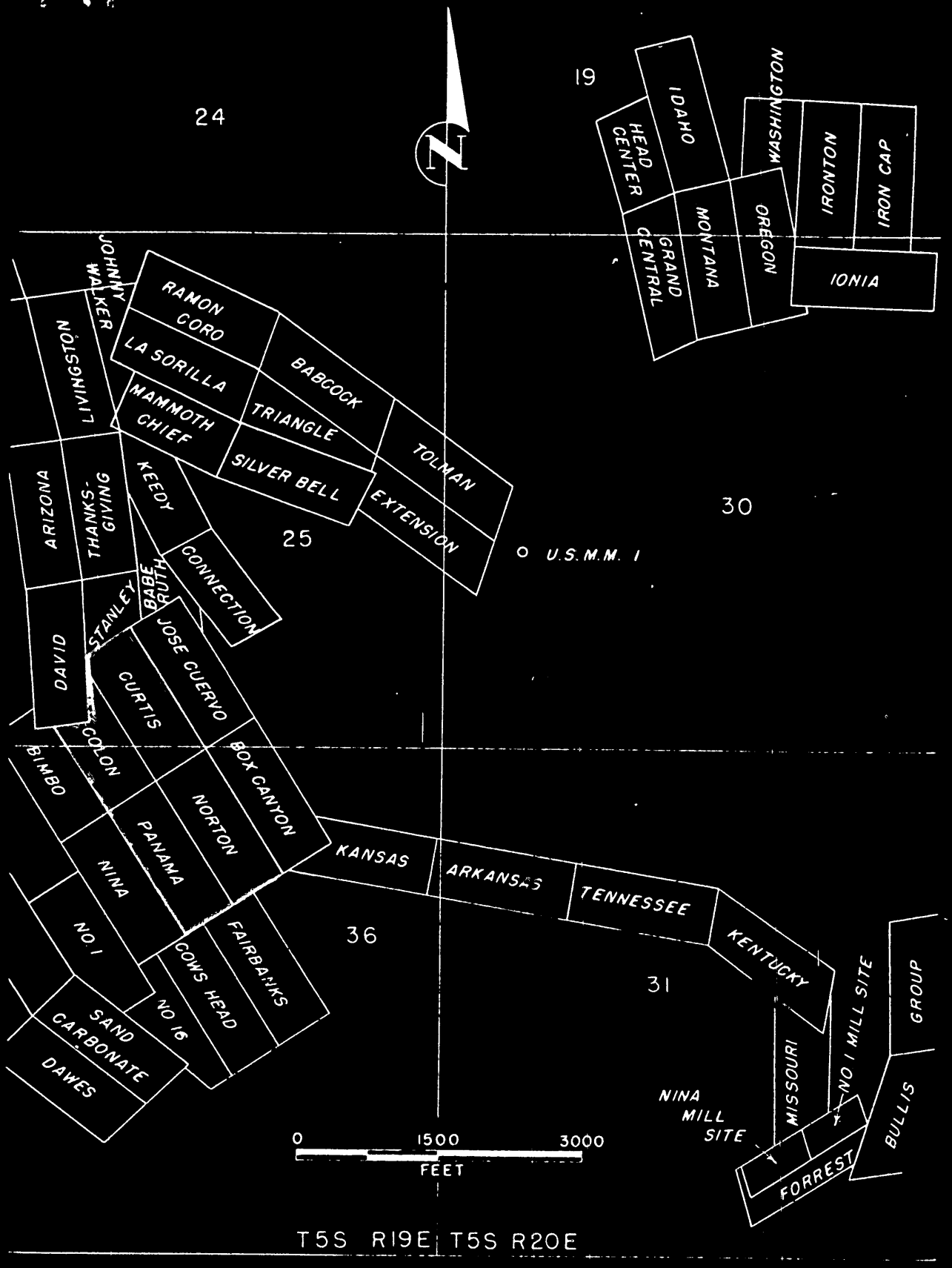


FIG 2 · ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA



CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4



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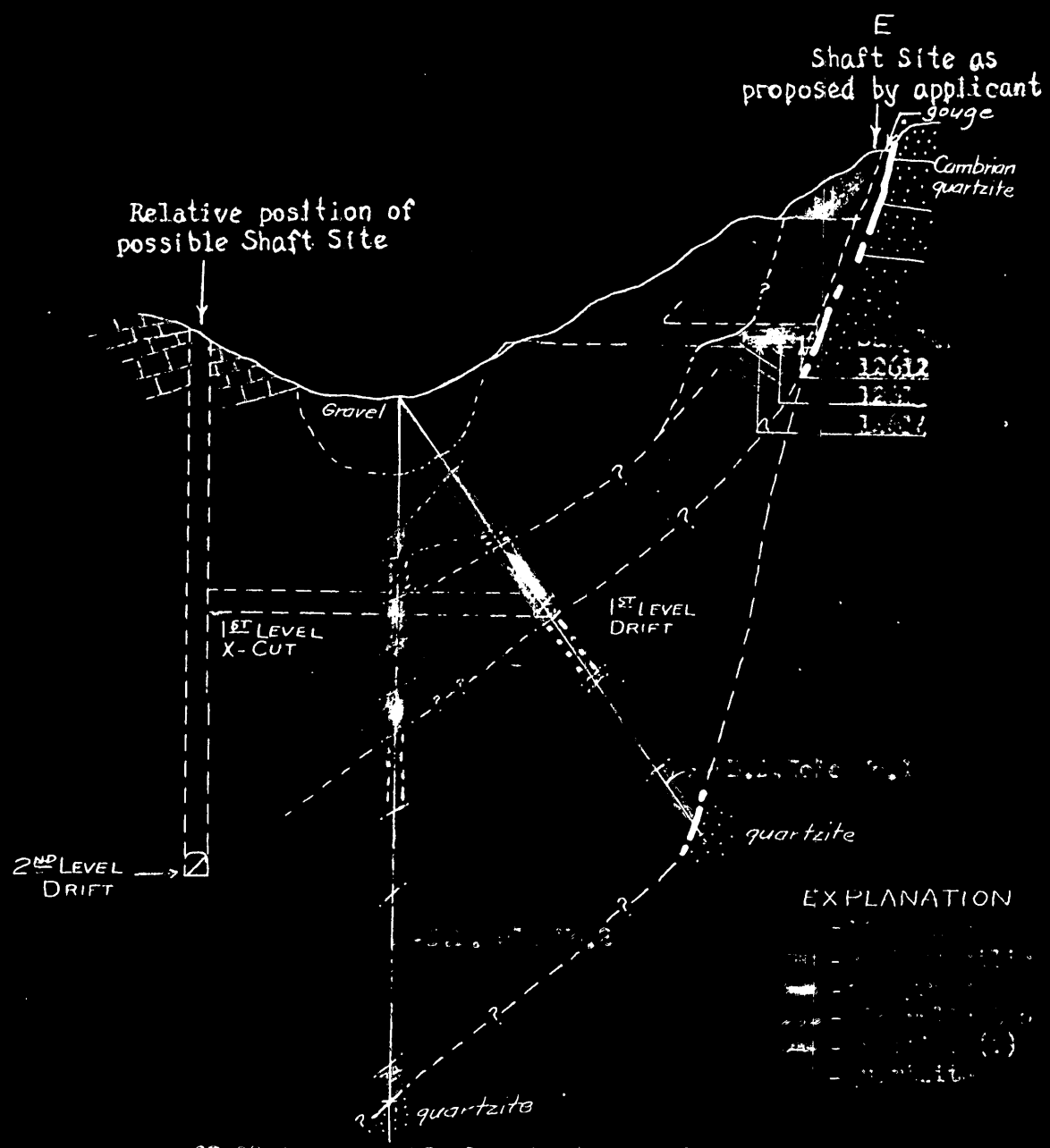

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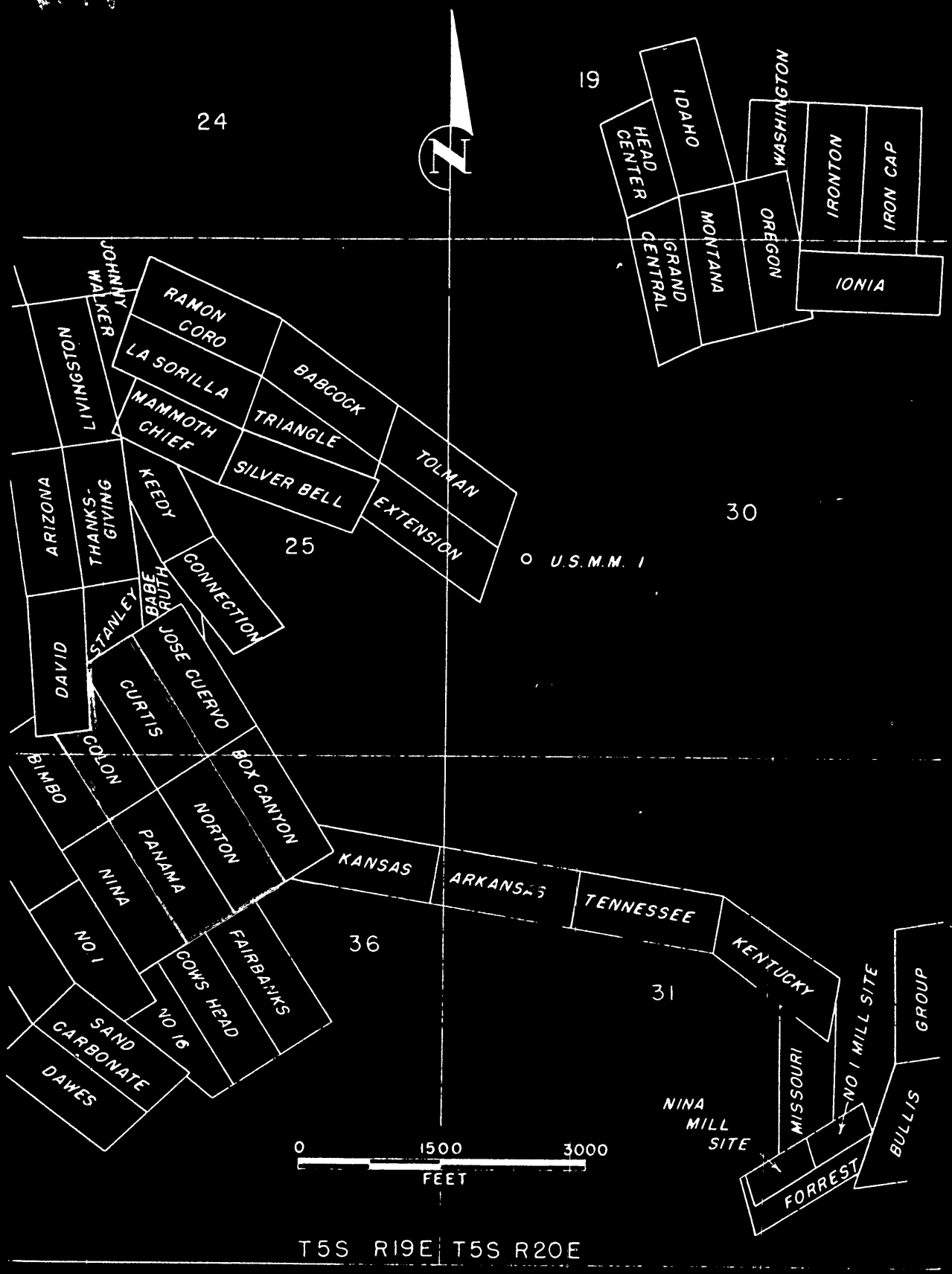
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4



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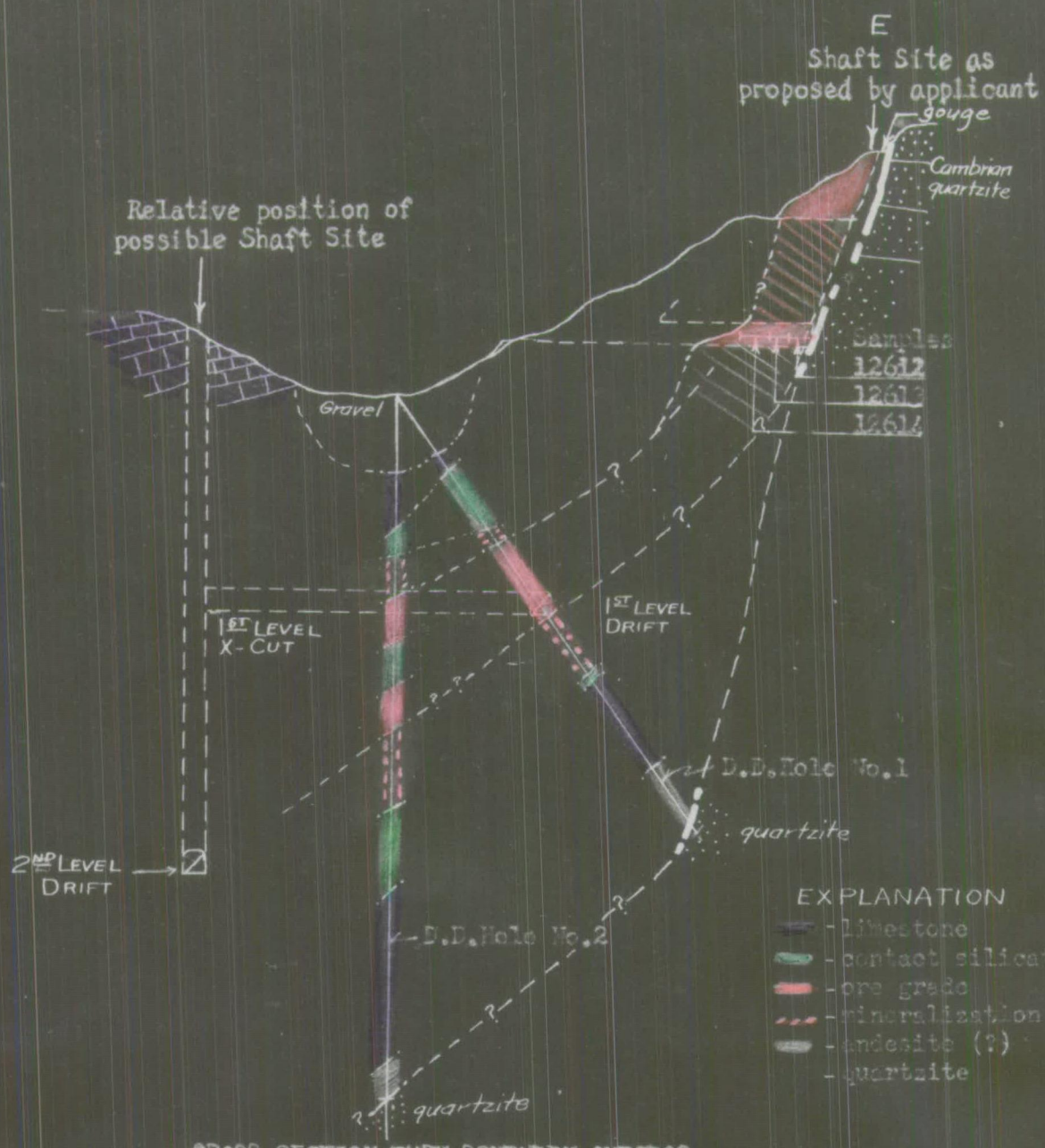
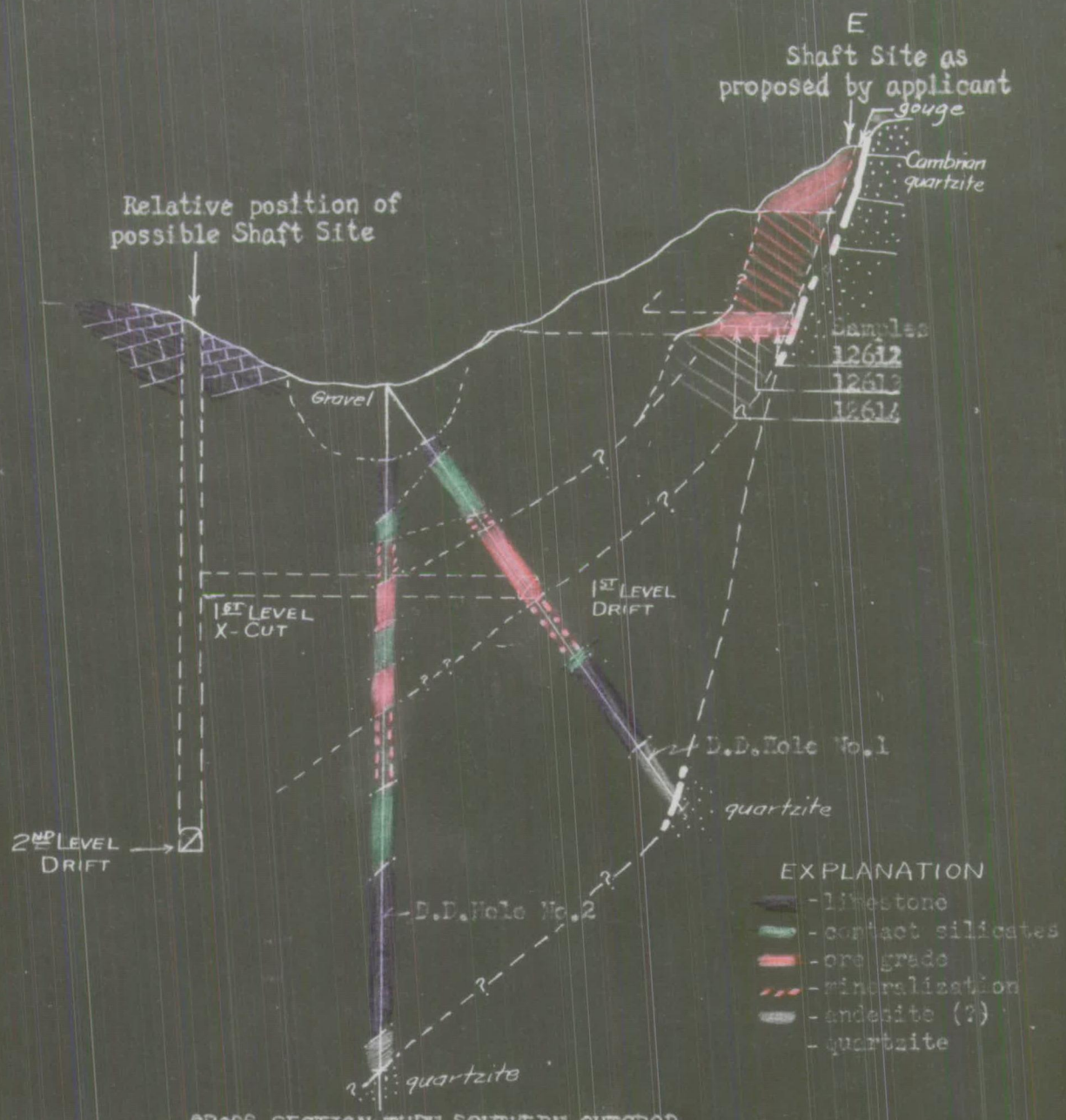


CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DIEA-0366; SCALE 1"= 50'

FIG. 2 - ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA



CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DIEA-0366; SCALE 1"= 50'

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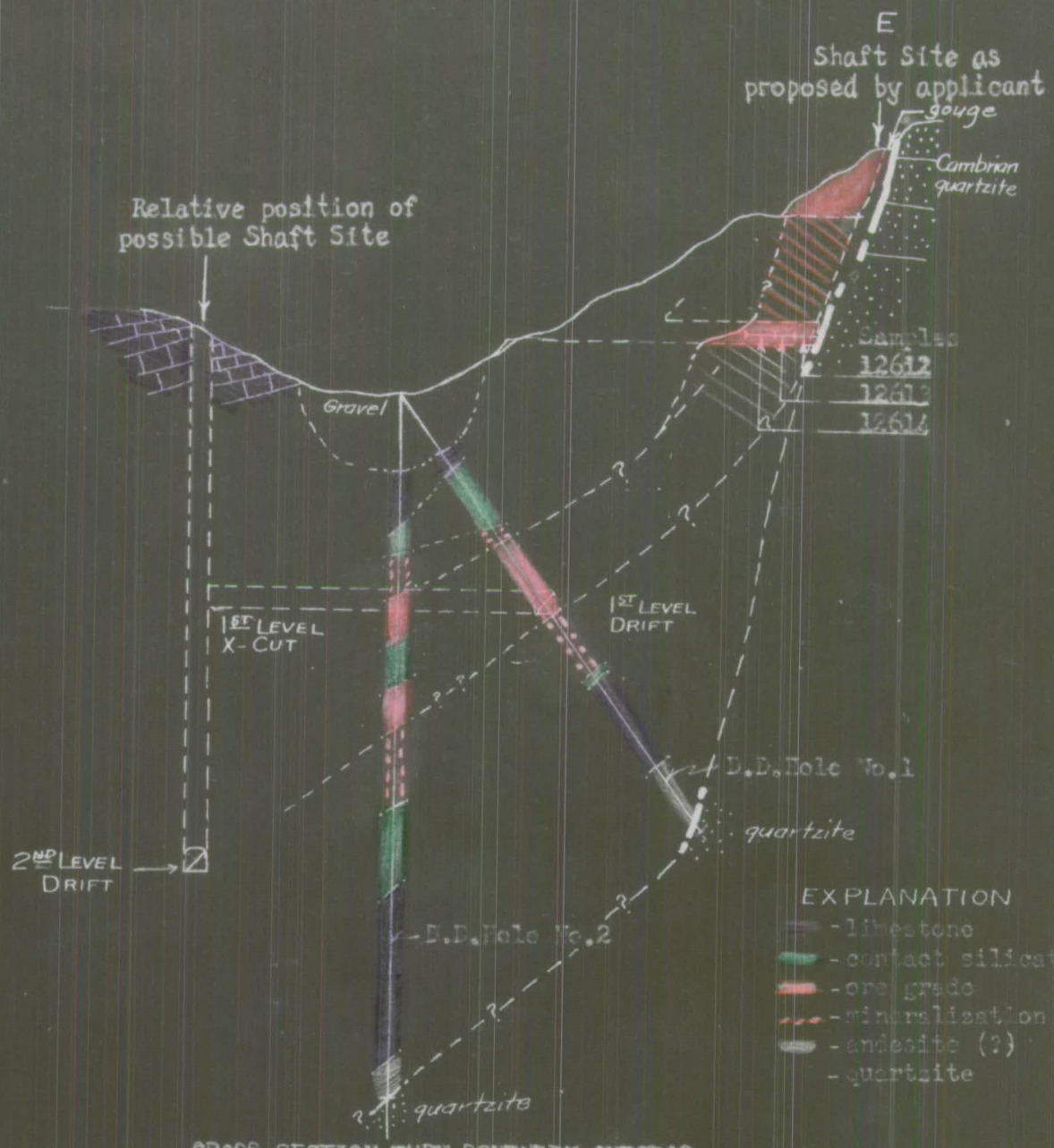
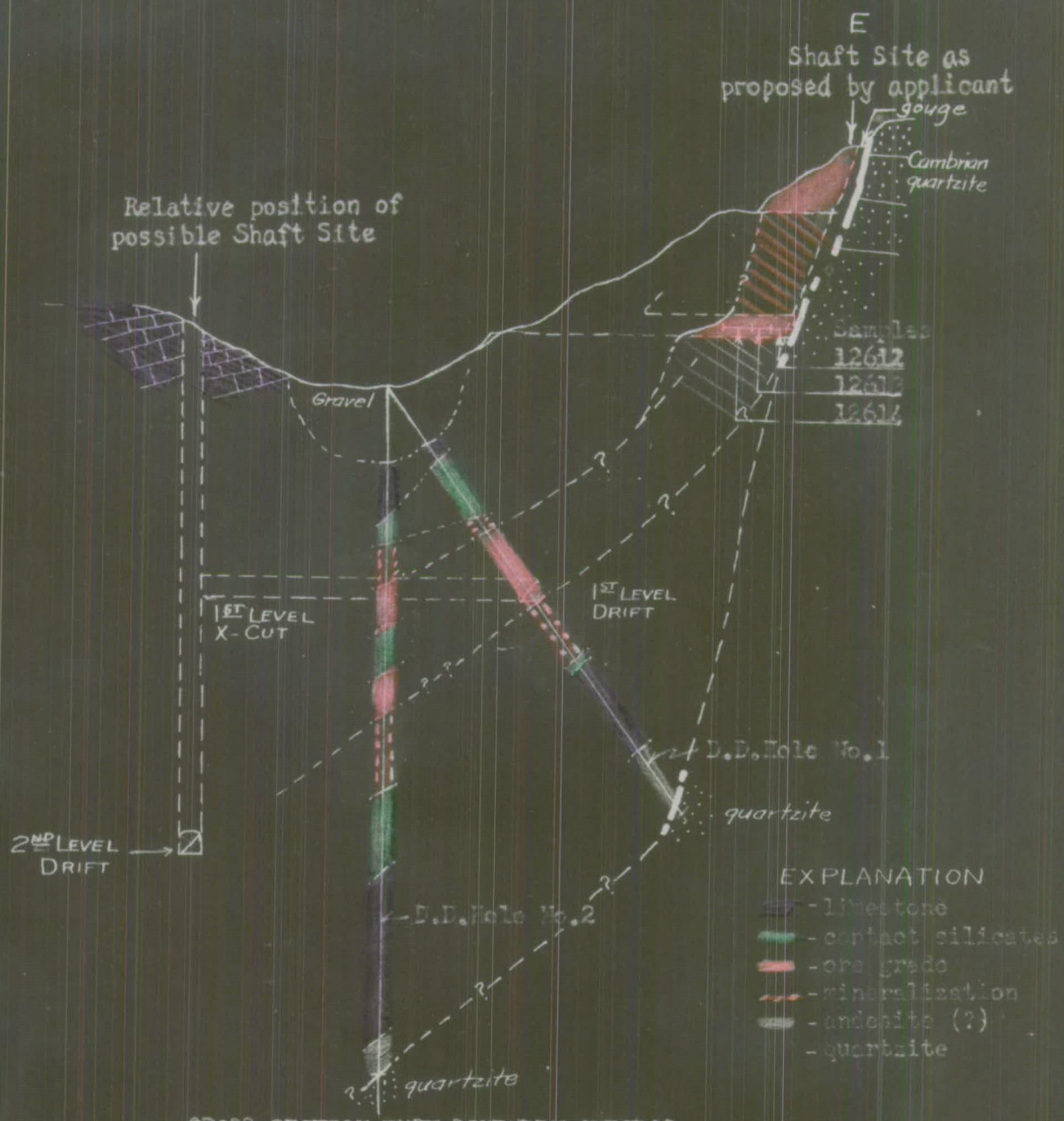


CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DIEA-0966; SCALE 1"= 50'

FIG. 2 - ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA



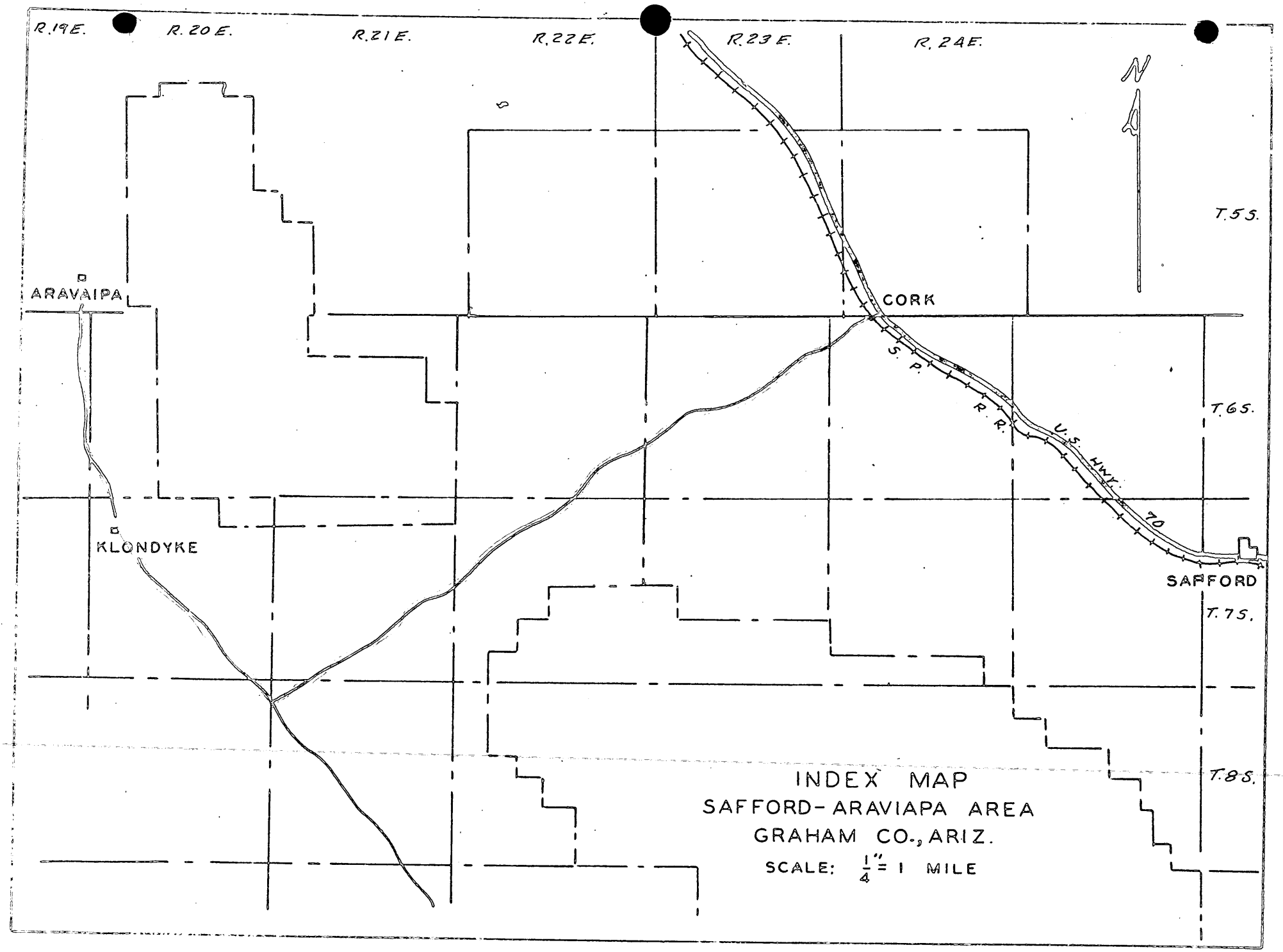
CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DATE-0966; SCALE 1" = 50'

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR MINE CAMP NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
108'	110'	4.40	0.90	1.30	0.40	24"
110'	112'	0.50		0.40		24"
112'	114'	2.10	0.80	0.30		24"
114'	116'	0.60		0.20		24"
116'	118'	0.60		0.30		24"
118'	120'	0.60		0.20		21"
120'	122'	0.80		0.20		22"
122'	124'	0.80		0.20		19"
124'	125'	0.70		0.20		11"
137'	139'	0.90		0.30		22"
139'	142'	3.70		1.60	0.30	25"
164'	166'	1.50	0.70	0.30		22"
166'	168'	1.50	0.70	0.40		22"
168'	170'	0.60		0.20		24"
170'	172'	0.80		0.30		24"
172'	174'	0.80		0.20		24"
174'	176'	0.70		0.20		24"
176'	178'	0.70		0.20		24"
178'	180'	0.70		0.20		24"
180'	182'	0.60		0.20		24"
182'	184'					24"
184'	186'					24"
186'	188'					24"
188'	190'					22"
190'	192'					24"
192'	194'					24"



INDEX MAP
SAFFORD-ARAVIAPA AREA
GRAHAM CO., ARIZ.
SCALE: $\frac{1}{4}$" = 1 MILE

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Mine Camp No. 2 DATE: Winter-Spring, 1948-1949

DIRECTION: East

INCLINATION: -63°

From	To	Formation	Feet
0	17'	Pink chert and lime breccia. Fairly coarsely crystalline.	17
17'	30'	Crystalline gray lime with occasional patches of chert, calcite. Some pink staining.	13
30'	30'4"	Purple shale.	1/3
30'4"	38'	Pink chert and fine gr. lime breccia.	7-2/3
38'	40'	Coarse grained pink lime.	2
40'	42'	Chert and crystalline lime breccia. Some pink staining.	2
42'	87'	Coarsely crystalline gray lime.	45
87'	95'	Fine grained gray lime.	8
95'	96'	Lime breccia with pink matrix. Some lime in elongated slivers. (Diatreme?)	1
96'	107'	Dense gray lime.	11
107'	108'	Crystalline gray lime with some calcite. Solution cracks filled with actinolite.	1
108'	112'	Mostly gray green actinolite with occasional black patches. Shines of ZnS, PbS.	4
112'	125'	Mostly gray green actinolite. Occasional patches of calcite. Shines of ZnS, PbS.	13
125'	128'	Fine grained gray lime.	3
128'	137'	Coarsely crystalline gray lime.	9
137'	142'	Crystalline gray lime, actinolite and calcite. Some PbS, ZnS.	5
142'	147'	Crystalline gray lime alternately pink and gray. Some brecciation.	5
147'	164'	Fine grained gray lime, with many seams of calcite and chert.	17
164'	172'	Mostly green gray actinolite with stretches of recrystalline gray and pink lime. Some PbS, ZnS.	8
172'	182'	Mostly green gray actinolite. Some PbS, ZnS.	10
182'	194'	Mostly green gray actinolite with some fibrous actinolite banding. Fair ZnS, PbS.	12
194'	236'	Fine grained gray lime with occasional calcite and chert bands.	42

Bottom of Hole at 236 feet.

Assays on the following page.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

April 24, 1953

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
APR 27 1953

Memorandum

To: George C. Selfridge, Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2366, Contract Idm-E378, (Lead-Zinc) Athletic Mining Company, Graham County, Arizona

Enclosed is the Operator's copy of Contract Idm-E378, which you requested in your letter dated April 20, 1953.

W. H. King
W. H. King

Enclosure

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

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Denver 2, Colorado

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W. H. King
W. H. King

Enclosure

JFS:ld

cc: Koschmann (2)
Storms
Subject
Chron

FILE COPY
SURNAME:

500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

Signed Selfridge.
Withdrawn

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

APR 20 1953

Re: Docket No. DMEA-2366 (Lead-Zinc)
Athletic Mining Company
Graham County, Arizona
Contract No. Idm-5378

Dear Mr. King:

This refers to your letter dated March 27, 1953, in which you note that the Applicant has not returned the copies of the unsigned contract to you. These copies have now been returned to the Washington office, and it is requested that you send us the Operator's copy which you have been holding in your files.

Sincerely yours,

George C. Selfridge (GVB)
Chairman, Operating Committee

APPROVED:

J. H. Hedges (GVB)
Member, Bureau of Mines

A. R. Kinkel, Jr. (GVB)
Member, Geological Survey

BJLackhoff (written 4/15/53)

Copy to: Docket
Admr. R. File
Op. Committee
Base Metals
Mr. Bishop
Mr. Kinkel
Chron.

J.C. 4/20/53

FILE COPY
SURNAME:

500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

APR 3 1953

Registered Mail

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Re: Docket No. DMEA-2366 (Lead-Zinc)
Contract No. Idm-E378
Athletic Mining Company
Graham County, Arizona

Dear Mr. Orr:

This office wrote you December 11, 1952, requesting the return of the original and four copies (unsigned) of the above contract. To date they have not been received and it is requested that you return them so that our files may be completed.

Sincerely yours,

C. O. Mittendorf

Administrator

WRGriswold/hmj
4/2/53

CC to: Docket
Adm. R. File
Operating Committee
Region IV (2)
Base Metals
Chron.

4/3/53

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 27, 1953.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 30 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2366, Contract Idm-E378, Athletic Mining Company (Lead-Zinc)

Reference is made to your letter dated November 4, 1952 to the Athletic Mining Company, your letter dated December 11, 1952 to the Athletic Mining Company, and our memorandum to you dated January 27, 1953.

The applicant has not returned the original and four copies of the contract to this office as requested. The Operator's copy of this contract is in the Denver office.

W. H. King
W. H. King

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

March 27, 1953.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAR 30 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2366, Contract Idm-N378, Athletic Mining Company (Lead-Zinc)

Reference is made to your letter dated November 4, 1952 to the Athletic Mining Company, your letter dated December 11, 1952 to the Athletic Mining Company, and our memorandum to you dated January 27, 1953.

The applicant has not returned the original and four copies of the contract to this office as requested. The Operator's copy of this contract is in the Denver office.

W. H. King

W. H. King

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JAN 30 1953

224 New Customhouse
Denver 2, Colorado

January 27, 1953

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2366, Contract Idm-E378, Athletic Mining Company (Lead-Zinc)

Reference is made to your letter dated November 4, 1952 to the Athletic Mining Company and your letter dated December 11, 1952 to the Athletic Mining Company.

The applicant has not yet returned the original and four copies of the contract to this office as requested. The operator's copy of this contract is retained in the Denver office because all copies had been signed by C.O. Mittendorf, Acting Administrator, DMEA.

W. H. King

W. H. King

FILE COPY
SURNAME:

500

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEC 11 1952

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Forth Smith, Arkansas

Re: Docket No. DMEA-2366 (Lead-Zinc)
Contract No. Idm-E378
Athletic Mining Company
Graham County, Arizona

Dear Mr. Orr:

Will you please return at your earliest convenience, if you have not already done so, the original and four copies (unsigned) of the above-referenced contract. They may be returned to this office or to:

Mr. W. H. King, Executive Officer
DMEA Field Team, Region IV
224 New Customhouse Building
Denver 2, Colorado

Sincerely yours,

C. O. Mittendorf

Administrator

12-11-52

JWAlt/bjl (written 12/10/52)

Copy to: Docket
Admr. R. File
Op. Committee
H. F. Keller (2)
J. W. Alt
Mr. Bishop
Mr. Kinkle
Reg. IV (2)
Chron.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

December 2, 1952

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
DEC 5 1952
RECEIVED

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee, DMEA

From: Executive Officer, DMEA Field Team, Region IV

Subject: Docket DMEA 2366 (Lead-Zinc), Athletic Mining Company, Contract Idm-E378

Reference is made to your letter dated November 17, 1952, regarding Contract Idm-E378. This contract has been placed in our inactive file.

Your attention is called to the fact that Mr. Orr has not returned the original and four copies of the contract to this office. The operator's copy of this contract is retained in the Denver office because all copies had been signed by C.O. Mittendorf, Acting Administrator, DMEA.

W. H. King

W. H. King

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

500

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

NOV 17 1952

Re: Docket No. DMEA-2366 (Lead-Zinc)
Athletic Mining Company
Graham County, Arizona

Dear Mr. Orr:

I have your letter of November 6, 1952, stating your decision not to enter into the proposed exploration project contract submitted by the Government for your consideration.

I sincerely regret that you feel unable to go ahead with the project under the present conditions and therefore will not execute the contract. Because of your decision the subject application will be removed from the active files and the docket will be closed.

I wish to thank you for bringing your property to the attention of the Government and to assure you that if, in the future, you wish to change your decision, it will receive the fullest consideration.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

S.H. 11-17-52

HFKeller/bw
(written 11/12/52)
Copy to: Docket
Adm R File
Op. Comm
H. F. Keller (2)
J. W. Alt
Mr. Bishop
Mr. McKnight
Chron.
Reg. IV (2)

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR

DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

NOV 17 1952

Mr. W. H. King
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2366 (Lead-Zinc)
Athletic Mining Company

Dear Mr. King:

For your information we are enclosing a copy of the letter of November 7, 1952, from Raymond E. Orr, President of the Athletic Mining Company, which is self explanatory.

We regret this action on the part of Mr. Orr; however, the application will be withdrawn from the active files and the docket will be closed. We presume that Mr. Orr will return the unsigned original and 5 copies of the contract to you as requested in our letter to him dated November 4, 1952.

Sincerely yours,

Frank E. Johnson (FEJ)
Chairman, Operating Committee

Enclosure

Approved:

J. H. Hedges (JHB)
Member, Bureau of Mines

E. L. McKnight (ELM)
Member, Geological Survey

JWAlt/bw (written 11/12/52)
Copy to: Docket
Adm R. File
Op. Comm.
H. F. Keller (2)
J. W. Alt
Mr. Bishop
Mr. McKnight
Chron.

J.W. Alt
W. Bishop
Butler
G. Knight

J.W. 11-17-52

P. O. BOX 792
SAFFORD, ARIZONA

P. O. BOX 540
FORT SMITH, ARKANSAS

ATHLETIC MINING COMPANY

HARVIE L. HORTON, VICE PRES. AND MGR.

SAFFORD, ARIZONA

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
NOV 1 1952

Fort Smith, Arkansas
November 6, 1952

Mr. C. O. Mittendorf, Administrator
United States Department of the Interior
Defense Minerals Exploration Administration
Washington 25, D.C.

Re: Docket #DMEA-2366
Cont.# Idm-E378
(Lead-Zinc)

My dear Mr. Mittendorf:

This is acknowledgment of your letter of November 4th. First of all, I do most humbly beg your pardon for not having previously answered your letter of September 30th.

Under date of October 9th, I wrote to Mr. Howard I. Young in Washington, a letter covering various matters, and herewith, I am quoting in part, from that letter.

> "I'm no lawyer, but as it would stand with the Government having the right to quit, and we not, except with Government approval, it appeals to me that is a unilateral agreement; and by reason of one or two experiences with Government engineers, we don't care to go ahead with the project if that is the Government policy. We are too small to raise much objection to the policy, so therefore, I want to say I appreciate eversomuch, the consideration we have had from DMEA and say that as long as we are not permitted to make an election as we go along, we are making one now, and will not go ahead with the project under the present conditions."

I should most certainly have written you at the same time.

We agree perfectly that the Government must and should reserve the right to quit during various stages of such an exploration contract; but it is our belief that we should also be afforded the same rights and since the contract does not provide that, we are making no request for a change in the terms; we are saying that we will not go ahead with execution of the contract.

Thank you eversomuch, for your full consideration of the matter.

Yours very truly,

Raymond F. Orr

Raymond F. Orr, Pres.
Fort Smith, Arkansas

RFO/j
cc: Mr. Harvie Horton
Safford, Arizona

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION 500
WASHINGTON 25, D. C.

NOV 4 1952

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Re: Docket No. DMEA-2366 (Lead-Zinc)
Contract No. Idm-E378
Graham County, Arizona

Dear Mr. Orr:

On September 30, 1952, I wrote to you in reply to your letter of September 12 regarding the Operator's right to terminate an exploration contract. To date we have had no reply from you, and W. H. King, Executive Officer, DMEA Field Team, Region IV, has advised me that you have not returned the contract which was sent to you for your signature.

If you intend to execute this contract, which was mailed to you three months ago, kindly sign and return the original and 5 copies thereof to:

Mr. W. H. King
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

If the contract is not signed and mailed to the aforementioned address by November 20, 1952, this letter will serve as official notice that the contract is withdrawn by the Government, as of that date.

Sincerely yours,

C. O. Mittendorf

Administrator

11-4-52

JWAlt/bw
(written 11/3/52)
Copy to: Docket
Adm R. File
Op. Comm.
H. F. Keller (2)
J. W. Alt
Mr. Bishop
Mr. McKnight
Reg. IV (2)
Chron.

FILE COPY
SURNAME:

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Memorandum October 28, 1952

To: Mr. Howard F. Keller
Director, Base Metals Division

From: C. O. Mittendorf
Administrator

Subject: Athletic Mining Co. (Lead-Zinc)
DMEA-2366, Contract Idm-E378

Yesterday, during a phone conversation with King, of Region IV, he requested guidance for further action in the subject case. He explained that the six signed copies of the proposed exploration contract had been in the hands of the operator for several months, and wondered if we should not take action to withdraw the contract. He requested the Washington office to refer to its letter to the applicant dated August 15 and then to follow up with whatever action seems appropriate.

I told King that we had a similar case recently in Region III, and that in that instance I thought we had served the operator a notice of withdrawal of the contract, by registered mail.

C. O. Mittendorf (fw)

COMittendorf/fw

cc: Admr Reading File
Mails & Files
OMBishop, 3423 Interior
ETMcKnight, 4204 GSA Bldg.
COMittendorf

FILE COPY
SURNAME:

140

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Hofflund
Lt. C.
Keeling
Johnson
Kimbel
Kosman
Mittendorf

SEP 30 1952

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Subject: Docket No. DMEA-2366
Contract No. Idm-E378
(Lead-Zinc)

My dear Mr. Orr:

Reference is made to your letter of September 12 to me in which you express dissatisfaction with the provisions in our exploration project contract form enabling the Government to terminate the contract under the conditions there stated. You feel that the operator should have reciprocal rights, and indicate that you do not wish to enter into a contract unless such reciprocal rights are provided for.

The contract forms which this Agency is using have been developed pursuant to the regulations under which we are operating. Several hundred of these contracts have been entered into, and no applicant up to this time has declined to enter into one for the reasons which you now raise.

The Government has never yet had occasion to require an operator to complete an exploration project contract when the operator did not deem it worthwhile to proceed with the work. At the same time, this Agency would not feel justified in incorporating special provisions in your contract for the express purpose of enabling you to withdraw from the contract. I think that the case will almost invariably be that if continuance with the work would not be beneficial to the operator neither would it be beneficial to the Government, but the Government cannot commit itself in advance to this proposition.

Sincerely yours,

C. O. Mittendorf

(for) J.H. 9.30.52

Administrator

JLHofflund/em
9/26/52
Copy to: Mails and Files
Adm. Reading File
CoO.Mittendorf
H. F. Keller
Region IV(2)
Mr. Bishop
J. L. Hofflund
Mr. McKnight
chron.
pending

140

FILE COPY
SURNAME:

Jas

AEKane

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

September 24, 1952

Memorandum

To: Administrator

From: Chief Counsel

Subject: Athletic Mining Co., Docket No. DMEA-2366

The contract in this case apparently has not yet been executed by the Operator.

The Operator requests the right to suspend operations under the contract at any time if in its judgment further operations would not be warranted. The Government has such a right. There is no legal objection to putting such a provision in our contracts but this is a policy matter which requires your decision.

Of course, if one of our contracts has already been executed, the Operator would not have this right, and to amend the contract to give it to him would be difficult as there would be no consideration therefor running to the Government.

J. L. Hofflund

R&R

J. L. Hofflund
Chief Counsel

AEKane/ema
cc: Mails & Files
J. L. Hofflund
A. E. Kane
H. F. Keller
Chron.

UNITED STATES 140
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

September 24, 1952

Memorandum

To: Administrator

From: Chief Counsel

Subject: Athletic Mining Co., Docket No. DMEA-2366

The contract in this case apparently has not yet been executed by the Operator.

The Operator requests the right to suspend operations under the contract at any time if in its judgment further operations would not be warranted. The Government has such a right. There is no legal objection to putting such a provision in our contracts but this is a policy matter which requires your decision.

Of course, if one of our contracts has already been executed, the Operator would not have this right, and to amend the contract to give it to him would be difficult as there would be no consideration therefor running to the Government.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

September 24, 1952

Memorandum

To: Administrator

From: Chief Counsel

Subject: Athletic Mining Co., Docket No. DMEA-2366

The contract in this case apparently has not yet been executed by the Operator.

The Operator requests the right to suspend operations under the contract at any time if in its judgment further operations would not be warranted. The Government has such a right. There is no legal objection to putting such a provision in our contracts but this is a policy matter which requires your decision.

Of course, if one of our contracts has already been executed, the Operator would not have this right, and to amend the contract to give it to him would be difficult as there would be no consideration therefor running to the Government.

J. L. Hofflund

J. L. Hofflund
Chief Counsel

P. O. BOX 792
SAFFORD, ARIZONA

P. O BOX 540
FORT SMITH, ARKANSAS

ATHLETIC MINING COMPANY

HARVIE L. HORTON, VICE PRES. AND MGR.

SAFFORD, ARIZONA

Fort Smith, Arkansas
September 12, 1952

Mr. C.O. Mittendorf, Acting Administrator
Defense Minerals Exploration Administration
DMPA
Washington 25, D.C.

My dear Mr. Mittendorf:

Herewith, I am enclosing copy of a letter which I have written Mr. King in Denver today, also I am enclosing copy of a letter which I wrote Mr. Storms, Tucson on September 3rd.

In a recent conversation with Howard Young by phone, I asked him about the policy covering situations such as we raised, namely, the right of an operator to terminate a project. If I correctly recall our conversation, Howard Young asked if I knew you; I told him that I had met you and that was all. I understood him further to say that you and he had had discussions on this very point as raised by other people; and it is for this reason that I feel free in writing you.

Our entire decision with reference to going on with this Exploration Project rests on what we believe to be a reasonable request, namely, our right as well as the contract right of the Government, to suspend operations under this Exploration Project. This is because we do not want to be a party to spending either our own or Government money if our judgment indicates such a procedure would be wrong.

We believed in the project when we filed our application--we still believe in it; and we believe also that we should have equal rights with the Government with reference to suspension at any point during the entire procedure.

We will await any further move until I have a chance to hear further from you on this matter. I'm sorry to bother you with this, but it is my belief that this requires a policy change at the top, hence, this letter to you.

Yours very truly,

Raymond F. Orr

Raymond F. Orr, Pres.
Fort Smith, Arkansas

RFO/j
encls.

ATHLETIC MINING COMPANY

COPY FOR_____

Fort Smith, Arkansas
September 12, 1952

Mr. W.H. King, Executive Officer
Field Team, Region IV
224 New Customs House
Denver 2, Colorado

Re: DMEA Docket: 2366

My dear Mr. King:

Thank you for your letter of September 10th. I notice particularly your paragraph there with reference to the fact that in the event we went into the Exploration Project and felt on our own part, that we were not justified in going ahead, we would have to rely, as you say, on the judgment of the Government engineer. Apparently, you have no discretion in the matter, at least, that is the way it would seem; and therefore, because we feel that a provision of the type we suggested is vital from our standpoint, I have today, written Mr. Mittendorf in Washington. I have written him because I am reasonably sure that the policy as expressed by you is absolutely the current policy in this regard; but I do know that this same question has been raised by others and I think Mr. Mittendorf has had this problem presented to him before.

At present, it seems that I will be able to attend the Mining Congress meeting in Denver, and I look forward to the privilege of meeting you.

Yours very truly,

Raymond F. Orr, Pres.
Fort Smith, Arkansas

RFO/j

ATHLETIC MINING COMPANY

COPY FOR_____

Fort Smith, Arkansas
September 3, 1952

Mr. Walter R. Storms, Chief
Arizona-New Mexico Branch
U.S. Department of Interior
Bureau of Mines-Mining Divn.
Region 4
Tucson, Arizona

Dear Mr. Storms:

Just a few days ago, I returned from an absence of about two weeks and found your letter of August 15th together with copies of the contract referred to.

You know the situation in which the lead and zinc industry, and zinc in particular, finds itself today under the prevailing East St. Louis price of 14¢ for zinc. You perhaps don't know the rough sledding that some companies are having as they endeavor to continue operations. Both of us know though of cases where there have been shutdowns of mining properties because of the low price for concentrates.

The contract which you have prepared and the general conditions are entirely satisfactory; there is one point on which we are not certain and we would like to clear that before we finally execute the agreement. This has to do with the conditions under which the program might be stopped short of an expenditure of the entire amount as provided. These conditions are entirely covered from the Government standpoint and provide for termination by the Government under certain conditions if we do not perform; also, there is a very good provision with respect to continuation of the work under the socalled Stage 1 being dependent upon some of the first work and the discovery of ore. Then under Stage 2, there is a provision that only by Government approval will this be undertaken after Stage 1 is completed. We agree entirely with the intent of this; the only question lies in the fact that we ourselves might not be satisfied with the results and some Government engineer might say, yes, these results from a standpoint of ore are satisfactory. Would we then be under the compulsion of proceeding to completion? In other words, the Government has made very positive and correct reservations that would guard against spending the total amount if after expenditure of a partial amount, results are no good; but we do not have any similar rights.

Our whole point is, we believe there is a good chance under this project or we would never have made the application; we need and welcome the Government help in carrying this through to completion if it is worthwhile, but we do not want to unnecessarily spend either Government money or our own if, in our opinion, results at certain points do not warrant continuation.

I would appreciate some word from you on this one question, and then if advisable, I could see you in Tucson. My plans now call for me to be in Arizona probably the last week of this month.

Do you think that our question and suggestion is reasonable; and is it a permissable procedure under the regular Government thinking and projects of this type?

Yours very truly,

Raymond F. Orr, Pres.
Fort Smith, Arkansas

RFO/j

9/17/5-

Contract sent to Field Team for signature on July 30, 195-

To date contract has not been returned.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 15 1952

224 New Customhouse
Denver 2, Colorado

September 10, 1952

RECEIVED
SEP 17 1952
GENERAL COUNSEL
DEFENSE MINERALS
ADMINISTRATION

Memorandum

To: C. O. Mittendorf, Administrator, DMEA

From: Executive Officer, Field Team, Region IV

Subject: DMEA Docket 2366, Athletic Mining Company

Enclosed is a copy of a letter dated September 3, 1952, from Raymond F. Orr, President, Athletic Mining Company. Also enclosed is a copy of our reply.

We would appreciate any comments you would care to make on the policy of the DMEA regarding termination of contracts.

W. H. King

W. H. King

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
SEP 15 1952

224 New Customhouse
Denver 2, Colorado

September 10, 1952

Memorandum

To: C. O. Mittenderf, Administrator, DMEA

From: Executive Officer, Field Team, Region IV

Subject: DMEA Docket 2366, Athletic Mining Company

Enclosed is a copy of a letter dated September 3, 1952, from Raymond F. Orr, President, Athletic Mining Company. Also enclosed is a copy of our reply.

We would appreciate any comments you would care to make on the policy of the DMEA regarding termination of contracts.

W. H. King
W. H. King

Enclosures

ATHLETIC MINING COMPANY
Harvie L. Horton, Vice Pres. and Mgr.
Safford, Arizona

P. O. Box 540
Fort Smith Arkansas
September 3, 1952

Mr. Walter R. Storms, Chief
Arizona-New Mexico Branch
U.S. Department of the Interior
Bureau of Mines-Mining Divn.
Region 4
Tucson, Arizona

Dear Mr. Storms:

Just a few days ago, I returned from an absence of about two weeks and found your letter of August 15th together with copies of the contract referred to.

You know the situation in which the lead and zinc industry, and zinc in particular, finds itself today under the prevailing East St. Louis price of 14¢ for zinc. You perhaps don't know the rough sledding that some companies are having as they endeavor to continue operations. Both of us know though of cases where there have been shutdowns of mining properties because of the low price for concentrates.

The contract which you have prepared and the general conditions are entirely satisfactory; there is one point on which we are not certain and we would like to clear that before we finally execute the agreement. This has to do with the conditions under which the program might be stopped short of an expenditure of the entire amount as provided. These conditions are entirely covered from the Government standpoint and provide for termination by the Government under certain conditions if we do not perform; also, there is a very good provision with respect to continuation of the work under the socalled Stage I being dependent upon some of the first work and the discovery of ore. Then under Stage 2, there is a provision that only by Government approval will this be undertaken after Stage I is completed. We agree entirely with the intent of this; the only question lies in the fact that we ourselves might not be satisfied with the results and some Government engineer might say, yes, these results from a standpoint of ore are satisfactory. Would we then be under the compulsion of proceeding to completion? In other words, the Government has made very positive and correct reservations that would guard against spending the total amount if after expenditure of a partial amount, results are no good; but we do not have any similar rights.

Our whole point is, we believe there is a good chance under this project or we would never have made the application; we need and welcome the Government help in carrying this through to completion if it is worthwhile, but we do not want to unnecessarily spend either Government money or our own if, in our opinion, results at certain points do not warrant continuation.

I would appreciate some word from you on this one question, and then if advisable, I could see you in Tucson. My plans now call for me to be in Arizona probably the last week of this month.

Do you think that our question and suggestion is reasonable; and is it a permissable procedure under the regular Government thinking and projects of this type?

Yours very truly
/s/ Raymond F. Orr
Pres., Fort Smith, Arkansas

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

September 10, 1952

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Re: DMEA Docket 2366

Dear Mr. Orr:

This is in reply to your letter dated September 3, 1952, regarding the policy governing the termination of exploration project contracts.

It is true that there are no provisions in the contract form which authorize the operator to terminate a project. The project may be terminated at any time if in the opinion of the Government further operations are not justified. The operator will have to rely on the judgment of the Government engineer. Any such decision will be arrived at after a consultation between the representatives of the Government and the operator. We believe that in instances of this kind an agreement can be reached which will be mutually satisfactory.

Very truly yours,

W. H. King

W. H. King
Executive Officer
Field Team, Region IV

JFS:jp
cc Administrator DMEA
Subject
Chron
WRStorms
AHKoschmann (2)

UNITED STATES 500
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

August 11, 1952

Memorandum

To: Acting Administrator

From: Acting Chief, Base Metals Division

Subject: Teletype from W. H. King

In answer to Mr. King's inquiries, we wish to give you the following information on the dockets in question:

Athletic Mining Company, Docket No. DMEA-2366, Contract No. Idm-E378:- There is no question as to the legality of payment by unit costs in first paragraph of Stage I. That method of payment meets with the approval of our legal and accounting departments.

Yuma Metals, Inc., Docket No. DMA-1303X, Contract No. Idm-E371:- Letter explaining procedure, approved by legal and accounting departments, for payment of $2,500.00 for preparatory work was mailed on August 5, 1952.

H. F. Keller, Acting Chief
Base Metals Division

UNITED STA S
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON

July 29, 1952

Memorandum

To: Executive Officer, Region IV

From: DMEA Operating Committee

Subject: DMEA-2366, Athletic Mining Company contract

Upon execution of the attached contract, the Field Team will make distribution in accordance with instructions contained in Memorandum No. 10, dated July 24, 1952.

FILE COPY
SURNAME:
500
Corbett
Keller

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION
WASHINGTON 25, D. C.

Mr. W. H. King
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2366 (Lead-Zinc)
Athletic Mining and Smelting
Company

Dear Mr. King:

Enclosed please find the original and five copies of the Exploration Contract for the Athletic Mining and Smelting Co.

If the contract is acceptable, please have the copies signed, and distribute them in the approved manner.

It will be necessary to insert in the contract in the space provided under Article 3, the number of the days from the date of the contract in which work shall commence.

Sincerely yours,

7/30

George C. Selfridge (265)
ACTING Chairman, Operating Committee

Enclosures:

FXCorbett/mb
July 21, 1952

APPROVED:

J. H. Hedges (JHB)
Member, Bureau of Mines

D. M. Lemmon (JHB)
Member, Geological Survey

CC To: Docket
Operating Comm.
Adm. Reading File
Mr. Corbett
Mr. Keller
Mr. Bishop
Mr. McKnight
Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

June 13, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket DMEA 2366, Athletic Mining Company, (Lead-Zinc)

In reply to your letter dated May 29, 1952, requesting additional information on Docket DMEA 2366, we are attaching the original and three copies of a memorandum from L. L. Farnham, Mining Engineer.

W. H. King

W. H. King

Attachments

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
(DMEA)
JUN 16 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

June 13, 1952

Memorandum

To: Frank E. Johnson, Chairman, Operating Committee
Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: Docket DMEA 2366, Athletic Mining Company, (Lead-Zinc)

In reply to your letter dated May 29, 1952, requesting additional information on Docket DMEA 2366, we are attaching the original and three copies of a memorandum from L. L. Farnham, Mining Engineer.

W. H. King

W. H. King

Attachments

JrS:ld

cc: Docket, chron.
Roschmann
Storms

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
WASHINGTON
JUN 16 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Arizona-New Mexico Branch
SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

MINING DIVISION
REGION IV

Mining Division
Date Rec'd.
JUN 13 1952
BUREAU OF MINES
TUCSON, ARIZONA
Denver, Colorado

June 11, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Docket DMEA-2366, Athletic Mining Co., Graham County, Ariz.

As requested by your memorandum of June 4, with attached letter from the operating committee of DMEA in Washington, D. C., I am attaching the required information as furnished by L. L. Farnham. Farnham made the original engineering report on this property.

Walter R. Storms

Walter R. Storms

CC W. H. King (orig. & 8)
DMEA-2366
DF

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
JUN 16 1952

FOR VICTORY
BUY UNITED STATES SAVINGS BONDS AND STAMPS

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
MINING DIVISION
REGION IV

Arizona-New Mexico Branch
SOUTHWEST EXPERIMENT STATION
Box 4097
UNIVERSITY STATION

TUCSON, ARIZONA

June 11, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Br., Mining Div., Region IV., Tucson, Ariz.

From : L. L. Farnham, Mining Engineer, Tucson, Ariz.

Subject : Docket DMEA-2366, Athletic Mining Co., Graham Co., Ariz.

The additional information requested by the Operating Committee in their letter of May 29, 1952 with reference to Docket DMEA-2366 is given below.

1. The size of the proposed underground excavations were not specified by the applicant. The following approximate sizes would appear suitable for the proposed exploration:

Kind	Rock dimensions
Shaft - 2-compartment	6 by 12 feet
Drifts and crosscuts	5 by 7 feet
Raise - main	6 by 8 feet
Raises - short prospect	5 by 7 feet

2. The following breakdown of the costs of the underground openings, as estimated by the examiners, were based on the general rates[1] and supply costs prevailing in Arizona at this time.

Estimated Cost of Shaft Sinking

Based on working 16 hours (2 shifts) a day for 6 days a week with an average advance of 2.5 feet daily.

1/ As mentioned in the field report, the applicant company contracts practically all of the underground work and has no local basic wage rate for other than surface employees.

CC W. H. King (Orig. & 8)
DMEA-2366
DF

Labor:

	Cost/day	Cost/foot
2 - Hoistmen @ $12	24.00	
2 - Topmen @ $11	22.00	
4 - Miners @ $15	60.00	
1 - Foreman[1] @ $16	16.00	
Overtime for 48-hour week	11.15	
Compensation insurance (10.58%)	14.09	
Unemployment insurance (2.7%)	3.60	
F.I.C.A. (1.5%)	2.00	
Total	$152.84	$61.14
Power (diesel fuel, gasoline and oil)		5.60
Explosives		6.00
Bits and steel		3.50
Pipe (steel and ventilating)		1.25
Repairs, replacements and miscellaneous		2.00
Timber[2] (Based on a cost of $100 M f.o.b. mine)		16.00
Total		95.49

A moderate flow of water can be expected which could readily increase the cost to $100 a foot.

1/ Devoting one half time to each shift
2/ 8 by 8-inch sets, 4.5 by 9 feet in clear, spaced at 5-foot intervals and lagged on all sides.

Estimated Cost of Drifting and Crosscutting:

Based on working 16 hours a day (2 shifts) for 6 days a week with an average advance of 8 feet daily.

Labor	Cost/day	Cost/foot
2 Hoistmen @ $12	$24.00	
2 Topmen @ $11	22.00	
4 Miners @ $14	56.00	
1 Foreman @ 16	16.00	
Overtime for 48-hour week	9.83	
Compensation insurance (10.58%)	13.84	
Unemployment insurance (2.7%)	3.45	
F.I.C.A. (1.5%)	1.91	
Total labor	$147.03	$18.38
Power - Diesel fuel, gasoline and oil		2.00
Explosives		2.90
Bits and steels		1.50
Track		1.00
Pipe		0.50
Ventube & Miscellaneous		1.00
Total cost without timber		$27.28

The timber requirements are unknown but it would appear safe to assume that spots of bad ground would be encountered that would require timbering. Thus $30 a foot seems a reasonable estimate.

3. The applicant's estimates of the costs of shaft sinking, drifting, and crosscutting were $55 and $24 a foot, respectively. As these costs were not broken down in the application, the difference between the applicants and the field teams' estimates cannot be explained. The loan application evidently was prepared at the head office of the applicant in Fort Smith, Ark., so the local manager at the mine was not familiar with the basis used in the estimates as given in the application. In this case it would appear preferable to be liberal in estimating costs rather than make estimates that are apt to be lower than the actual costs.

4. The 400 feet of raising recommended in the field report consists of a main raise connecting the two proposed levels and several short prospect raises. The purpose of the main raise would be to determine the continuity of the ore along the dip while the short raises were for the purpose of exploring the full thickness of the mineralization that might overlie the back of the level drifts.

As shown on figure 4 of the field report the main raise would have an inclined length of about 120 feet, a rock section of approximately 6 by 8 feet with two compartments separated by a row of lagged stulls. Timbered as such it was estimated to cost $45 a foot. The balance of the raising (275 feet) made up of numerous short raises driven at intervals from the back of the drifts as required, need not exceed 5 by 7 feet in size. They would probably not require much timbering and thus were estimated to cost about the same as drifts or $30 a foot. Thus the average cost of all the raising was estimated as $35 a foot.

5. Inview of the uncertainties connected with the proposals for stage 2 of the project, it would seem desirable to have a contingency fund to cover that phase of the work.

6. Instead of stipulating 100 feet of crosscutting and 1,000 feet of drifting, it would be preferable from a flexibility standpoint to combine these two items and state in the contract 1,100 feet of drifting and crosscutting.

7. The consultant fees mentioned in the field report were for a geologist.

L. L. Farnham

L. L. FARNHAM, MINING ENGINEER
Arizona-New Mexico Branch

Mining Division
Date Rec'd.
JUN 13 1952
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Docket DMEA-2366, Athletic Mining Co., Graham County, Ariz.

As requested by your memorandum of June 4, with attached letter from the operating committee of DMEA in Washington, D. C., I am attaching the required information as furnished by L. L. Farnham. Farnham made the original engineering report on this property.

Walter R. Storms

Walter R. Storms

CC W. H. King (orig. & 8)
DMEA-2366
DF

WRStorms:frj

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Dr., Mining Div., Region IV., Tucson, Ariz.

From : L. L. Farnham, Mining Engineer, Tucson, Ariz.

Subject : Docket DMEA-2366, Athletic Mining Co., Graham Co., Ariz.

The additional information requested by the Operating Committee in their letter of May 29, 1952 with reference to Docket DMEA-2366 is given below.

1. The size of the proposed underground excavations were not specified by the applicant. The following approximate sizes would appear suitable for the proposed exploration:

Kind	Rock dimensions
Shaft - 2-compartment	6 by 12 feet
Drifts and crosscuts	5 by 7 feet
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2. The following breakdown of the costs of the underground openings, as estimated by the examiners, were based on the general rates[1] and supply costs prevailing in Arizona at this time.

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Based on working 16 hours (2 shifts) a day for 6 days a week with an average advance of 2.5 feet daily.

1/ As mentioned in the field report, the applicant company contracts practically all of the underground work and has no local basic wage rate for other than surface employees.

CC W. H. King (Orig. & 8)
DMEA-2366
DF

LLFarnham:Frj

Labor:

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Overtime for 48-hour week	11.15	
Compensation insurance (10.58%)	14.09	
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F.I.C.A. (1.5%)	2.00	
Total	$152.84	$61.14
Power (diesel fuel, gasoline and oil)		5.60
Explosives		6.00
Bits and steel		3.50
Pipe (steel and ventilating)		1.25
Repairs, replacements and miscellaneous		2.00
Timber[2] (Based on a cost of $100 M f.o.b. mine)		16.00
Total		95.49

A moderate flow of water can be expected which could readily increase the cost to $100 a foot.

1/ Devoting one half time to each shift
2/ 8 by 8-inch sets, 4.5 by 9 feet in clear, spaced at 5-foot intervals and lagged on all sides.

Estimated Cost of Drifting and Crosscutting:

Based on working 16 hours a day (2 shifts) for 6 days a week with an average advance of 8 feet daily.

Labor

	Cost/day	Cost/foot
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Total labor	$147.03	$18.38
Power - Diesel fuel, gasoline and oil		2.00
Explosives		2.90
Bits and steels		1.50
Track		1.00
Pipe		0.50
Ventube & Miscellaneous		1.00
Total cost without timber		$27.28

The timber requirements are unknown but it would appear safe to assume that spots of bad ground would be encountered that would require timbering. Thus $30 a foot seems a reasonable estimate.

3. The applicant's estimates of the costs of shaft sinking, drifting, and crosscutting were $55 and $24 a foot, respectively. As these costs were not broken down in the application, the difference between the applicants and the field teams' estimates cannot be explained. The loan application evidently was prepared at the head office of the applicant in Fort Smith, Ark., so the local manager at the mine was not familiar with the basis used in the estimates as given in the application. In this case it would appear preferable to be liberal in estimating costs rather than make estimates that are apt to be lower than the actual costs.

4. The 400 feet of raising recommended in the field report consists of a main raise connecting the two proposed levels and several short prospect raises. The purpose of the main raise would be to determine the continuity of the ore along the dip while the short raises were for the purpose of exploring the full thickness of the mineralization that might overlie the back of the level drifts.

As shown on figure 4 of the field report the main raise would have an inclined length of about 120 feet, a rock section of approximately 6 by 8 feet with two compartments separated by a row of lagged stulls. Timbered as such it was estimated to cost $45 a foot. The balance of the raising (275 feet) made up of numerous short raises driven at intervals from the back of the drifts as required, need not exceed 5 by 7 feet in size. They would probably not require much timbering and thus were estimated to cost about the same as drifts or $30 a foot. Thus the average cost of all the raising was estimated as $35 a foot.

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6. Instead of stipulating 100 feet of crosscutting and 1,000 feet of drifting, it would be preferable from a flexibility standpoint to combine these two items and state in the contract 1,100 feet of drifting and crosscutting.

7. The consultant fees mentioned in the field report were for a geologist.

L. L. FARNHAM, MINING ENGINEER
Arizona-New Mexico Branch

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

From : Chief, Arizona-New Mexico Br., Mining Div., Region IV

Subject : Docket DMEA-2366, Athletic Mining Co., Graham County, Ariz.

As requested by your memorandum of June 4, with attached letter from the operating committee of DMEA in Washington, D. C., I am attaching the required information as furnished by L. L. Farnham. Farnham made the original engineering report on this property.

Walter R. Storms

Walter R. Storms

CC W. H. King (orig. & 8)
DMEA-2366
DV

WRStorms:frj

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Dr., Mining Div., Region IV., Tucson, Ariz.

From : L. L. Farnham, Mining Engineer, Tucson, Ariz.

Subject : Docket BMBA-2366, Athletic Mining Co., Graham Co., Ariz.

The additional information requested by the Operating Committee in their letter of May 29, 1952 with reference to Docket BMBA-2366 is given below.

1. The size of the proposed underground excavations were not specified by the applicant. The following approximate sizes would appear suitable for the proposed exploration:

Kind	Rock dimensions
Shaft - 2-compartment	6 by 12 feet
Drifts and crosscuts	5 by 7 feet
Raise - main	6 by 8 feet
Raises - short prospect	5 by 7 feet

2. The following breakdown of the costs of the underground openings, as estimated by the examiners, were based on the general rates[1] and supply costs prevailing in Arizona at this time.

Estimated Cost of Shaft Sinking

Based on working 16 hours (2 shifts) a day for 6 days a week with an average advance of 2.5 feet daily.

1/ As mentioned in the field report, the applicant company contracts practically all of the underground work and has no local basic wage rate for other than surface employees.

cc W. L. King (Orig. & 8)
BMBA-2366
SF

LLFarnham:Frj

Labor:

	Cost/day	Cost/foot
2 - Hoistmen @ $12	24.00	
2 - Topmen @ $11	22.00	
4 - Miners @ $15	60.00	
1 - Foreman[1] @ $16	16.00	
Overtime for 48-hour week	11.15	
Compensation insurance (10.58%)	14.09	
Unemployment insurance (2.7%)	3.60	
F.I.C.A. (1.5%)	2.00	
Total	$152.84	$61.14
Power (diesel fuel, gasoline and oil)		5.60
Explosives		6.00
Bits and steel		3.50
Pipe (steel and ventilating)		1.25
Repairs, replacements and miscellaneous		2.00
Timber[2] (Based on a cost of $100 M f.o.b. mine)		16.00
Total		95.49

A moderate flow of water can be expected which could readily increase the cost to $100 a foot.

1/ Devoting one half time to each shift
2/ 8 by 8-inch sets, 4.5 by 9 feet in clear, spaced at 5-foot intervals and lagged on all sides.

Estimated Cost of Drifting and Crosscutting:

Based on working 16 hours a day (2 shifts) for 6 days a week with an average advance of 8 feet daily.

Labor

	Cost/day	Cost/foot
2 Hoistmen @ $12	$24.00	
2 Topmen @ $11	22.00	
4 Miners @ $14	56.00	
1 Foreman @ 16	16.00	
Overtime for 48-hour week	9.65	
Compensation insurance (10.58%)	13.84	
Unemployment insurance (2.7%)	3.45	
F.I.C.A. (1.5%)	1.91	
Total labor	$147.03	$18.38
Power - Diesel fuel, gasoline and oil		2.00
Explosives		2.90
Bits and steels		1.50
Track		1.00
Pipe		0.50
Ventube & Miscellaneous		1.00
Total cost without timber		$27.28

The timber requirements are unknown but it would appear safe to assume that spots of bad ground would be encountered that would require timbering. Thus $30 a foot seems a reasonable estimate.

3. The applicant's estimates of the costs of shaft sinking, drifting, and crosscutting were $55 and $24 a foot, respectively. As these costs were not broken down in the application, the difference between the applicants and the field teams' estimates cannot be explained. The loan application evidently was prepared at the head office of the applicant in Fort Smith, Ark., so the local manager at the mine was not familiar with the basis used in the estimates as given in the application. In this case it would appear preferable to be liberal in estimating costs rather than make estimates that are apt to be lower than the actual costs.

4. The 400 feet of raising recommended in the field report consists of a main raise connecting the two proposed levels and several short prospect raises. The purpose of the main raise would be to determine the continuityof the ore along the dip while the short raises were for the purpose of exploring the full thickness of the mineralization that might overlie the back of the level drifts.

As shown on figure 4 of the field report the main raise would have an inclined length of about 120 feet, a rock section of approximately 6 by 8 feet with two compartments separated by a row of lagged stulls. Timbered as such it was estimated to cost $45 a foot. The balance of the raising (275 feet) made up of numerous short raises driven at intervals from the back of the drifts as required, need not exceed 5 by 7 feet in size. They would probably not require much timbering and thus were estimated to cost about the same as drifts or $30 a foot. Thus the average cost of all the raising was estimated as $35 a foot.

5. Inview of the uncertainties connected with the proposals for stage 2 of the project, it would seem desirable to have a contingency fund to cover that phase of the work.

6. Instead of stipulating 100 feet of crosscutting and 1,000 feet of drifting, it would be preferable from a flexibility standpoint to combine these two items and state in the contract 1,100 feet of drifting and crosscutting.

7. The consultant fees mentioned in the field report were for a geologist.

L. L. FARNHAM, MINING ENGINEER
Arizona-New Mexico Branch

Mining Division
Date Rec'd.

JUN 13 1952

BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : W. H. King, Acting Chief, Mining Div., Region IV

From : Chief, Arizona-New Mexico Dr., Mining Div., Region IV

Subject : Docket RMA-2366, Athletic Mining Co., Graham County, Ariz.

As requested by your memorandum of June 4, with attached letter from the operating committee of RMA in Washington, D. C., I am attaching the required information as furnished by L. L. Farnham. Farnham made the original engineering report on this property.

Walter R. Storms

Walter R. Storms

CC W. H. King (orig. & 8)
RMA-2366
DF

WRStorms:frj

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Dr., Mining Div., Region IV., Tucson, Ariz.

From : L. L. Farnham, Mining Engineer, Tucson, Ariz.

Subject : Docket DMRA-2366, Athletic Mining Co., Graham Co., Ariz.

The additional information requested by the Operating Committee in their letter of May 29, 1952 with reference to Docket DMRA-2366 is given below.

1. The size of the proposed underground excavations were not specified by the applicant. The following approximate sizes could appear suitable for the proposed exploration:

Kind	Rock dimensions
Shaft - 2-compartment	6 by 12 feet
Drifts and crosscuts	5 by 7 feet
Raise - main	6 by 8 feet
Raises - short prospect	5 by 7 feet

2. The following breakdown of the costs of the underground openings, as estimated by the examiners, were based on the general rates[1] and supply costs prevailing in Arizona at this time.

Estimated Cost of Shaft Sinking

Based on working 16 hours (2 shifts) a day for 6 days a week with an average advance of 2.5 feet daily.

1/ As mentioned in the field report, the applicant company contracts practically all of the underground work and has no local basic wage rate for other than surface employees.

cc W. R. King (Orig. & 3)
DMRA-2366
MF

LLFarnham:Prj

MINING DIVISION
REGION IV

June 11, 1952

Memorandum

To : Walter R. Storms, Chief, Arizona-New Mexico Dr., Mining Div., Region IV., Tucson, Ariz.

From : L. L. Farnham, Mining Engineer, Tucson, Ariz.

Subject : Docket DMMA-2366, Athletic Mining Co., Graham Co., Ariz.

The additional information requested by the Operating Committee in their letter of May 20, 1952 with reference to Docket DMMA-2366 is given below.

1. The size of the proposed underground excavations were not specified by the applicant. The following approximate sizes would appear suitable for the proposed exploration:

Kind	Rock dimensions
Shaft - 2-compartment	6 by 12 feet
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Based on working 16 hours (2 shifts) a day for 6 days a week with an average advance of 2.5 feet daily.

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cc W. L. King (Orig. & 0)
DMMA-2366
MF

LLFarnham:Frj

Labor:

	Cost/day	Cost/foot
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2 - Topmen @ $11	22.00	
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Total	$152.84	561.14
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Explosives		6.00
Bits and steel		3.50
Pipe (steel and ventilating)		1.25
Repairs, replacements and miscellaneous		2.00
Timber[2] (Based on a cost of $160 M f.o.b. mine)		16.00
Total		95.40

A moderate flow of water can be expected which could readily increase the cost to $100 a foot.

1/ Devoting one half time to each shift
2/ 8 by 8-inch sets, 4.5 by 9 feet in clear, spaced at 5-foot intervals and lagged on all sides.

Estimated Cost of Drifting and Crosscutting:

Based on working 16 hours a day (2 shifts) for 6 days a week with an average advance of 8 feet daily.

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Total labor	$147.03	$18.38
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Explosives		2.00
Bits and steels		1.50
Track		1.00
Pipe		0.50
Ventube & Miscellaneous		1.00
Total cost without timber		$27.23

The timber requirements are unknown but it would appear safe to assume that spots of bad ground would be encountered that would require timbering. Thus $30 a foot seems a reasonable estimate.

3. The applicant's estimates of the costs of shaft sinking, drifting, and crosscutting were $55 and $24 a foot, respectively. As these costs were not broken down in the application, the difference between the applicants and the field teams' estimates cannot be explained. The loan application evidently was prepared at the head office of the applicant in Fort Smith, Ark., so the local manager at the mine was not familiar with the basis used in the estimates as given in the application. In this case it would appear preferable to be liberal in estimating costs rather than make estimates that are apt to be lower than the actual costs.

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As shown on figure 4 of the field report the main raise would have an inclined length of about 120 feet, a rock section of approximately 6 by 8 feet with two compartments separated by a row of lagged stulls. Timbered as such it was estimated to cost $45 a foot. The balance of the raising (275 feet) made up of numerous short raises driven at intervals from the back of the drifts as required, need not exceed 5 by 7 feet in size. They would probably not require much timbering and thus were estimated to cost about the same as drifts or $30 a foot. Thus the average cost of all the raising was estimated as $35 a foot.

5. Inview of the uncertainties connected with the proposals for stage 2 of the project, it would seem desirable to have a contingency fund to cover that phase of the work.

6. Instead of stipulating 100 feet of crosscutting and 1,000 feet of drifting, it would be preferable from a flexibility standpoint to combine these two items and state in the contract 1,100 feet of drifting and crosscutting.

7. The consultant fees mentioned in the field report were for a geologist.

L. L. FARRAR, MINING ENGINEER
Arizona-New Mexico Branch

500
FILE COPY
SURNAME:

Moulds

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

MAY 28 1952

Mr. W. H. King
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2356
Athletic Mining Co.
Lead-Zinc

Dear Mr. King:

A review of the final report of the Field Team on the above referenced docket indicates that the following additional information will be needed before the contract can be drawn.

1. It would be desirable to stipulate in the contract the sizes of the drift, crosscut, and shaft. This makes it necessary for the Operator to complete the work according to the requirements as set up in the contract.

2. A breakdown of the costs per foot for drifting, crosscutting, and shaft sinking. These costs would be helpful to us in preparing Exhibit "A" of the contract.

3. The Field Team allows $100 per foot for shaft sinking; the applicant estimated $55 for the same work. We would appreciate an explanation of this difference in this cost, and, also, the difference in the Field Team's estimate of $30 for drifting and crosscutting and that of the Applicant of $14. These differences we are not questioning and are probably due to increased sizes of the drifts, crosscuts, and shaft as originally proposed by the applicant, and also, the Field Team, due to their experience, have pointed out to the applicant some costs that he has overlooked in making his estimates.

4. The Field Team recommends 400 feet of raising at $35 per foot. Would this be for a timbered raise and would it be a one or two compartment raise?

5. If a contingency fund of $1,870 is necessary, it would be more desirable if this amount could be prorated for each stage.

6. Instead of stipulating 100 feet of crosscutting and 1000 feet of drifting, would it be more desirable to combine these two and state 1100 feet of crosscutting and drifting? We believe that this would allow some flexibility in case it would be necessary to do more than 100 feet of crosscutting.

7. Consultant fees in Stages I and 2 we presume are for a geologist?

Any other information that you think would be necessary in drawing up this contract would be appreciated.

Sincerely yours,

5/29

(signed) FRANK E. JOHNSON (HB)

Chairman, Operating Committee
Defense Minerals Exploration
Administration

APPROVED:

D. H. Hedges (HB)
Member, Bureau of Mines

A. M. Lemmon (HB)
Member, Geological Survey

JWAlt/mef
5/27/52
ccto: Adm. R. File
Op. Comm.
Docket
Mr. Bishop
Mr. McKnight
Mr. Moulds
Mr. Alt
Region IV

Mr. W. H. King
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA 2366 (Lead-Zinc)
Athletic Mining and Smelting
Company

Dear Mr. King:

Enclosed please find the original and five copies of the Exploration Contract for the Athletic Mining and Smelting Co.

If the contract is acceptable, please have the copies signed, and distribute them in the approved manner.

It will be necessary to insert in the contract in the space provided under Article 3, the number of the days from the date of the contract in which work shall commence.

Sincerely yours,

George C. Selfridge

ACTING Chairman, Operating Committee

Enclosures:

APPROVED:

J. H. Hedges
Member, Bureau of Mines

A. M. Emmons
Member, Geological Survey

XXCorbett/mb
July 21, 1952
CC To: Docket
Operating Comm.
Adm. Reading File
Mr. Corbett
Mr. Keller
Mr. Bishop
Mr. McKnight
Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES
WASHINGTON 25, D. C.

May 21, 1952

Re: Docket DMEA-2366
Athletic Mining Company
Fort Smith, Arkansas

Memorandum

To: D. E. Moulds, Chief, Lead-Zinc Branch, DMEA

From: O. M. Bishop, U. S. Bureau of Mines

Subject: DMEA-2366, Athletic Mining Company
Aravaipa Mining District, Graham County, Arizona.

This docket has been referred to the field team and we have received their geologic and engineering reports, both of which have recommended a two-stage project, the total estimated cost of which will be $101,845. Stage I will consist of about 2550 ft. of diamond drilling at 7 locations to determine the advisability of phase 2 of the program. Should the drilling indicate that further exploration is warranted then the next phase of the program will be selection of the shaft site and sinking. Allowance is made for 165 ft. of sinking, 1000 ft. of drifting, 100 ft. of crosscutting and 400 ft. of raising.

We have reviewed the cost distribution of the project and find that it is reasonable. Geologic factors suggest the exploration to be warranted. We therefore concur with the field team's recommendation that an exploration loan of $101,845 be approved.

O M Bishop

O. M. Bishop
Base Metals Branch

May 21, 1952

Re: Docket DMEA-2366
Athletic Mining Company
Fort Smith, Arkansas

Memorandum

To: D. E. Moulds, Chief, Lead-Zinc Branch, DMEA

From: O. M. Bishop, U. S. Bureau of Mines

Subject: DMEA-2366, Athletic Mining Company
Aravaipa Mining District, Graham County, Arizona.

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OMB

O. M. Bishop
Base Metals Branch

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

May 21, 1952

Memorandum

To: Mr. D. E. Moulds, DMEA

From: Erwin J. Lyons, USGS

Subject: Docket DMEA-2366, Athletic Mining Company

The subject docket was referred to the field team for their appraisal. After examination of the property and consultation with the applicant, the field team has recommended a two-stage project, the total estimated cost of which will be $101,845. Stage I will consist of about 2,550 ft. of diamond drilling. Stage II, which is dependent upon the success of Stage I, will consist of shaft sinking, drifting, crosscutting, and raising to explore more fully any mineralized ground found by drilling.

The properties to be explored are in the Aravaipa mining district, Graham County, Arizona. Two mineralized outcrops, less than 300 ft. apart, have been partly explored by the applicant by trenches, adits, and diamond drilling. The mineralization, which occurs in a limestone that has been altered to a lime-silicate rock, is present in the hanging wall of a normal fault whose footwall is quartzite. The mineralized zone and fault have a steep dip at the surface but apparently flatten out at depth.

The results obtained by the applicant are sufficiently favorable to warrant further exploration. The proposed project will investigate the mineralized zone at depth and attempt to connect the two mineralized areas.

We concur with the field team in recommending that the application be approved.

Erwin J. Lyons

Erwin J. Lyons,
Geologist

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

May 21, 1952

Memorandum

To: Mr. D. E. Moulds, DMEA

From: Erwin J. Lyons, USGS

Subject: Docket DMEA-2366, Athletic Mining Company

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The results obtained by the applicant are sufficiently favorable to warrant further exploration. The proposed project will investigate the mineralized zone at depth and attempt to connect the two mineralized areas.

We concur with the field team in recommending that the application be approved.

Erwin J. Lyons,
Geologist

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

May 8, 1952

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2366, (Lead-Zinc) Athletic Mining Company, Aravaipa Mining District, Graham County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration.

The estimated cost of stage 1 is $21,875 and of stage 2 is $78,100, making a total cost of $101,845 for the project.

The field examiners believe that the chances of finding ore bodies are favorable.

We concur in the recommendation of the field examiners that the application for exploration aid be approved.

W. H. King

W. H. King for
J. H. East, Jr.

A. H. Koschmann

A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1952

Mining Division
Region IV

May 8, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2366, (Lead-Zinc) Athletic Mining Company, Aravaipa Mining District, Graham County, Arizona

Enclosed are the original and eight copies of the final engineering report on the Athletic Mining Company's lead-zinc prospect, by L. L. Farnham of the U. S. Bureau of Mines.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration.

The estimated cost of the two stages is $101,845.

The field examiners believe that the chances of finding ore bodies are favorable and they recommend the approval of the application.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1952

Reviewed by
DMEA OPERATING COMMITTEE
5-14-52
(date)

Mining Division
Date Rec'd.
APR 21 1952
BUREAU OF MINES
Denver, Colorado

MINING DIVISION
REGION IV

April 16, 1952

Memorandum

To : W. M. King, Denver, Colorado

From : Chief, Arizona-New Mexico Branch

Subject : Final Report, DMEA Docket 2366, Athletic Mining Co's Zinc-Lead Prospect, Aravaipa Mining District, Graham County, Ariz.

Enclosed are original and 8 copies of the section on Summary, Conclusions and Recommendations by C. S. Bromfield of the Geological Survey and L. L. Farnham of the Bureau of Mines, and the section on Engineering by Farnham for the above report. A separate section on Geology will be submitted by the Geological Survey.

The examiners recommend that the proposed exploration be separated into two phases, the first to consist of core drilling, and the second to consist of shaft sinking, drifting, crosscutting and raising, this second phase to depend upon results of the initial drilling. These recommendations seem more reasonable then the applicant's proposal where both phases would be carried on at the same time.

This report and its recommendations have my approval.

Brochure will be returned by the Geological Survey.

Walter R. Storms

CC: W. M. King (8)
C. A. Anderson
DMEA-2366
DF

WRStorms:als

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.
200 New Customhouse
Denver 2, Colorado

April 24, 1952

Memorandum

To: DMEA Field Team, Region IV

From: A. H. Koschmann

Subject: DMEA Docket 2366, Athletic Mining Company, Graham County, Arizona (Lead-Zinc)

Enclosed are the original and 8 copies of the geologic report by Calvin S. Bromfield of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be approved.

Enclosed also are Figures 2, 3, and 4 which should be assembled with the engineering report as the copies of the figures submitted were left uncolored.

The brochure is enclosed.

A. H. Koschmann

A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (13)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O.Box 4126, Univ. Station
Tucson, Arizona

April 22, 1952

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: A. F. Shride, Tucson, Arizona

Subject: Geologic Report, DMEA 2366, Athletic Mining Company, Graham County, Arizona (Lead-Zinc)

Enclosed are the original and 8 copies of the above report by Calvin S. Bromfield of the Geological Survey.

This report and the recommendation that an exploration loan be granted have my approval. This recommendation is based on the favorable geologic potential for minable minerals; present development is such that reserves cannot be calculated.

The project is to be in two stages. The first stage is to be diamond-drilling to determine the geometry of the mineral-bearing zone and the best location for underground work. If the first stage is successful, a second stage of underground exploration is proposed. ?

Enclosed also are Figures 2, 3, and 4 which should be assembled with the engineering report. The copies of the figures submitted with the engineering report were inadvertently left uncolored.

The brochure is enclosed.

A. F. Shride
Acting District Supervisor
Arizona-New Mexico

Enclosures 13

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

DEFENSE MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
REGION IV

DMEA-2366, Athletic Mining Company's Zinc-Lead Prospect, Aravaipa Mining District Graham County, Arizona

C. S. Bromfield, Geologist
U. S. Geological Survey

L. L. Farnham, Mining Engineer
U. S. Bureau of Mines

April 1952

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By C. S. Bromfield[1/] and L. L. Farnham[2/]

In January 1952, the Athletic Mining Co. applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $101,845. The application was docketed as DMEA-2366. The funds requested were to be used for the exploration of a zinc-lead prospect located in the Aravaipa mining district of Graham County, Ariz. The property was visited by the examining team during the week of March 17, 1952.

Although small scale intermittent production of lead-silver ores was made from the Aravaipa district as early as the late seventies, no significant production was made until 1926. Due to the isolated location of the district, the lower grade ores with a high zinc content were of no value until 1947 when the applicant company built a selective flotation mill in the area. Since its erection the mill has remained in almost constant operation, treating about 100 tons of ore daily. At present the mill ore averages between 10 and 12 percent combined zinc-lead with minor amounts of copper and silver. No ore has been produced from the undeveloped area selected for the proposed exploration.

Two promising outcrops of zinc-lead mineralization are exposed at the site of the proposed project. Both appear to be replacement deposits with lime silicate minerals of the

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1/ Geologist, U. S. Geological Survey
2/ Mining Engineer, U. S. Bureau of Mines

contact metamorphic type. As exposed by the limited prospect openings the widths of the mineralized areas are of the order of 20 feet with a visible length of 100 feet at the southern outcrop and some 60 feet at the northern area. Former diamond drilling at two rather widely separated sites indicated that the altered limestone host rock in the area was mineralized over a greater extent than was evident from the surface exposures. Samples taken in the shallow adits showed that both the deposits contained minable widths of zinc-lead ore.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration. In order to keep the cost of the project within the limits of the requested loan it was found necessary to revise the procedure somewhat from that proposed in the application. However, these changes would not appear to effect the desired results of the proposed exploration and it would seem likely that the amount of work as recommended by the examiners would be sufficient to establish the value of the deposit.

The applicant company is a going concern and has, besides a competent staff, the facilities and equipment at hand that would be necessary for the proposed project. Should the exploration result in the discovery of minable ore, the applicant's present mill would be available for its treatment. The chances of finding worthwhile ore bodies appear favorable.

The applicant is prepared to share one-half of the estimated cost of the proposed exploration. Therefore, it is recommended that the requested loan of $101,845 be approved.

DMEA-2366, ATHLETIC MINING COMPANY'S ZINC-LEAD PROSPECT, ARAVAIPA MINING DISTRICT GRAHAM COUNTY, ARIZONA

Engineering Report

By L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

April 1952

DMEA-2366, ATHLETIC MINING COMPANY'S
ZINC-LEAD PROSPECT, ARAVAIPA MINING DISTRICT
GRAHAM COUNTY, ARIZONA

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INTRODUCTION

In January 1952, the Athletic Mining Co. applied to the Defense Minerals Administration for an exploration loan amounting to $101,845. The application was docketed as DMEA--2366. The requested loan was for the purpose of diamond drilling, shaft sinking and drifting, on a zinc-lead prospect in the Aravaipa mining district of Graham County, Ariz. The property was visited by the examining team during the week of March 17, 1952.

ACKNOWLEDGMENTS

Thanks are extended to Harvey L. Horton, the general manager of the Athletic Mining Co., for the assistance he gave the examining team during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The mining claims selected for the proposed exploration are situated in Sec. 25 and 36, T. 5 S., R. 19 E. in the Aravaipa mining district of western Graham County, Ariz. The area to be explored is a few hundred feet northeast of the old post office in the village of Aravaipa. The property is accessible by road either from Safford or Willcox, Ariz. (figure 1). Aravaipa is most easily reached by driving northwest from Safford on U. S. Highway 70 for 15 miles, thence westward on a good, but crooked, graded road for 27 miles to a junction in the valley of Aravaipa Creek. The northern branch at the road junction leads to the property. It is 8 miles from the junction to Klondyke and 10 miles from Klondyke to Aravaipa.

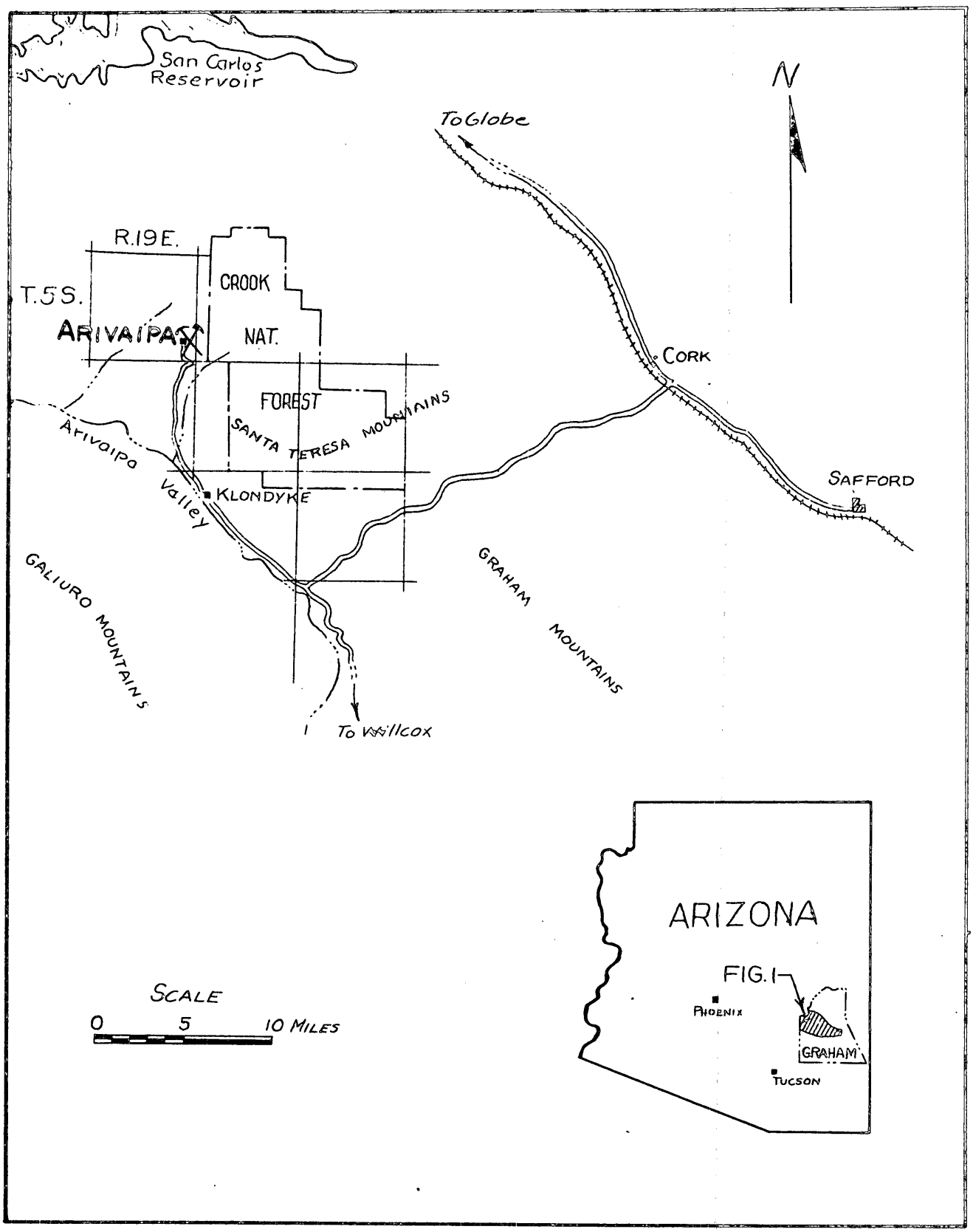

FIG. 1 - LOCATION MAP, ATHLETIC MINING COMPANY

DMEA 2366 X

Cork, a siding on the Southern Pacific railroad near Safford, is the nearest shipping point and is 45 miles from the property.

The area immediately surrounding the site of the proposed exploration is of moderate relief and lies at an altitude of about 4,600 feet above sea level.

HISTORY AND PRODUCTION

Although prospecting and small scale mining operations have been conducted in the Aravaipa district since the seventies, no significant production of lead-zinc ores was made until 1926. Activity ceased in 1928 and the district remained practically dormant until 1944, when the Athletic Mining Company started shipping crude lead ore from the Head Center and Iron Cap mines.

In 1947, this company erected a selective flotation mill near Klondyke where an adequate supply of water was available from shallow wells in the valley of Aravaipa Creek. The mill has remained in almost constant operation since its erection and at present is treating over 100 tons of ore daily. The ore is coming largely from the Iron Cap and Head Center mines, both of which are about 12 miles north of the mill. The grade of the mill ore was reported to average from 10 to 12 percent combined zinc and lead, a few tenths of one percent copper and very minor amounts of silver and gold. The mill concentrates are trucked 35 miles to Cork siding from where the lead

concentrates are shipped to El Paso, Tex., and the zinc concentrates to Athletic Mining & Smelting Co's, plant at Fort Smith, Ark. The applicant is a subsidiary of the above company.

OWNERSHIP AND EXTENT

The Athletic Mining Co. owns 29 patented mining claims in the Aravaipa district. Of this number, 4 contiguous claims, known as the Panama, Norton, Curtis and Colon, were selected for the proposed exploration project (figure 2).

The specific area to be explored lies wholly within the boundaries of the Panama claim.

DESCRIPTION OF THE DEPOSITS

Two separate, irregular areas of zinc-lead mineralization, occuring in a gangue of contact metamorphic type minerals, outcrop in the southeastern part of the Panama claim. The outcrops are marked by iron and manganese oxides whose presence forms conspicious gossans. The central portions of the deposits are about 300 feet apart with much of the intervening surface covered by gravel and talus. The strike of both the outcrops is northward with the footwall of the mineralization roughly adjacent and parallel to a prominent steeply dipping (73°) fault, - known locally as the Quartzite fault.

The mineralized area of the southern-most outcrop, as exposed by surface trenches and a shallow crosscut adit, has a maximum width of about 20 feet. Its length is traceable on

the surface for approximately 100 feet. There is a possibility that the mineralized zone is longer than that exposed on the surface for allivium and talus cover the area both north and south of the distance noted (figure 3).

Due to fewer prospect openings and more surface cover, the size and shape of the northern outcrop is more obscure than that of the southern deposit. At one point on the outcrop of the northern gossan the mineralization has a width of at least 20 feet. As exposed along the footwall by the shallow Havalina adit the mineralized zone has a measureable length of 60 feet and is still evident in the north face. It probably extends farther south than where it first was intersected by the adit (figure 3).

Although some galena and sphalerite were observed, the bulk of the mineralization in both of the deposits is throughly oxidized to the depth of the present openings. The lead and zinc minerals occur sporadically as irregular masses and stringers of various size in a gangue of quartz, calcite and lime silicate minerals. Locally, the latter are called actinolite.

Both of the deposits, as exposed by the prospect openings, appear to be dipping 70° to 75° to the west and are conformable to the dip of the Quartzite fault. This strongly suggests a tabular vein type deposit rather than a limestone replacement.

However, in view of the results of the 4 diamond drill holes it appears that the mineralization after leaving the fault zone has rather abruptly changed from a steep to a moderately flat dip, more or less conformable to the dip of the surface exposures of the overlying limestone (figure 4).

SAMPLING

The field team cut 4 samples in the project area, 3 of which were taken across the entire mineralized zone in the adit on the south deposit, and one from near the face of the Havalina adit in the northern mineralization. The location of these samples is shown on figure 4 and the results as follows:

No.	Width	Location	Percent zinc	Percent lead
12612	6 ft.	Footwall section, south adit	14.4	7.1
12613	6 ft.	Central section, south adit	5.2	2.4
12614	7.5 ft.	H. wall section, south adit	3.8	2.1
12615	6.0 ft.	Near footwall, Havalina adit	13.9	2.5

The weighted average of the 3 samples taken in the south adit, representing a width of 19.5 feet of mineralization, was 7.4 percent zinc and 4.3 percent lead. The footwall and central portion of this section, representing a width of 12 feet, averaged 9.8 percent zinc and 4.7 percent lead.

ORE RESERVES

There are no minable ore reserves on the claims selected for the proposed project.

PRESENT STATUS OF EXPLORATION

The location of the surface trenches and 2 shallow adits on the Panama claim are shown in figure 3. During 1948-1949, the applicant drilled 4 diamond drill holes in the area proposed for exploration (figure 3). None of the core resulting from this drilling was available to the examiners at the time the property was visited. The log of the holes, as interpreted by the applicant, and the core analyses are shown in the Appendix.

The holes designated as Panama No. 1 and No. 2 were located almost opposite the southern gossan. The inclined hole (No. 1), between 52 and 77.5 feet, passed through 25.5 feet of mineralization which, according to the applicant, averaged 8.1 percent zinc and 0.3 percent lead. The core recovery as shown for this section averaged about 95 percent. "Shines" of zinc-lead were reported to have extended to a depth of 103 feet where the hole passed into unaltered limestone. The vertical drill hole (No. 2), drilled from the same location as No. 1, showed 12 feet of mineralization between 59 and 71 feet, that averaged 5.6 percent zinc and 0.2 percent lead. For this section the core recovery was about 46.5 percent. The following 15 feet (71 to 86 feet) of this hole were logged as gray limestone. Between 86 and 98 feet, another 12 feet of mineralization was encountered that averaged 4.0 percent zinc and 0.2 percent lead, with 66 percent

core recovery. Mineralization averaging less than one percent zinc continued to a depth of 148 feet before the hole entered gray limestone.

Diamond drill holes No. 3 and No. 4 were located some distance north of the northern end of the mineralized outcrop and perhaps for that reason failed to show more encouraging results. Although no ore was encountered in these holes, they both showed the presence of some zinc and lead, thus indicating the probability that the mineralization is of greater lateral extent than that shown by the surface outcrops. The mineralized limestone as found in No. 3 and No. 4 had a flat westerly dip similar to that shown by holes No. 1 and No. 2 (figure 3).

PROPOSED EXPLORATION

The exploration program as proposed by the applicant consisted of 4,000 feet of diamond drilling, 300 feet of shaft sinking, and 1,200 feet of drifting. This work was designed for the purpose of simultaneously prospecting: (1) the mineralized vein paralleling the Quartzite fault; and (2) the actinolite areas that were found by the previous drilling. The applicant proposed that about 3,000 feet of the drilling would be done from 6 surface locations, designated as 1, 2, 3, 4, 5, 6, as shown on figure 3. Two holes, one vertical and one inclined, were to be drilled from each of the 6 sites. The location of the remaining 1,000 feet of the drilling that was requested, was not specified.

The site chosen for the proposed 300-foot shaft, which was to be sunk simultaneously with the drilling, was located on the southern outcrop of the so-called vein, adjacent to the Quartzite fault. According to the logs of the former diamond drill holes, submitted with the application, it appears that both the fault and the projection of this "vein" was intersected at a depth of 190 feet by drill hole No. 1 and no mineralization was found at that horizon (figure 3). Both drill holes No. 1 and No. 2, as shown, passed through a mineralized actinolite zone, the bottom of which was reported at depths of approximately 100 and 123 feet, respectively. From this evidence, it would appear that the so-called mineralized vein and the actinolite area were probably one and the same. If this is true, then a 300-foot shaft for the purpose of this project is not necessary, and the site selected by the applicant for this proposed shaft would not appear best suited for the further exploration or development of the property.

Due to the spotty and irregular nature of the lead-zinc mineralization, diamond drilling cannot be expected to satisfactorily determine the value of the mineralized bodies. To properly establish the grade of the deposits, conventional underground methods would be necessary. However, preliminary diamond drilling would seem to be useful in this case for the purpose of indicating the extent and attitude of the mineralization, whereby it should be possible to judge (1) whether

or not the deposits were extensive enough to justify further work, and if so, (2) the proper location and underground proceedure most suitable for the further exploration of the property.

In the opinion of the examiners, approximately 2,550 feet of preliminary diamond drilling would be sufficient to determine whether or not further exploration on the Panama claim was warranted. This phase of the project, as recommended by the examining team, would consist of drilling 7 vertical and 4 inclined holes from the surface locations shown as A, B, C, D, E, F, and G on figure 3. Two holes, one vertical and one inclined (about 50°) are proposed at each of the locations A, B, C, and D. A vertical hole at each site E, F, and G is recommended for the purpose of exploring the down-dip extension of the better mineralization beyond that of the first row of holes. Thus the location of E, F, and G would depend upon the results shown by holes A, B, C, and D.

Should the proposed diamond drilling indicate that further exploration of the deposit was warranted, then the next phase of the project would consist of underground work. This second phase cannot be specifically outlined until after the completion of the preliminary drilling. According to the logs, the 4 holes previously drilled on the Panama claim indicate that the lower portion of the mineralized zone has assumed a relatively flat dip. If this condition is confirmed

by the proposed preliminary drilling then, in general, the underground work could be setup as indicated in figure 4. On this basis, a site no doubt could be chosen from which a vertical shaft about 160 feet deep would reach the footwall of the best mineralization. The bottom of this shaft would be over 250 feet below the outcrop as measured along the dip of the mineralization, thus reaching almost the same depth as the 300-foot shaft as proposed by the applicant. Two levels driven from the shaft, each with 500 feet of drifting, together with the necessary crosscuts and raises, would no doubt constitute sufficient exploration to establish the value of the deposits and at the same time keep the cost of the project within the limits of the requested loan.

If the first phase of the work is approved, it is recommended that all the core resulting from the diamond drilling be preserved and properly labeled until such time as it could be inspected and logged by the DMEA supervising geologist or engineer. In case it was necessary or desirable to sample any of the core before it had been so inspected, it is recommended that all of that part of the core desired for analyses be crushed (rather than split) to between 4 and 8 mesh, and after cutting out a representative sample on a Jones riffle, the balance of the crushed core be saved for inspection.

ESTIMATED COST OF PROJECT

As shown in application

(a)	Diamond Drilling (by contract, including water hauling, mobilization and demobilization): 16 holes, 250 feet each or 4,000 feet @ $7.50		$ 30,000.00
(b)	Shaft Sinking (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 300 feet @ $55.00 per foot		16,500.00
(c)	Drifting (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 1,200 feet @ $24.00 per foot		28,800.00
(d)	Equipment (to be rented, maximum 15 months):		
	Hoist & Motor @ $150.00 per mo.	$2,250	
	Compressor & Motor @ 200.00 " "	3,000	
	Underground Drills, 3 @ 30.00 " "(ea)	1,350	
	Equipment (to be rented, maximum 8 months):		
	Diesel electric set, complete with 3-in. Triplex pump and electric motor, @ $300.00 per month	2,400	
	Total Equipment		9,000.00
(e)	Exploration Sinking Derrick:		2,450.00
(f)	Road and Ground Preparation:		3,000.00
(g)	Engineering and Geology:		
	Part time Engineer: 20 mos. @ $150 per mo.	$3,000	
	Part time Helper: 20 mos. @ $100 per mo.	2,000	
	Engineering Supplies and Maps	500	
	Consulting Geologist: (Periodic Supervision)	1,500	
	Total Engineering		7,000.00
(h)	Sampling and Assays:		1,000.00
(i)	General Overhead and Accounting: Part Time Employees, 20 mos. @ $150 per month		4,095.00
	Total cost of project as shown in application		$101,845.00

As recommended by the field team

Stage 1:

Diamond drilling by contract with competent contractor, 1/ 2,550 feet @ $7.50 a foot	$ 19,125
Supervision and Sampling, part-time engineer and helper - 6 months @ $250	1,500
Assaying	450
Consultant -- fees	500
Accounting and miscellaneous	300
Total cost of stage 1	$ 21,875

Stage 2:

The following generalized summary of the underground work is tentative and is based on the presumption that the attitude of the mineralization has a relatively flat westward dip as shown by the results of the applicant's previous drill holes.

165 feet of shaft @ $100	$ 16,500
1,000 feet of drifting @ $30	30,000
100 feet of crosscutting @ $30	3,000
400 feet of raising @ $35	14,000
Equipment - to be furnished by applicant consisting of hoist, compressor, drills pump, mine cars, slusher hoist and ventilating equipment having an approximate value of $12,000 - Allowable depreciation - 15 months @ $200 .	3,000
Road to shaft site and grading	2,000
Headframe, installing hoist and housing	2,500

1/ Based on the actual cost of previous diamond drilling in the district, $7.50 a foot is not considered excessive.

Supervision and engineering Part-time engineer and helper - 15 mos. @ $250	$ 3,750
Engineering supplies and maps	250
Sampling and assaying	600
Consulting fees	1,000
Accounting and miscellaneous	1,500
Total possible cost of Stage 2	$78,100
Total estimated cost of Stage 1	$21,875
Contingencies	$ 1,870
Total cost of project	$101,845

Manpower

At the present time the applicant is not experiencing any serious difficulties in securing sufficient men.

Power and Water

The Rural Electrification Administration is now engaged in building an electric transmission line to the property. Internal combustion engines, both diesel and gasoline, are the present source of power.

Water for the proposed exploration would have to be hauled to the project from the applicant's well near Klondyke.

Fixtures and Improvements

The applicant company has sufficient housing and boarding house facilities for the purpose of the proposed exploration work.

Operating Equipment

The diamond drilling of the first phase of the work would be performed by contract with the contractor furnishing all the necessary equipment, including drilling water.

The applicant owns and has on hand practically all of the mine equipment that would be necessary for the second stage of the project. A provisional summary of this equipment, together with the allowable depreciation, is given under the estimated cost of Stage 2.

Labor and Supervision

The applicant company contracts practically all of the underground work and has no basic wage scale for other than surface employees. The present wage is $11 a shift for hoist and pumpmen and $10 a shift for other surface labor. The standard labor contract for drifting was $6 a foot, $18 a foot for small inclined winzes, 4.5 cents a cubic foot for breaking ore in the stopes, and from 4.5 cents to 6 cents a cubic foot for mucking in the stopes. Under these contracts the company supplies everything except the direct labor.

Rehabilitation and Repairs

So far as is known at this time, no rehabilitation or repairs to existing facilities would be necessary in order to proceed with the proposed exploration.

Time Schedule

It appears that the entire project could be completed within 21 months, with not more than 6 months devoted to the first stage, and 15 months for the second phase of the proposed exploration.

CONCLUSIONS AND RECOMMENDATIONS

The outcrops of zinc-lead mineralization exposed on the Panama claim are promising prospects and are considered worthy of further exploration. The previous diamond drilling in the project area showed indifferent results so far as the grade of the deposits were concerned, but it did indicate that the mineralization had a considerable lateral extent. Thus it appeared possible that the deposits might be more extensive than shown by their exposed outcrops. The sampling and some of the diamond drill results showed that certain portions of the deposits contained minable widths of ore.

The proposed exploration program was divided into two stages, the first consisting of diamond drilling and the second of underground exploration. It was found necessary for financial reasons to reduce the amount of preliminary diamond drilling from 4,000 feet, as proposed by the applicant, to 2,550 feet. This latter amount, in the opinion of the field team, would be sufficient to determine whether or not the underground phase of the work would be advisable. Although a tentative program was suggested for stage 2 of the project, the specific proposals for the underground work must await the outcome of the first stage. It was found necessary to change the amount and procedure of the underground work from that proposed in the application, but it does not appear that the change would materially effect the desired results.

The applicant company is a going concern and has been mining in the district for the past 8 years. It has, besides the facilities and equipment necessary for the project, an operating selective flotation plant. Thus if ore was discovered by the proposed exploration, its contained zinc and lead would soon reach the market.

The present staff of the applicant appears competent to supervise the proposed work. The company is prepared to pay for 50 percent of the total cost of the project. Therefore, it is recommended that the requested loan amounting to $101,845 be approved.

APPENDIX

Logs of Diamond Drill Holes
Drilled by Athletic Mining Co.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 1 DATE: Winter-Spring, 1948-1949

DIRECTION: N65E

INCLINATION: -55°

From	To	Formation	Feet
0	22'	Overburden - sand, gravel, boulders.	22
22'	27'	Coarsely crystalline gray limestone.	5
27'	36'	Gray limestone and actinolite	9
36'	50'	Crystalline gray limestone with stretches of actinolite.	14
50'	52'	Dark brown gouge or mud.	2
52'	59'	Gray limestone mostly replaced by actinolite.	7
59'	66'	Mostly actinolite and tremolite, Scattered weak shines of ZnS, PbS. (62' end of BX core)	7
66'	72'4"	Mostly tremolite with occasional patches of actinolite and shines and small buttons of PbS.	6-1/3
72'4"	77'6"	Alternate sections of tremolite and limestone. Weak shines of ZnS, PbS. 4" good Zns at 73'6".	5-1/6
77'6"	79'6"	Crystalline gray limestone.	2
79'6"	89'6"	Mostly tremolite with patches of rose quartz. Occasional weak shines of Zns, Pbs.	10
89'6"	94'	Dense gray limestone.	4-1/2
94'	100'	Dense gray limestone, and tremolite. Shines ZnS, PbS.	6
100'	101'	Mostly tremolite. Good ZnS.	1
101'	103'	Mostly tremolite. Weak shines ZnS, PbS.	2
103'	132'	Limestone with occasional calcite crystals and dark streaks and patches.	29
132'	134'	Limestone breccia, possibly fault zone.	2
134'	134'6"	Dense gray limestone with dark dendritic patterns in fractures.	1/2
134'6"	149'	Andesite (?)	14-1/2
149'	152'	Shale or cemented gouge.	3
152'	155'	Quartzite, light gray.	3

Bottom of Hole at 155 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 1

Sampled		Pb	PbO	Zn	ZnO	Core Recovery
50'	52'	0.40		0.78		2'
52'	54'	0.30		8.52	0.39	
54'	56'	0.25		9.80	0.39	32"
56'	58'	0.15		5.19	0.39	
58'	60'	0.20		6.17	0.44	4' 9"
60'	62'	0.20		14.40	0.29	
62'	64'	0.25		13.73	0.39	19"
64'	66'	0.25		7.15	0.29	22"
66'	72'4"	0.45		7.35		7'
72'4"	77'6"	0.40		5.88		6' 6"
77'6"	79'6"	0.20		0.39		30"
79'6"	83'	0.25		0.49	0.29	3' 8"
83'	85'	0.30		1.86	0.39	2'
85'	87'	0.25		3.72	0.29	1' 9"
87'	89'6"	0.20		4.60	0.43	1' 9"
89'6"	94'	0.40		0.49	0.39	33"
94'	96'	0.45		2.25	0.39	
96'	98'	0.40		4.99	0.43	3' 6"
98'	100'	0.50		0.53	0.39	3'
100'	101'	4.30		5.88	0.34	1'
101'	103'	0.70		5.88	0.34	24"

Note: (average)

52'	77'6"	0.32		8.06		

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 2 DATE: Winter-Apring, 1948-1949

DIRECTION: -----

INCLINATION: Vertical

From	To	Formation	Feet
0	10'	Overburden.	10
10'	41'8"	Dense gray limestone.	31-2/3
41'8"	48'	Dense pink limestone. Somewhat altered with streaks of actinolite and gouge.	6-1/3
48'	71'	Limestone, actinolite and tremolite. Some sections with fair ZnS, shines PbS.	23
71'	85'	Crystalline gray limestone.	14
85'	148'	Gray limestone mostly replaced by actinolite, tremolite and dense gray chert. Occasional spots, streaks and shines of ZnS, Few shines of PbS.	63
148'	153'	Dense gray limestone.	5
153'	156'	Dense pink limestone. Some breccia and alteration.	3
156'	158'	Dense gray limestone and gray chert.	2
158'	163'	Dense gray and pink limestone. Considerable brecciation and alteration.	5
163'	164'	Gouge - possible fault zone.	1
164'	175'	Dark gray and brown shaly limestone. Soft and streaked with stringers of calcite.	11
175'	194'	Gray limestone with dark streaks at angle of about 45° with core.	19
194'	198'	Altered greenish gray limestone.	4
198'	208'	Andesite (?)	10
208'	221'	Quartzite	13

Bottom of Hole at 221 feet.

Assays on the following page

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
46'	50'	0.98		0.20		2'
50'	52'	0.58		0.25		1' 10"
52'	55'	0.98		0.15		2' 1"
55'	57'	0.78		0.20		2'
57'	59'	0.98		0.15		1' 10"
59'	61'	3.72		0.15		1' 2"
61'	63'	1.27		0.20		1' 8"
63'	65'	5.29		0.15		1' 11"
65'	71'	7.84		0.15		10"
86'	88'	1.37		0.20		2'
88'	90'	1.37		0.20		2'
90'	91'	5.88		0.20		1'
						(AX core to 90')
91'	96'	3.92		0.15		1'
96'	98'	8.72		0.20		1' 11"
98'	100'	0.78		0.20		1' 7"
100'	102'	0.53		0.15		1' 3"
102'	105'	0.68		0.20		1' 9"
105'	109'	1.27		0.15		1' 4"
109'	111'	1.66		0.20		1' 9"
111'	113'	0.88		0.20		1' 8"
113'	115'	0.98		0.10		1' 5"
115'	117'	0.53		0.15		2'
117'	119'	0.98		0.15		2'
119'	121'	0.98		0.20		1' 7"
121'	123'	0.98		0.15		1' 6"
123'	125'	0.58		0.30		23"
125'	127'	0.58		0.20		20"
127'	129'	0.49		0.20		22"
129'	131'	0.88		0.30		19"
131'	133'	0.44		1.50	0.70	21"
133'	135'	0.78		0.30		22"
135'	137'	0.49		0.30		12"
137'	139'	0.49		0.30		19"
139'	141'	0.49		0.30		21"
141'	143'	0.58		0.15		17"
143'	145'	0.78		0.30		17"
145'	147'	0.68		0.30		14"
147'	148'	0.58		0.20		10"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 3 DATE: Winter-Spring, 1948-1949

DIRECTION: N65E

INCLINATION: -45°

From	To	Formation	Feet
0	41'	Dense gray limestone. Many solution channels and vugs, some mud filled.	41
41'	43'	Dense gray lime with pink streaks and many calcite crystals.	2
43'	50'	Crystalline gray lime.	7
50'	53'	Gouge or red mud and actinolite.	3
53'	54'	Crystalline gray lime.	1
54'	56'	Black actinolite and red brown mud.	2
56'	67'	Dense gray lime with patches of calcite and some vugs.	11
67'	82'	Mostly actinolite. Streaks and buttons of ZnS, PbS. Some silicification.	15
82'	87'	Dense gray lime with occasional pink bands.	5
87'	90'	Crystalline gray lime with fair PbS and some actinolite. (Mineral may go past 90' as only 8" core recovery from 90' to 98'.)	3
90'	110'	Dense gray lime, badly broken with occasional patches of chert (?).	20
110'	111'	Soft, altered pink lime.	1
111'	128'	Mostly cherty lime, badly broken, little core recovery.	17
128'	142'	Broken quartzite.	14

Bottom of Hole at 142 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 3

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
67'	69'	0.88		0.20		24"
69'	72'	0.58		0.30		36"
						(BX core to 72')
72'	74'	0.68		0.30		19"
74'	76'	2.74	0.58	0.15		19"
76'	78'	0.68		0.20		17"
78'	80'	0.49		0.20		18"
80'	82'	0.58		0.30		17"
82'	87'	0.58		0.30		60"
87'	90'	0.88		7.50	5.40	35"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 4 DATE: Winter-Spring, 1948-1949

DIRECTION: -----

INCLINATION: Vertical

From	To	Formation	Feet
0	24'	Overburden - sand, gravel, boulders.	24
24'	31'	Dense, dark gray lime with thin seams of calcite at sharp angle to hole. Mud seam or gouge at 31'.	7
31'	39'	Coarsely crystalline gray lime.	8
39'	45'	Cavity filled with surface boulders and gravel.	6
45'	46'	Gouge or red mud seam.	1
46'	50'	Dense gray lime. Few spots black actinolite.	4
40'	55'	Black actinolite, tremolite with shines and streaks of PbS, ZnS.	5
55'	57'	Mostly tan tremolite and chert, shines ZnS, PbS.	2
57'	58'	Mostly black actinolite, some spots tremolite.	1
58'	62'	Mostly tan tremolite, considerable chert, shines ZnS, PbS.	4
62'	73'	Dense gray lime and light gray chert.	11
73'	75'	Lime, chert and calcite with red stains. Some PbS, ZnS.	2
75'	78'6"	Dense gray lime with spots actinolite, tremolite, ZnS, PbS.	3-1/2
78'6"	83'	Coarsely crystalline gray lime, with occasional streaks and patches of pink lime.	4-1/2
83'	86'	Mostly tan green and black tremolite and actinolite, badly broken.	3
86'	89'	Mostly tan green tremolite with occasional patches dense gray lime.	3
89'	105'	Alternate stretches of black tremolite, tan green actinolite, dense gray lime. Shines of PbS, ZnS. 1" button high grade PbS at 102'.	16
105'	149'	Dense gray lime.	44

Bottom of Hole at 149 feet

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 4

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
50'	55'	1.80	0.80	0.80		22"
55'	57'	1.60	0.80	0.35		24"
57'	59'	0.80		0.15		22"
59'	61'	0.90		0.20		24"
61'	63'	0.80		0.30		23"
63'	73'	0.70		0.20		40"
73'	75'	8.60	3.60	9.10	6.10	23"
75'	77'	5.60	1.50	3.50	1.00	18"
77'	78'6"	6.60	1.50	5.20	1.10	18"
78'6"	83'	0.90		0.20		49"
83'	85'	1.40	0.90	0.20		18"
85'	87'	0.80		0.25		
87'	89'	1.10	0.90	0.35		
89'	91'	1.30	0.90	0.40		
91'	93'	1.30	0.90	0.30		
93'	95'	0.60		0.25		21"
95'	97'	0.70		0.30		24"
97'	99'	0.80		0.20		20"
99'	101'	0.70		0.20		18"
101'	103'	5.80		0.70		20"
103'	105'	7.10	2.00	0.90		19"

ATHLETIC MINING COMPANY
GRAHAM COUNTY, ARIZONA
DMEA 2366

LEAD-ZINC

Geology

By
Calvin S. Bromfield
Geologist, U. S. Geological Survey

ATHLETIC MINING COMPANY
GRAHAM COUNTY, ARIZONA
DMEA 2366

LEAD-ZINC

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ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Geologic Map and Sections Showing Stage 1 Drilling	" " "
Fig. 4	Geologic Section Showing Stage 2 Proposal	" " "

INTRODUCTION

The property of the Athletic Mining Company, in the Aravaipa Mining District, Graham County, Arizona, lies near the northwest end of the Santa Teresa Mountains on the northeast side of Aravaipa Valley. The area the company proposes to explore for potential lead--zinc deposits is located 600 feet northeast of the old settlement of Aravaipa. The area is drained by southwesterly draining intermittent streams and is one of moderately rugged topography. Within the prospective exploration area the altitude ranges from 4500 to 4750 feet.

The district has made a sporadic production of lead-zinc ore from its discovery in 1870 until 1942. From 1942 to the present (1952) the Athletic Mining Company, the only active property in the district, has carried on continuous production. Deposits of lead-zinc are found as veins and replacements. Veins occur in limestone and igneous rocks, and replacements occur in limestone.

ROCKS

The Aravaipa region contains a variety of sedimentary, volcanic, and plutonic rocks. Sedimentary rocks include a Paleozoic section of unknown thickness, including at the base a thick Cambrian quartzite, overlain by shale, sandstone, and limestone of Devonian age, and topped by several hundred feet of Carboniferous limestones. Cretaceous sediments overlie the Paleozoic rocks with erosional unconformity. The

Paleozoic and Cretaceous rocks are covered to the east of the area, toward Aravaipa Valley, by thick Tertiary fanglomerates.

Intruding the Paleozoic and Cretaceous rocks are granite, rhyolite porphyry, andesitic and basaltic porphyry. These are of late Cretaceous to early Tertiary age.

Massive Cambrian quartzite, undifferentiated Paleozoic limestone, andesitic and basaltic porphyry predominate in the subject area.

What appears to be a limestone conglomerate outcrops in the area (Fig. 3). This body has been interpreted by D. R. Stewart, a consulting geologist for the Athletic Mining Company, as a diatreme; however, it resembles closely typical limestone conglomerate commonly found in the basal Cretaceous rocks of southeastern Arizona.

STRUCTURE

The various sedimentary and igneous rocks of the Aravaipa region are extensively faulted by steeply dipping faults of normal and reverse type, and by low angle thrust faults.

The area germane to this report is traversed by several steeply dipping north trending normal faults. The most important of these is known as the Quartzite fault, which dips 65°--75° to the west. It crosses the east edge of the area and faults Cambrian quartzite on the east against the later Paleozoic limestone and Tertiary-Cretaceous (?) volcanics on the west. Along it are scattered indications

of mineralization, in places of ore grade, and it is on some of these mineralized outcrops that the proposed exploration would be carried out.

The limestones in the downfaulted block dip at angles of 10°--25° to the west.

ORE DEPOSITS

General

Lead-zinc ore bodies are found in the Aravaipa district in vein and replacement type deposits. Vein deposits are found within steep to flat dipping faults of both normal and reverse type. Wall rocks include Paleozoic limestone and intrusive rhyolite. Irregular replacement deposits are found in limestone adjacent to or near faults that have prepared the ground by fracturing or brecciation. They commonly favor the hanging wall side of the faults and may occur in association with vein type deposits. The outcrops of the ore bodies are marked by oxides of iron and manganese together with variable amounts of quartz and silicate minerals.

Proposed Exploration Area

The applicant proposes exploring several favorable outcrops which occur on the Panama and Norton claims near Aravaipa. Scattered evidences of mineralization have been found along the northerly striking Quartzite fault over a length of 1000 feet. The proposed exploration will be concentrated near this fault in the area shown on Figure 3. Here two strongly mineralized outcrops occur within 300 feet and have been explored by shallow workings. The

northernmost of these two exposures shows an iron-manganese oxide stained outcrop in an irregular area of massive contact type silicates. This irregular mass of silicates appears to terminate along the Quartzite fault to the north and extends southward for approximately 200 feet, diverging slightly to the west from the fault (Fig. 3). The Havalina adit, 110 feet long; a 20 foot winze; and a 20 foot raise to the surface have superficially explored the outcrop. The mineralized zone at the surface, where exposed near the raise, is at least 20 feet wide. The footwall or eastern wall, is barren gouge or mylonite that occurs along the Quartzite fault; the hanging wall is not exposed. The length of the mineralized zone exposed underground is at least 60 feet and extends from just south of the winze to the face. South of the winze the Havalina adit is in the barren gouge on the footwall side of the vein, and the mineralization, if present, is not exposed. A sample taken over a 6 foot width near the face (Fig. 3) assayed 2.5 percent lead, and 13.9 percent zinc.

Sphalerite and galena are the ore minerals. The sphalerite is an iron free, pale yellow to colorless variety. The gangue is largely contact type silicates and pyrite. A variety of pyroxene, locally called actinolite or tremolite, is the dominant silicate. Calcite is common. Garnet and rhodocrosite (?) were observed. Veinlets and irregular masses of drusy quartz are locally abundant. Oxidation, though well advanced at the surface, was insignificant at the adit level, 20 feet below the outcrop.

The southernmost of the two outcrops is explored by two trenches located approximately 50 feet apart and across the vein, and by a 50 foot crosscut adit known as the Panama adit located between and parallel to the trenches (Fig. 3). The trenches and adit reveal a mineralized zone along the Quartzite fault. In the Panama adit and trenches the mineralized zone averaged 20 feet in thickness. Talus obscures the outcrops but float and small scattered outcrops of silicified vein material indicate the mineralized zone to have a length of at least 100 feet, and to extend not much south of the southernmost trench. Three samples cut across the zone in the adit (Fig. 3) assayed as follows:

	Length	%Pb	%Zn
Sample No. 1 -	6 ft.	7.11	14.4
" " 2 -	6 ft.	2.42	5.2
" " 3 --	7½ ft.	2.09	3.8

On the east side the vein is separated by approximately 5 feet of barren gouge from the quartzite footwall. The hanging wall of the vein is brecciated volcanic rock (Fig. 3).

The vein as exposed in the trenches and adit is considerably oxidized and consists of iron oxides, oxidation products of lead and zinc, veinlets and small masses of drusy quartz, small amounts of relict unoxidized galena, and calcite. In contrast to the Havalina area contact silicate type minerals are less abundant.

The Athletic Mining Company drilled 4 holes to test the mineralized area at depth. Two holes, a vertical and an inclined hole, were drilled at each of two locations; one at

the southernmost area and the other at the north end of the Havalina area (Fig. 3). Both inclined holes, which were angled toward the Quartzite fault, intersected quartzite at the bottom. Cross sections through these holes (Fig. 3) indicate that they probably encountered the fault, but mineralization was not encountered in that zone, as might have been expected from its apparent association with that structure at the surface. However, mineralization was encountered in a contact type silicate zone in all the holes. The relationship of the outcropping mineralization apparently localized by the Quartzite fault, and that encountered by drill holes is not clear.

Surface and near surface underground workings indicate the mineralized zone to be steeply inclined from 65°- 75° to the west, parallel to and closely associated with the fault. The diamond drill holes indicate the mineralized actinolite zone dips from 5° to 40° west, averaging about 35°.

The geology of the occurrence is uncertain. The drill core was not kept and so was not available for study by the examining team. Further drilling as outlined in the proposed exploration program will be necessary before the proposed shaft sinking can be intelligently planned.

PROPOSED PROGRAM

The program proposed will consist of two stages: the first stage will include approximately 2550 feet of diamond drilling, the second stage will include 150 feet of shaft sinking, drifting on two levels, and raising. The

outlines of this work are shown on Figures 3 and 4 and it is discussed in detail in the engineering report.

ORE RESERVES

Exploration of the proposed project area is too limited to make definite estimation of ore reserves. The two diamond drill locations drilled by the Athletic Mining Company indicate the presence of a mineralized contact type silicate zone at depth. The two drill sites are 400 feet apart. The presence of a significant body of ore in this zone, and the continuity of this zone can be established only by the drilling recommended in stage 1. At the surface the aggregate length of exposed mineralized zone, including both north and south outcrops, is 160 feet with an average width of 15 to 20 feet. It is inferred this zone in aggregate could yield 250 tons of lead-zinc ore per foot of depth.

GEOLOGIC CONCLUSIONS

The surface indications in the area it is proposed to explore are favorable. Two locations along the Quartzite fault in a length of 300 feet show mineralization of good width and ore grade. Drilling at two locations showed the presence of a mineralized zone at depth. In the opinion of the examining team the proposed program is warranted to further test the extent, nature, and grade of this mineralized zone. It is thought there is a reasonable chance of making a significant discovery of lead-zinc ore. It is recommended the program be approved.

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

May 8, 1952

Memorandum

To: Secretary to the Operating Committee, Defense Minerals Exploration Administration

From: Field Team, Region IV

Subject: Final Report, DMEA Docket 2346, (Lead-Zinc) Athletic Mining Company, Aravaipa Mining District, Graham County, Arizona

Enclosed are the original and three copies of the report pertaining to the above application.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration.

The estimated cost of stage 1 is $21,875 and of stage 2 is $78,100, making a total cost of $101,845 for the project.

The field examiners believe that the chances of finding ore bodies are favorable.

We concur in the recommendation of the field examiners that the application for exploration aid be approved.

W. H. King.
W. H. King for
J. H. East, Jr.

A. H. Koschmann
A. H. Koschmann

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1952

Mining Division
Region IV

May 8, 1952

Memorandum

To: Field Team, Region IV

From: Acting Chief, Mining Division, Region IV

Subject: Final Report, DMEA Docket 2366, (Lead-Zinc) Athletic Mining Company, Aravaipa Mining District, Graham County, Arizona

Enclosed are the original and eight copies of the final engineering report on the Athletic Mining Company's lead-zinc prospect, by L. L. Farnham of the U. S. Bureau of Mines.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration.

The estimated cost of the two stages is $101,845.

The field examiners believe that the chances of finding ore bodies are favorable and they recommend the approval of the application.

We concur in this recommendation.

W. H. King
W. H. King

Enclosures

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
MAY 12 1952

Reviewed by
DMEA OPERATING COMMITTEE
5-14-52
(date)

Mining Division
Date Rec'd.

APR 21 1952

BUREAU OF MINES
MINERAL DIVISION Denver, Colorado
REGION IV

April 16, 1952

Memorandum

To : W. H. King, Denver, Colorado

From : Chief, Arizona-New Mexico Branch

Subject : Final report, MLM Docket 2356, Mikkola Mining Co's Zinc-Lead Prospect, Aravaipa Mining District, Graham County, Ariz.

Enclosed are original and 8 copies of the section on Summary, conclusions and recommendations by C. S. Brentlinger of the Geological Survey and L. L. Farnham of the Bureau of Mines, and the section on Engineering by Farnham for the above report. A separate section on Geology will be submitted by the Geological Survey.

The examiners recommend that the proposed exploration be separated into two phases, the first to consist of core drilling, and the second to consist of shaft sinking, drifting, crosscutting and raising, this second phase to depend upon results of the initial drilling. These recommendations seem more reasonable than the applicant's proposal where both phases would be carried on at the same time.

This report and its recommendations have my approval.

Brochure will be returned by the Geological Survey.

Walter H. Storms

cc: W. H. King (8)
C. A. Anderson
MLM-2356
SF

WHStorms:als

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

210 New Customhouse
Denver 2, Colorado

April 24, 1952

Memorandum

To: DMA Field Team, Region IV

From: A. H. Koschmann

Subject: DMA Docket 2366, Athletic Mining Company, Graham County, Arizona (Lead-Zinc)

Enclosed are the original and 8 copies of the geologic report by Calvin C. Bromfield of the U. S. Geological Survey covering the above docket. It has been recommended that the loan be approved.

Enclosed also are Figures 2, 3, and 4 which should be assembled with the engineering report as the copies of the figures submitted were left uncolored.

The brochure is enclosed.

A. H. Koschmann
A. H. Koschmann
Supervising Geologist
Colorado-Wyoming

Enclosures (12)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
P.O. Box 4146, Univ. Station
Tucson, Arizona

April 22, 1954

Memorandum

To: A. H. Koschmann, Denver, Colorado

From: A. P. Gribble, Tucson, Arizona

Subject: Geologic Report, S.B.A. Prod., Athletic Mining Company, Graham County, Arizona (Lead-Zinc)

Enclosed are the original and 3 copies of the above report by Calvin S. Bromfield of the Geological Survey.

This report and the recommendation that an exploration loan be granted have my approval. This recommendation is based on the favorable geologic potential for minable minerals; present development is such that reserves cannot be calculated.

The project is to be in two stages. The first stage is to be diamond-drilling to determine the geometry of the mineral-bearing zone and the best location for underground work. If the first stage is successful, a second stage of underground exploration is proposed.

Enclosed also are Figures 2, 3, and 4 which should be assembled with the engineering report. The copies of the figures submitted with the engineering report were inadvertently left uncolored.

The brochure is enclosed.

A. P. Gribble
Acting District Supervisor
Arizona-New Mexico

Enclosures 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSCAR L. CHAPMAN, SECRETARY

STRATEGIC MINERALS EXPLORATION ADMINISTRATION

REPORT OF EXAMINATION BY FIELD TEAM
NUMBER IV

DMTA-2165, Atlantic Mining Company's Manganese Property, Aravaipa Mining District, Graham County, Arizona

C. B. Brookins, Geologist
U. S. Geological Survey

L. L. Fentress, Mining Engineer
U. S. Bureau of Mines

April 1952

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

By G. S. Bromfield[1] and L. L. Farnham[2]

In January 1952, the Athletic Mining Co. applied to the Defense Minerals Exploration Administration for an exploration loan amounting to $101,845. The application was docketed as DMEA-2366. The funds requested were to be used for the exploration of a zinc-lead prospect located in the Aravaipa mining district of Graham County, Ariz. The property was visited by the examining team during the week of March 17, 1952.

Although small scale intermittent production of lead-silver ores was made from the Aravaipa district as early as the late seventies, no significant production was made until 1926. Due to the isolated location of the district, the lower grade ores with a high zinc content were of no value until 1947 when the applicant company built a selective flotation mill in the area. Since its erection the mill has remained in almost constant operation, treating about 100 tons of ore daily. At present the mill ore averages between 10 and 12 percent combined zinc-lead with minor amounts of copper and silver. No ore has been produced from the undeveloped area selected for the proposed exploration.

Two promising outcrops of zinc-lead mineralization are exposed at the site of the proposed project. Both appear to be replacement deposits with lime silicate minerals of the

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1/ Geologist, U. S. Geological Survey
2/ Mining Engineer, U. S. Bureau of Mines

contact metamorphic type. As exposed by the limited prospect openings the widths of the mineralized areas are of the order of 20 feet with a visible length of 100 feet at the southern outcrop and some 60 feet at the northern area. Former diamond drilling at two rather widely separated sites indicated that the altered limestone host rock in the area was mineralized over a greater extent than was evident from the surface exposures. Samples taken in the shallow adits showed that both the deposits contained minable widths of zinc-lead ore.

The proposed exploration project has been divided into two stages, the first to consist of approximately 2,550 feet of diamond drilling and the second phase, contingent upon the results of the drilling, to consist of underground exploration. In order to keep the cost of the project within the limits of the requested loan it was found necessary to revise the procedure somewhat from that proposed in the application. However, these changes would not appear to effect the desired results of the proposed exploration and it would seem likely that the amount of work as recommended by the examiners would be sufficient to establish the value of the deposit.

The applicant company is a going concern and has, besides a competent staff, the facilities and equipment at hand that would be necessary for the proposed project. Should the exploration result in the discovery of minable ore, the applicant's present mill would be available for its treatment. The chances of finding worthwhile ore bodies appear favorable.

The applicant is prepared to share one-half of the estimated cost of the proposed exploration. Therefore, it is recommended that the requested loan of $101,345 be approved.

DMEA-2866, ATHLETIC MINING COMPANY'S ZINC-LEAD PROSPECT, ARAVAIPA MINING DISTRICT GRAHAM COUNTY, ARIZONA

Engineering Report

By L. L. Farnham
Mining Engineer
U. S. Bureau of Mines

April 1952

DMRA-2366, ATHLETIC MINING COMPANY'S
ZINC-LEAD PROSPECT, ARAVAIPA MINING DISTRICT
GRAHAM COUNTY, ARIZONA

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INTRODUCTION

In January 1952, the Athletic Mining Co. applied to the Defense Minerals Administration for an exploration loan amounting to $101,345. The application was docketed as DMA--2366. The requested loan was for the purpose of diamond drilling, shaft sinking and drifting, on a zinc-lead prospect in the Aravaipa mining district of Graham County, Ariz. The property was visited by the examining team during the week of March 17, 1952.

ACKNOWLEDGMENTS

Thanks are extended to Harvey L. Horton, the general manager of the Athletic Mining Co., for the assistance he gave the examining team during the examination of the property.

LOCATION AND PHYSICAL FEATURES

The mining claims selected for the proposed exploration are situated in Sec. 25 and 36, T. 5 S., R. 19 E. in the Aravaipa mining district of western Graham County, Ariz. The area to be explored is a few hundred feet northeast of the old post office in the village of Aravaipa. The property is accessible by road either from Safford or Willcox, Ariz. (figure 1). Aravaipa is most easily reached by driving northwest from Safford on U. S. Highway 70 for 15 miles, thence westward on a good, but crooked, graded road for 27 miles to a junction in the valley of Aravaipa Creek. The northern branch at the road junction leads to the property. It is 3 miles from the junction to Klondyke and 10 miles from Klondyke to Aravaipa.

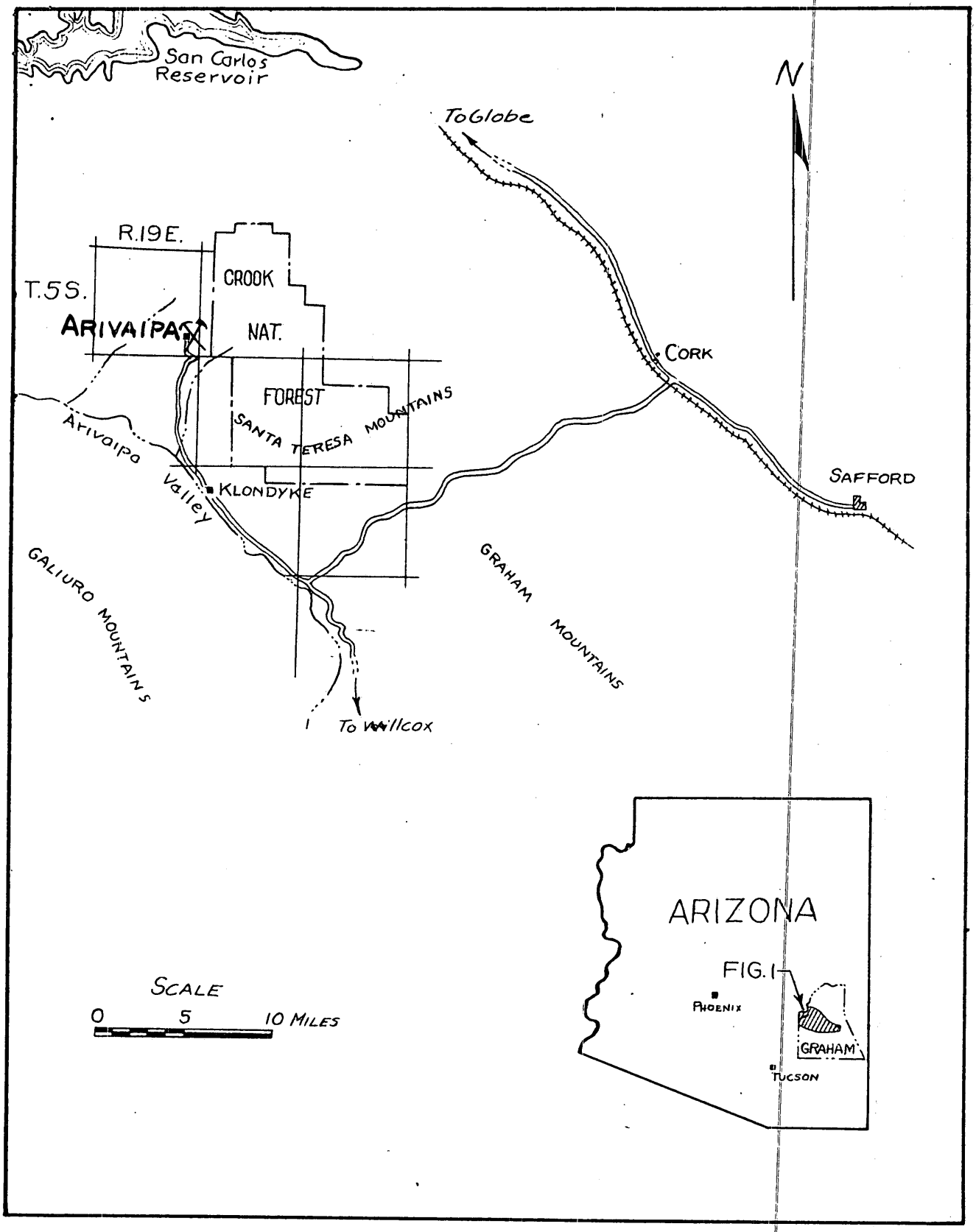


FIG. 1 - LOCATION MAP, ATHLETIC MINING COMPANY

DMEA 2366 X

Cork, a siding on the Southern Pacific railroad near Safford, is the nearest shipping point and is 45 miles from the property.

The area immediately surrounding the site of the proposed exploration is of moderate relief and lies at an altitude of about 4,600 feet above sea level.

HISTORY AND PRODUCTION

Although prospecting and small scale mining operations have been conducted in the Aravaipa district since the seventies, no significant production of lead-zinc ores was made until 1926. Activity ceased in 1928 and the district remained practically dormant until 1944, when the Athletic Mining Company started shipping crude lead ore from the Head Center and Iron Cap mines.

In 1947, this company erected a selective flotation mill near Klondyke where an adequate supply of water was available from shallow wells in the valley of Aravaipa Creek. The mill has remained in almost constant operation since its erection and at present is treating over 100 tons of ore daily. The ore is coming largely from the Iron Cap and Head Center mines, both of which are about 12 miles north of the mill. The grade of the mill ore was reported to average from 10 to 12 percent combined zinc and lead, a few tenths of one percent copper and very minor amounts of silver and gold. The mill concentrates are trucked 35 miles to Cork siding from where the lead

concentrates are shipped to El Paso, Tex., and the zinc concentrates to Athletic Mining & Smelting Co's, plant at Fort Smith, Ark. The applicant is a subsidiary of the above company.

OWNERSHIP AND EXTENT

The Athletic Mining Co. owns 39 patented mining claims in the Aravaipa district. Of this number, 4 contiguous claims, known as the Panama, Norton, Curtis and Colon, were selected for the proposed exploration project (figure 2).

The specific area to be explored lies wholly within the boundaries of the Panama claim.

DESCRIPTION OF THE DEPOSITS

Two separate, irregular areas of zinc-lead mineralization, occuring in a gangue of contact metamorphic type minerals, outcrop in the southeastern part of the Panama claim. The outcrops are marked by iron and manganese oxides whose presence forms conspicuous gossans. The central portions of the deposits are about 300 feet apart with much of the intervening surface covered by gravel and talus. The strike of both the outcrops is northward with the footwall of the mineralization roughly adjacent and parallel to a prominent steeply dipping (73°) fault, - known locally as the Quartzite fault.

The mineralized area of the southern-most outcrop, as exposed by surface trenches and a shallow crosscut adit, has a maximum width of about 20 feet. Its length is traceable on

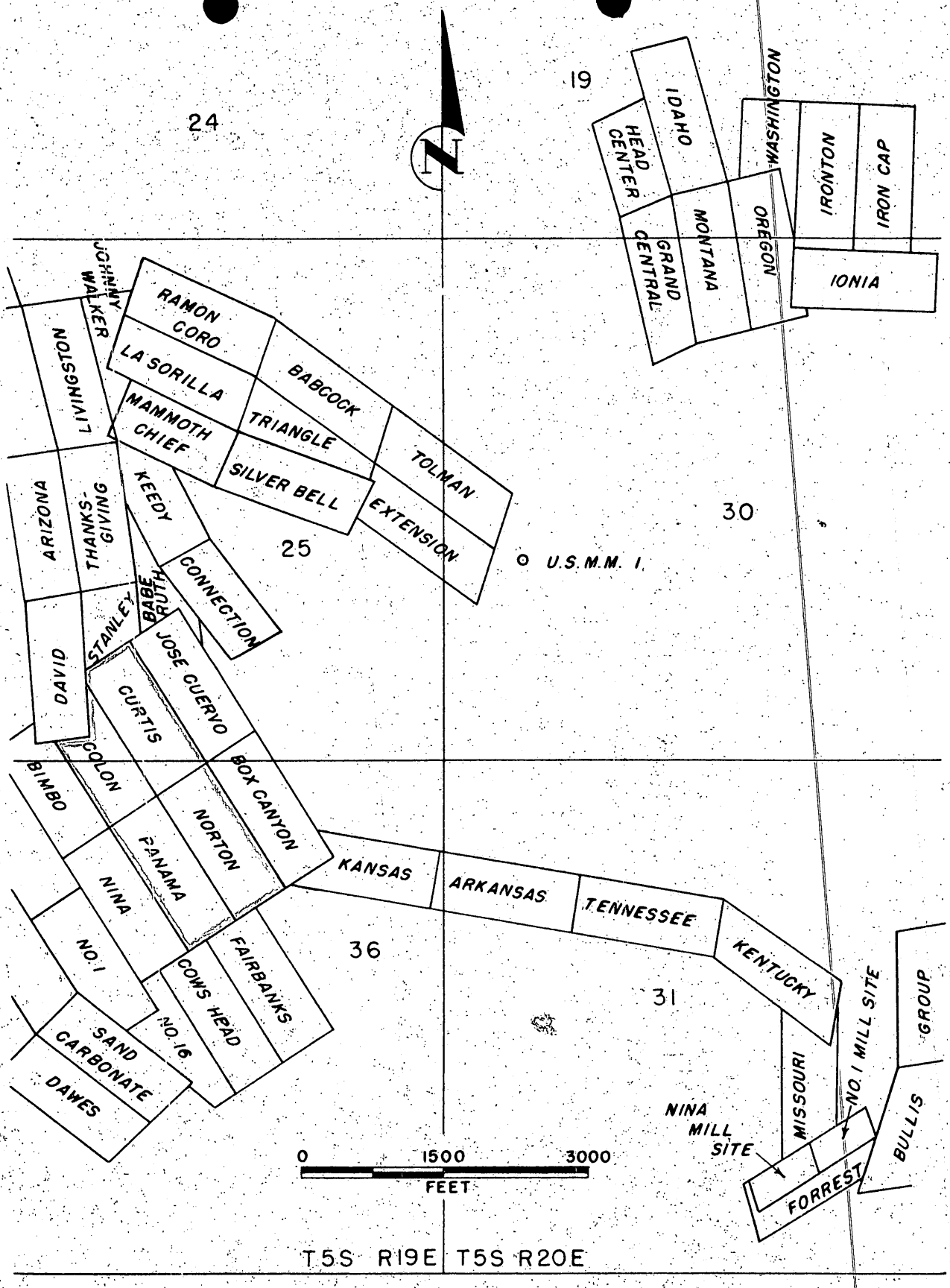


FIG. 2 ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA

the surface for approximately 100 feet. There is a possibility that the mineralized zone is longer than that exposed on the surface for alluvium and talus cover the area both north and south of the distance noted (figure 3).

Due to fewer prospect openings and more surface cover, the size and shape of the northern outcrop is more obscure than that of the southern deposit. At one point on the outcrop of the northern gossan the mineralization has a width of at least 20 feet. As exposed along the footwall by the shallow Havaline adit the mineralized zone has a measurable length of 60 feet and is still evident in the north face. It probably extends farther south than where it first was intersected by the adit (figure 3).

Although some galena and sphalerite were observed, the bulk of the mineralization in both of the deposits is throughly oxidized to the depth of the present openings. The lead and zinc minerals occur sporadically as irregular masses and stringers of various size in a gangue of quartz, calcite and lime silicate minerals. Locally, the latter are called actinolite.

Both of the deposits, as exposed by the prospect openings, appear to be dipping 70° to 75° to the west and are conformable to the dip of the Quartzite fault. This strongly suggests a tabular vein type deposit rather than a limestone replacement.

However, in view of the results of the 4 diamond drill holes it appears that the mineralization after leaving the fault zone has rather abruptly changed from a steep to a moderately flat dip, more or less conformable to the dip of the surface exposures of the overlying limestone (figure 4).

SAMPLING

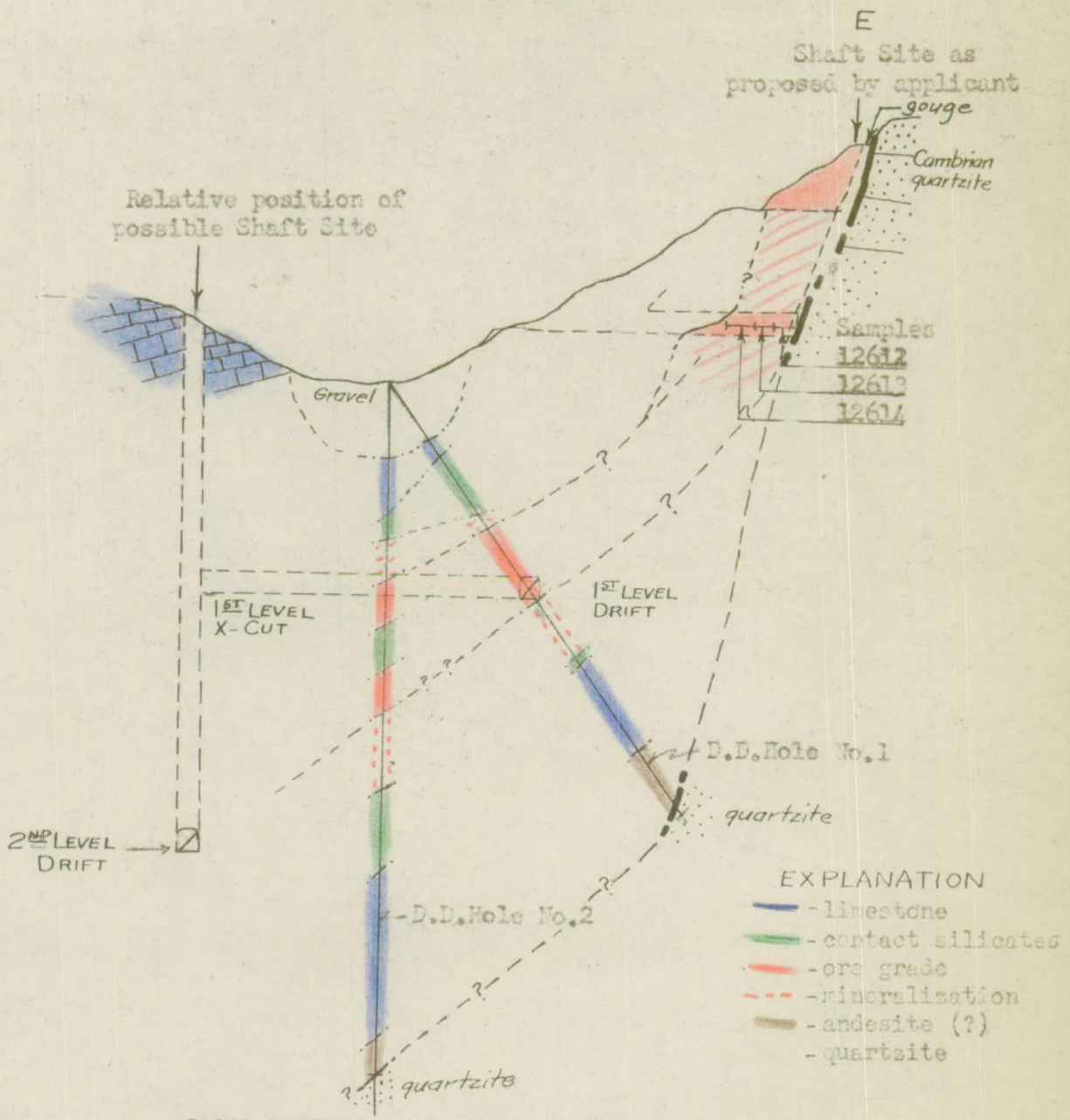
The field team cut 4 samples in the project area, 3 of which were taken across the entire mineralized zone in the adit on the south deposit, and one from near the face of the Havaline adit in the northern mineralization. The location of these samples is shown on figure 4 and the results as follows:

No.	Width	Location	Percent zinc	Percent lead
12612	6 ft.	Footwall section, south adit	14.4	7.1
12613	6 ft.	Central section, south adit	5.2	2.4
12614	7.5 ft.	H. wall section, south adit	3.8	2.1
12615	6.0 ft.	Near footwall, Havaline adit	13.9	2.5

The weighted average of the 3 samples taken in the south adit, representing a width of 19.5 feet of mineralization, was 7.4 percent zinc and 4.3 percent lead. The footwall and central portion of this section, representing a width of 12 feet, averaged 9.8 percent zinc and 4.7 percent lead.

ORE RESERVES

There are no minable ore reserves on the claims selected for the proposed project.



CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DMEA-2366; SCALE 1"= 50'

PRESENT STATUS OF EXPLORATION

The location of the surface trenches and 2 shallow adits on the Panama claim are shown in Figure 3. During 1948-1949, the applicant drilled 4 diamond drill holes in the area proposed for exploration (Figure 3). None of the core resulting from this drilling was available to the owners at the time the property was visited. The log of the holes, as interpreted by the applicant, and the core analyses are shown in the Appendix.

The holes designated as Panama No. 1 and No. 2 were located almost opposite the southern gossan. The inclined hole (No. 1), between 52 and 77.5 feet, passed through 25.5 feet of mineralization which, according to the applicant, averaged 8.1 percent zinc and 0.3 percent lead. The core recovery as shown for this section averaged about 95 percent. "Shines" of zinc-lead were reported to have extended to a depth of 103 feet where the hole passed into unaltered limestone. The vertical drill hole (No. 2), drilled from the same location as No. 1, showed 12 feet of mineralization between 59 and 71 feet, that averaged 5.6 percent zinc and 0.2 percent lead. For this section the core recovery was about 44.5 percent. The following 15 feet (71 to 86 feet) of this hole were logged as gray limestone. Between 86 and 93 feet, another 12 feet of mineralization was encountered that averaged 4.0 percent zinc and 0.2 percent lead, with 66 percent

core recovery. Mineralization averaging less than one percent zinc continued to a depth of 143 feet before the hole entered gray limestone.

Diamond drill holes No. 3 and No. 4 were located some distance north of the northern end of the mineralized outcrop and perhaps for that reason failed to show more encouraging results. Although no ore was encountered in these holes, they both showed the presence of some zinc and lead, thus indicating the probability that the mineralization is of greater lateral extent than that shown by the surface outcrops. The mineralized limestone as found in No. 3 and No. 4 had a flat westerly dip similar to that shown by holes No. 1 and No. 2 (figure 3).

PROPOSED EXPLORATION

The exploration program as proposed by the applicant consisted of 4,000 feet of diamond drilling, 300 feet of shaft sinking, and 1,200 feet of drifting. This work was designed for the purpose of simultaneously prospecting: (1) the mineralized vein paralleling the Quartzite fault; and (2) the actinolite areas that were found by the previous drilling. The applicant proposed that about 3,000 feet of the drilling would be done from 6 surface locations, designated as 1, 2, 3, 4, 5, 6, as shown on figure 3. Two holes, one vertical and one inclined, were to be drilled from each of the 6 sites. The location of the remaining 1,000 feet of the drilling that was requested, was not specified.

The site chosen for the proposed 300-foot shaft, which was to be sunk simultaneously with the drilling, was located on the southern outcrop of the so-called vein, adjacent to the Quartzite fault. According to the logs of the former diamond drill holes, submitted with the application, it appears that both the fault and the projection of this "vein" was intersected at a depth of 190 feet by drill hole No. 1 and no mineralization was found at that horizon (figure 3). Both drill holes No. 1 and No. 2, as shown, passed through a mineralized actinolite zone, the bottom of which was reported at depths of approximately 100 and 123 feet, respectively. From this evidence, it would appear that the so-called mineralized vein and the actinolite area were probably one and the same. If this is true, then a 300-foot shaft for the purpose of this project is not necessary, and the site selected by the applicant for this proposed shaft would not appear best suited for the further exploration or development of the property.

Due to the spotty and irregular nature of the lead-zinc mineralization, diamond drilling cannot be expected to satisfactorily determine the value of the mineralized bodies. To properly establish the grade of the deposits, conventional underground methods would be necessary. However, preliminary diamond drilling would seem to be useful in this case for the purpose of indicating the extent and attitude of the mineralization, whereby it should be possible to judge (1) whether

or not the deposits were extensive enough to justify further work, and if so, (2) the proper location and underground proceedure most suitable for the further exploration of the property.

In the opinion of the examiners, approximately 2,550 feet of preliminary diamond drilling would be sufficient to determine whether or not further exploration on the Panama claim was warranted. This phase of the project, as recommended by the examining team, would consist of drilling 7 vertical and 4 inclined holes from the surface locations shown as A, B, C, D, E, F, and G on figure 3. Two holes, one vertical and one inclined (about 50°) are proposed at each of the locations A, B, C, and D. A vertical hole at each site E, F, and G is recommended for the purpose of exploring the down-dip extension of the better mineralization beyond that of the first row of holes. Thus the location of E, F, and G would depend upon the results shown by holes A, B, C, and D.

Should the proposed diamond drilling indicate that further exploration of the deposit was warranted, then the next phase of the project would consist of underground work. This second phase cannot be specifically outlined until after the completion of the preliminary drilling. According to the logs, the 4 holes previously drilled on the Panama claim indicate that the lower portion of the mineralized zone has assumed a relatively flat dip. If this condition is confirmed

by the proposed preliminary drilling then, in general, the underground work could be setup as indicated in figure 4. On this basis, a site no doubt could be chosen from which a vertical shaft about 160 feet deep would reach the footwall of the best mineralization. The bottom of this shaft would be over 250 feet below the outcrop as measured along the dip of the mineralization, thus reaching almost the same depth as the 300-foot shaft as proposed by the applicant. Two levels driven from the shaft, each with 500 feet of drifting, together with the necessary crosscuts and raises, would no doubt constitute sufficient exploration to establish the value of the deposits and at the same time keep the cost of the project within the limits of the requested loan.

If the first phase of the work is approved, it is recommended that all the core resulting from the diamond drilling be preserved and properly labeled until such time as it could be inspected and logged by the DMA supervising geologist or engineer. In case it was necessary or desirable to sample any of the core before it had been so inspected, it is recommended that all of that part of the core desired for analyses be crushed (rather than split) to between 4 and 8 mesh, and after cutting out a representative sample on a Jones riffle, the balance of the crushed core be saved for inspection.

ESTIMATED COST OF PROJECT

As shown in application

(a)	Diamond Drilling (by contract, including water hauling, mobilization and demobilization): 16 holes, 250 feet each or 4,000 feet @ $7.50	$ 30,000.00
(b)	Shaft Sinking (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber) 300 feet @ $55.00 per foot	16,500.00
(c)	Drifting (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 1,200 feet @ $24.00 per foot	28,800.00
(d)	Equipment (to be rented, maximum 15 months):	
	Hoist & Motor @ $150.00 per mo. $2,250 Compressor & Motor " 200.00 " " 3,000 Underground Drills, 3 @ 30.00 " "(ea) 1,350	
	Equipment (to be rented, maximum 8 months):	
	Diesel electric set, complete with 3-in. Triplex pump and electric motor, @ $300.00 per month 2,400	
	Total Equipment	9,000.00
(e)	Exploration Sinking Derrick:	2,450.00
(f)	Road and Ground Preparation:	3,000.00
(g)	Engineering and Geology:	
	Part time Engineer: 20 mos. @ $150 per mo. 3,000 Part time Helper: 20 mos. @ $100 per mo. 2,000 Engineering Supplies and Maps 500 Consulting Geologist: (Periodic Supervision) 1,500	
	Total Engineering	7,000.00
(h)	Sampling and Assays:	1,000.00
(i)	General Overhead and Accounting: Part Time Employees, 20 mos. @ $150 per month	4,095.00
	Total cost of project as shown in application	$101,845.00

As recommended by the field team

Stage 1:

Diamond drilling by contract with competent contractor, 1/ 2,550 feet @ $7.50 a foot	$ 19,125
Supervision and sampling, part-time engineer and helper - 6 months @ $250	1,500
Assaying	450
Consultant -- fees	900
Accounting and miscellaneous	300
Total cost of stage 1	$ 21,275

Stage 2:

The following generalized summary of the underground work is tentative and is based on the presumption that the attitude of the mineralization has a relatively flat westward dip as shown by the results of the applicant's previous drill holes.

165 feet of shaft @ $100	$ 16,500 -
1,000 feet of drifting @ $30	30,000 -
100 feet of crosscutting @ $30	3,000 -
400 feet of raising @ $35	14,000 -
Equipment - to be furnished by applicant consisting of hoist, compressor, drills pump, mine cars, slusher hoist and ventilating equipment having an approximate value of $14,000 - Allowable depreciation - 15 months @ $200 .	3,000
Road to shaft site and grading	2,000
Headframe, installing hoist and housing	2,500

1/ Based on the actual cost of previous diamond drilling in the district, $7.50 a foot is not considered excessive.

Supervision and engineering Part-time engineer and helper - 15 mos. @ $250	$ 3,750
Engineering supplies and maps	250
Sampling and assaying	600
Consulting fees	1,000
Accounting and miscellaneous	1,500
Total possible cost of Stage 2	379,105
Total estimated cost of Stage 1	221,375
Contingencies	$ 1,[illegible]
Total cost of project	$101,[illegible]45

Manager

At the present time the applicant is not experiencing any serious difficulties in securing sufficient men.

Power and Water

The Rural Electrification Administration is now engaged in building an electric transmission line to the property. Internal combustion engines, both diesel and gasoline, are the present source of power.

Water for the proposed exploration would have to be hauled to the project from the applicant's well near Monkyin.

Fixtures and Improvements

The applicant company has sufficient housing and boarding house facilities for the purpose of the proposed exploration work.

Operating Equipment

The diamond drilling of the first phase of the work would be preformed by contract with the contractor furnishing all the necessary equipment, including drilling water.

The applicant owns and has on hand practically all of the mine equipment that would be necessary for the second stage of the project. A provisional summary of this equipment, together with the allowable depreciation, is given under the estimated costcof Stage 2.

Labor and Supervision

The applicant company contracts practically all of the underground work and has no basic wage scale for other than surface employees. The present wage is $11 a shift for hoist and pumpman and $10 a shift for other surface labor. The standard labor contract for drifting was $5 a foot, $14 a foot for small inclined winzes, 4.5 cents a cubic foot for breaking ore in the stopes, and from 4.5 cents to 6 cents a cubic foot for mucking in the stopes. Under these contracts the company supplies everything except the direct labor.

Rehabilitation and Repairs

So far as is known at this time, no rehabilitation or repairs to existing facilities would be necessary in order to proceed with the proposed exploration.

Time Schedule

It appears that the entire project could be completed within 21 months, with not more than 6 months devoted to the first stage, and 15 months for the second phase of the proposed exploration.

CONCLUSIONS AND RECOMMENDATIONS

The outcrops of zinc-lead mineralization exposed on the Panama claim are promising prospects and are considered worthy of further exploration. The previous diamond drilling in the project area showed indifferent results so far as the grade of the deposits were concerned, but it did indicate that the mineralization had a considerable lateral extent. Thus it appeared possible that the deposits might be more extensive than shown by their exposed outcrops. The sampling and core of the diamond drill results showed that certain portions of the deposits contained sizable widths of ore.

The proposed exploration program was divided into two stages, the first consisting of diamond drilling and the second of underground exploration. It was found necessary for financial reasons to reduce the amount of preliminary diamond drilling from 4,000 feet, as proposed by the applicant, to 1,550 feet. This latter amount, in the opinion of the field team, would be sufficient to determine whether or not the underground phase of the work would be advisable. Although a tentative program was suggested for stage 2 of the project, the specific proposals for the underground work must await the outcome of the first stage. It was found necessary to change the amount and procedure of the underground work from that proposed in the application, but it does not appear that the change would materially affect the desired results.

The applicant company is a going concern and has been mining in the district for the past 3 years. It has, besides the facilities and equipment necessary for the project, an operating selective flotation plant. Thus if ore was discovered by the proposed exploration, its contained zinc and lead would soon reach the market.

The present staff of the applicant appears competent to supervise the proposed work. The company is prepared to pay for 50 percent of the total cost of the project. Therefore, it is recommended that the requested loan amounting to $101,345 be approved.

APPENDIX

Logs of Diamond Drill Holes
Drilled by Athlotic Mining Co.

ATHLETIC MINING COMPANY
GAFFNEY, ARIZONA

HOLE NO. Panama No. 1 DATE: Winter-Spring, 1948-1949

DIRECTION: NESE

INCLINATION: -55°

From	To	Formation	Feet
0	22'	Overburden - sand, gravel, boulders.	22
22'	27'	Coarsely crystalline gray limestone.	5
27'	36'	Gray limestone and actinolite	9
36'	50'	Crystalline gray limestone with stretches of actinolite.	14
50'	52'	Dark brown gouge or mud.	2
52'	59'	Gray limestone mostly replaced by actinolite.	7
59'	66'	Mostly actinolite and tremolite. Scattered weak shines of ZnS, PbS. ((2' end of EX core)	7
66'	72'4"	Mostly tremolite with occasional patches of actinolite and shines and small buttons of PbS.	6-1/3
72'4"	77'6"	Alternate sections of tremolite and limestone. Weak shines of ZnS, PbS. 4" good Zns at 73'6".	5-1/6
77'6"	79'6"	Crystalline gray limestone.	2
79'6"	89'6"	Mostly tremolite with patches of rose quartz. Occasional weak shines of Zns, Pbs.	10
89'6"	94'	Dense gray limestone.	4-1/2
94'	100'	Dense gray limestone, and tremolite. Shines ZnS, PbS.	6
100'	101'	Mostly tremolite. Good ZnS.	1
101'	103'	Mostly tremolite. Weak shines ZnS, PbS.	2
103'	132'	Limestone with occasional calcite crystals and dark streaks and patches.	29
132'	134'	Limestone breccia, possibly fault zone.	2
134'	134'6"	Dense gray limestone with dark dendritic patterns in fractures.	1/2
134'6"	149'	Andesite (?)	14-1/2
149'	152'	Shale or cemented gouge.	3
152'	155'	Quartzite, light gray.	3

Bottom of Hole at 155 feet.

Assays on the following page.

METALLIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PAPAGO NO. 1

Sampled		Cu	Pb	Zn	ZnO	Core Recovery
50'	52'	0.40		0.73		2'
52'	54'	0.30		8.52	0.39	
54'	56'	0.25		9.80	0.39	32"
56'	58'	0.15		5.19	0.39	
58'	60'	0.20		6.17	0.44	4' 9"
60'	62'	0.20		14.40	0.29	
62'	64'	0.25		13.73	0.39	19"
64'	66'	0.25		7.15	0.29	22"
66'	72'4"	0.45		7.35		7'
72'4"	77'6"	0.40		5.83		6' 6"
77'6"	79'6"	0.20		0.39		30"
79'6"	83'	0.25		6.49	0.29	3' 8"
83'	85'	0.30		1.36	0.39	2'
85'	87'	0.25		3.72	0.29	1' 9"
87"	89'6"	0.20		4.00	0.43	1' 9"
89'6"	94'	0.40		0.49	0.39	33"
94'	96'	0.45		2.25	0.39	
96'	98'	0.40		4.99	0.43	9' 6"
98'	100'	0.50		0.53	0.39	3'
100'	101'	4.30		5.83	0.34	1'
101'	103'	0.70		5.83	0.34	24"

Note: (average)

52'	77'6"	0.32		6.06		

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 2 DATE: Winter-Spring, 1948-1949

DIRECTION: ——

INCLINATION: Vertical

From	To	Formation	Feet
0	10'	Overburden.	10
10'	41'8"	Dense gray limestone.	31-2/3
41'8"	48'	Dense pink limestone. Somewhat altered with streaks of actinolite and gouge.	6-1/3
48'	71'	Limestone, actinolite and tremolite. Some sections with fair ZnS, shines PbS.	23
71'	85'	Crystalline gray limestone.	14
85'	148'	Gray limestone mostly replaced by actinolite, tremolite and dense gray chert. Occasional spots, streaks and shines of ZnS, Few shines of PbS.	63
148'	153'	Dense gray limestone.	5
153'	156'	Dense pink limestone. Some breccia and alteration.	3
156'	158'	Dense gray limestone and gray chert.	2
158'	163'	Dense gray and pink limestone. Considerable brecciation and alteration.	5
163'	164'	Gouge - possible fault zone.	1
164'	175'	Dark gray and brown shaly limestone. Soft and streaked with stringers of calcite.	11
175'	194'	Gray limestone with dark streaks at angle of about 45° with core.	19
194'	198'	Altered greenish gray limestone.	4
198'	208'	Andesite (?)	10
208'	221'	Quartzite	13

Bottom of Hole at 221 feet.

Assays on the following page

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
46'	50'	0.93		0.20		2'
50'	52'	0.53		0.25		1' 10"
52'	55'	0.93		0.15		2' 1"
55'	57'	0.73		0.20		2'
57'	59'	0.93		0.15		1' 10"
59'	61'	3.72		0.15		1' 2"
61'	63'	1.27		0.20		1' 8"
63'	65'	5.29		0.15		1' 11"
65'	71'	7.34		0.15		10"
86'	88'	1.37		0.20		2'
88'	90'	1.37		0.20		2'
90'	91'	5.88		0.20		1'
						(AX core to 90')
91'	96'	3.92		0.15		1'
96'	98'	8.72		0.20		1' 11"
98'	100'	0.73		0.20		1' 7"
100'	102'	0.53		0.15		1' 3"
102'	105'	0.63		0.20		1' 9"
105'	109'	1.27		0.15		1' 4"
109'	111'	1.66		0.20		1' 9"
111'	113'	0.83		0.20		1' 8"
113'	115'	0.93		0.10		1' 5"
115'	117'	0.53		0.15		2'
117'	119'	0.93		0.15		2'
119'	121'	0.93		0.20		1' 7"
121'	123'	0.93		0.15		1' 6"
123'	125'	0.53		0.30		23"
125'	127'	0.53		0.20		20"
127'	129'	0.49		0.20		22"
129'	131'	0.83		0.30		19"
131'	133'	0.44		1.50	0.70	21"
133'	135'	0.73		0.30		22"
135'	137'	0.49		0.30		12"
137'	139'	0.49		0.30		19"
139'	141'	0.49		0.30		21"
141'	143'	0.53		0.15		17"
143'	145'	0.73		0.30		17"
145'	147'	0.63		0.30		14"
147'	148'	0.53		0.20		10"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 3 DATE: Winter-Spring, 1948-1949

DIRECTION: N65E

INCLINATION: -45°

From	To	Formation	Feet
0	41'	Dense gray limestone. Many solution channels and vugs, some mud filled.	41
41'	43'	Dense gray lime with pink streaks and many calcite crystals.	2
43'	50'	Crystalline gray lime.	7
50'	53'	Gouge or red mud and actinolite.	3
53'	54'	Crystalline gray lime.	1
54'	56'	Black actinolite and red brown mud.	2
56'	67'	Dense gray lime with patches of calcite and some vugs.	11
67'	82'	Mostly actinolite. Streaks and buttons of ZnS, PbS. Some silicification.	15
82'	87'	Dense gray lime with occasional pink bands.	5
87'	90'	Crystalline gray lime with fair PbS and some actinolite. (Mineral may go past 90' as only 8" core recovery from 90' to 93'.)	3
90'	110'	Dense gray lime, badly broken with occasional patches of chert (?).	20
110'	111'	Soft, altered pink lime.	1
111'	128'	Mostly cherty lime, badly broken, little core recovery.	17
128'	142'	Broken quartzite.	14

Bottom of Hole at 142 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
GANTEND, ARIZONA

ASSAYS FOR PANAMA NO. 3

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
67'	69'	0.83		0.20		24"
69'	72'	0.53		0.30		36"
						(BX core to 72')
72'	74'	0.68		0.30		19"
74'	76'	2.74	0.53	0.15		19"
76'	78'	0.62		0.20		17"
78'	80'	0.49		0.20		18"
80'	82'	0.53		0.30		17"
82'	87'	0.53		0.30		60"
87'	90'	0.88		7.50	5.40	35"

ATLANTIC MINING COMPANY
OAXACA, MEXICO

ASSAYS FOR PANAMA NO. 4

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
50'	55'	1.80	0.80	0.80		22"
55'	57'	1.60	0.80	0.35		24"
57'	59'	0.80		0.15		22"
59'	61'	0.90		0.20		24"
61'	63'	0.80		0.30		23"
63'	73'	0.70		0.20		40"
73'	75'	8.60	3.60	9.10	6.10	23"
75'	77'	5.60	1.50	3.50	1.00	18"
77'	78'6"	6.60	1.50	5.20	1.10	18"
78'6"	83'	0.90		0.20		49"
83'	85'	1.40	0.90	0.20		18"
85'	87'	0.80		0.25		
87'	89'	1.10	0.90	0.35		
89'	91'	1.30	0.90	0.40		
91'	93'	1.30	0.90	0.30		
93'	95'	0.60		0.25		21"
95'	97'	0.70		0.30		24"
97'	99'	0.80		0.20		20"
99'	101'	0.70		0.20		18"
101'	103'	5.80		0.70		20"
103'	105'	7.10	2.00	0.90		19"

ATHLETIC MINING COMPANY
GRAHAM COUNTY, ARIZONA
DMEA 2364

LEAD-ZINC

Geology

By
Calvin S. Bromfield
Geologist, U. S. Geological Survey

ATHLETIC MINING COMPANY
GRAHAM COUNTY, ARIZONA
DMRA 2364

LEAD-ZINC

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Proposed Program	6
Ore Reserves	7
Geologic Conclusions	7

ILLUSTRATIONS

Fig. 1	Location Map	See Engineering Report
Fig. 2	Claim Map	" " "
Fig. 3	Geologic Map and Sections Showing Stage 1 Drilling	" " "
Fig. 4	Geologic Section Showing Stage 2 Proposal	" " "

INTRODUCTION

The property of the Athletic Mining Company, in the Aravaipa Mining District, Graham County, Arizona, lies near the northwest end of the Santa Teresa Mountains on the northeast side of Aravaipa Valley. The area the company proposes to explore for potential lead--zinc deposits is located 600 feet northwest of the old settlement of Aravaipa. The area is drained by southwesterly draining intermittent streams and is one of moderately rugged topography. Within the prospective exploration area the altitude ranges from 4500 to 4750 feet.

The district has made a sporadic production of lead-zinc ore from its discovery in 1878 until 1942. From 1942 to the present (1952) the Athletic Mining Company, the only active property in the district, has carried on continuous production. Deposits of lead-zinc are found as veins and replacements. Veins occur in limestone and igneous rocks, and replacements occur in limestone.

ROCKS

The Aravaipa region contains a variety of sedimentary, volcanic, and plutonic rocks. Sedimentary rocks include a Paleozoic section of unknown thickness, including at the base a thick Cambrian quartzite, overlain by shale, sandstone, and limestone of Devonian age, and topped by several hundred feet of Carboniferous limestones. Cretaceous sediments overlie the Paleozoic rocks with erosional unconformity. The

Paleozoic and Cretaceous rocks are covered to the east of the area, toward Aravaipa Valley, by thick Tertiary fanglomerates.

Intruding the Paleozoic and Cretaceous rocks are granite, rhyolite porphyry, andesitic and basaltic porphyry. These are of late Cretaceous to early Tertiary age.

Massive Cambrian quartzite, undifferentiated Paleozoic limestone, andesitic and basaltic porphyry predominate in the subject area.

What appears to be a limestone conglomerate outcrops in the area (Fig. 1). This body has been interpreted by E. R. Stewart, a consulting geologist for the Athletic Mining Company, as a diatreme; however, it resembles closely typical limestone conglomerate commonly found in the basal Cretaceous rocks of southeastern Arizona.

STRUCTURE

The various sedimentary and igneous rocks of the Aravaipa region are extensively faulted by steeply dipping faults of normal and reverse type, and by low angle thrust faults.

The area germane to this report is traversed by several steeply dipping north trending normal faults. The most important of these is known as the Quartzite fault, which dips 65°--75° to the west. It crosses the east edge of the area and faults Cambrian quartzite on the east against the later Paleozoic limestone and Tertiary-Cretaceous (?) volcanics on the west. Along it are scattered indications

of mineralization, in places of ore grade, and it is on some of these mineralized outcrops that the proposed exploration would be carried out.

The limestones in the downfaulted block dip at angles of 10°—25° to the west.

ORE DEPOSITS

General

Lead-zinc ore bodies are found in the Arevaipa district in vein and replacement type deposits. Vein deposits are found within steep to flat dipping faults of both normal and reverse type. Wall rocks include Paleozoic limestone and intrusive rhyolite. Irregular replacement deposits are found in limestone adjacent to or near faults that have prepared the ground by fracturing or brecciation. They commonly favor the hanging wall side of the faults and may occur in association with vein type deposits. The outcrops of the ore bodies are marked by oxides of iron and manganese together with variable amounts of quartz and silicate minerals.

Proposed Exploration Area

The applicant proposes exploring several favorable outcrops which occur on the Panama and Norton claims near Arevaipa. Scattered evidences of mineralization have been found along the northerly striking Quartzite fault over a length of 1800 feet. The proposed exploration will be con - centrated near this fault in the area shown on Figure 3. Here two strongly mineralized outcrops occur within 300 feet and have been explored by shallow workings. The

northernmost of these two exposures shows an iron-manganese oxide stained outcrop in an irregular area of massive contact type silicates. This irregular mass of silicates appears to terminate along the Quartzite fault to the north and extends southward for approximately 200 feet, diverging slightly to the west from the fault (Fig. 3). The Havalina adit, 110 feet long; a 20 foot winze; and a 20 foot raise to the surface have superficially explored the outcrop. The mineralized zone at the surface, where exposed near the raise, is at least 20 feet wide. The footwall or eastern wall, is barren gouge or mylonite that occurs along the Quartzite fault; the hanging wall is not exposed. The length of the mineralized zone exposed underground is at least 60 feet and extends from just south of the winze to the face. South of the winze the Havalina adit is in the barren gouge on the footwall side of the vein, and the mineralization, if present, is not exposed. A sample taken over a 6 feet width near the face (Fig. 3) assayed 2.5 percent lead, and 13.9 percent zinc.

Sphalerite and galena are the ore minerals. The sphalerite is an iron free, pale yellow to colorless variety. The gangue is largely contact type silicates and pyrite. A variety of pyroxene, locally called actinolite or tremolite, is the dominant silicate. Calcite is common. Garnet and rhodocrosite (?) were observed. Veinlets and irregular masses of drusy quartz are locally abundant. Oxidation, though well advanced at the surface, was insignificant at the adit level, 20 feet below the outcrop.

The southernmost of the two outcrops is explored by two trenches located approximately 50 feet apart and across the vein, and by a 50 foot crosscut adit known as the Panama adit located between and parallel to the trenches (Fig. 3). The trenches and adit reveal a mineralized zone along the Quartzite fault. In the Panama adit and trenches the mineralized zone averaged 20 feet in thickness. Talus obscures the outcrops but float and small scattered outcrops of silicified vein material indicate the mineralized zone to have a length of at least 100 feet, and to extend not much south of the southernmost trench. Three samples cut across the zone in the adit (Fig. 3) assayed as follows:

	Length	Zn	Pb
Sample No. 1 -	6 ft.	7.11	11.4
" " 2 -	6 ft.	2.42	5.2
" " 3 -	7½ ft.	2.09	3.8

On the east side the vein is separated by approximately 5 feet of barren gouge from the quartzite footwall. The hanging wall of the vein is brecciated volcanic rock (Fig. 3).

The vein as exposed in the trenches and adit is considerably oxidized and consists of iron oxides, oxidation products of lead and zinc, veinlets and small masses of drusy quartz, small amounts of relict unoxidized galena, and calcite. In contrast to the Maralinga area contact silicate type minerals are less abundant.

The Athletic Mining Company drilled 4 holes to test the mineralized area at depth. Two holes, a vertical and an inclined hole, were drilled at each of two locations; one at

the southernmost area and the other at the north end of the Havalina area (Fig. 3). Both inclined holes, which were angled toward the Quartzite fault, intersected quartzite at the bottom. Cross sections through these holes (Fig. 3) indicate that they probably encountered the fault, but mineralization was not encountered in that zone, as might have been expected from its apparent association with that structure at the surface. However, mineralization was encountered in a contact type skilpate zone in all the holes. The relationship of the outcropping mineralization apparently localized by the Quartzite fault, and that encountered by drill holes is not clear.

Surface and near surface underground workings indicate the mineralized zone to be steeply inclined from 65°- 75° to the west, parallel to and closely associated with the fault. The diamond drill holes indicate the mineralized actinolite zone dips from 5° to 40° west, averaging about 35°.

The geology of the occurrence is uncertain. The drill core was not kept and so was not available for study by the examining team. Further drilling as outlined in the proposed exploration program will be necessary before the proposed shaft sinking can be intelligently planned.

PROPOSED PROGRAM

The program proposed will consist of two stages: the first stage will include approximately 2500 feet of diamond drilling, the second stage will include 150 feet of shaft sinking, drifting on two levels, and raising. The

outlines of this work are shown on Figures 3 and 4 and it is discussed in detail in the engineering report.

ORE RESERVES

Exploration of the proposed project area is too limited to make definite estimation of ore reserves. The two diamond drill locations drilled by the Athletic Mining Company indicate the presence of a mineralized contact type silicate zone at depth. The two drill sites are 400 feet apart. The presence of a significant body of ore in this zone, and the continuity of this zone can be established only by the drilling recommended in stage 1. At the surface the aggregate length of exposed mineralized zone, including both north and south outcrops, is 160 feet with an average width of 15 to 20 feet. It is inferred this zone in aggregate could yield 250 tons of lead-zinc ore per foot of depth.

GEOLOGIC CONCLUSIONS

The surface indications in the area it is proposed to explore are favorable. Two locations along the Quartzite fault in a length of 300 feet show mineralization of good width and ore grade. Drilling at two locations showed the presence of a mineralized zone at depth. In the opinion of the examining team the proposed program is warranted to further test the extent, nature, and grade of this mineralized zone. It is thought there is a reasonable chance of making a significant discovery of lead-zinc ore. It is recommended the program be approved.

Docket

FILE COPY
SURNAME:

Moulds

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

FEB 18 1952

Mr. J. H. East, Jr.
Executive Officer, Region IV
DMEA Field Team
224 New Customhouse Building
Denver 2, Colorado

Re: Docket No. DMEA-2366, Lead-Zinc
Athletic Mining Company
Fort Smith, Arkansas

Dear Mr. East:

We are transmitting, herewith, one set of the subject application which you referred to the Operating Committee under date of January 29, 1952.

This application is referred to your office for review and report. A copy of the Defense Minerals Exploration Administration review of application is enclosed for your information and consideration.

Sincerely yours,

(signed) FRANK E. JOHNSON

Chairman, Operating Committee
Defense Minerals Exploration
Administration

S.W.
2-18-52

Enclosure-1

DEMoulds/hmj
2-14-52
cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Region IV

APPROVED:

J. H. Hedges (Lb)
Member, Bureau of Mines

J. P. Thayer (Lb)
Member, Geological Survey

A. a 2-18-52 Docket

FILE COPY
SURNAME:

Moulds

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

FEB 18 1952

Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

Re: Docket No. DMEA-2366, Lead-Zinc
Athletic Mining Company

Dear Mr. Orr:

Your application for assistance in exploring the Panama, Norton, Curtis and Colon patented mining claims in the Aravaipa District, Graham County, Arizona, Docket No. DMEA-2366, has been reviewed by the Base Metals Division of the Defense Minerals Exploration Administration and has been referred to Mr. J. H. East, Jr., Executive Officer, Region IV DMEA Field Team, 224 New Customhouse Building, Denver 2, Colorado, for a field examination.

The Region Office will contact you at the earliest opportunity in regard to your project.

Sincerely yours,

D. E. Moulds

S.W. 2-18-52

D. E. Moulds, Acting Chief
Base Metals Division
Defense Minerals Exploration
Administration

DEMoulds/hmj
2-14-52
cc to: Adm. R. File
Docket File Copy
Mr. Bishop
Mr. McKnight
Mr. Moulds
Region IV

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

February 15, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: DMEA 2366, Application of Athletic Mining Company, Box 540, Fort Smith, Arkansas

Four copies of the above application for exploration estimated to cost $101,845, were sent to you on January 29, 1952.

We have just received one copy of this application which has been assigned docket number DMEA 2366. The application was not accompanied by a review from the Washington office.

We are holding the application in this office pending information on the review.

J. H. East, Jr.

Defense Minerals Administration
FEB 1 0 1952

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver 2, Colorado

February 15, 1952

Memorandum

To: C. O. Mittendorf, Acting Administrator, Defense Minerals Exploration Administration

From: Executive Officer, Field Team, Region IV

Subject: DMEA 2366, Application of Athletic Mining Company, Box 540, Fort Smith, Arkansas

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We are holding the application in this office pending information on the review.

J. H. East, Jr.

J. H. East, Jr.

JFS:ld

cc: Docket, chron.
Koschmann

EXPLORATION

Subject: DMEA-2366
Re: Exploration Loan
Panama, Norton, Curtis, & Colon Claims
February 5, 1952

Mr. Raymond F. Orr, President
Athletic Mining Company
P. O. Box 540
Fort Smith, Arkansas

My dear Mr. Orr:

This will acknowledge receipt of your application dated January 25, 1952 for a loan under the Defense Production Act of 1950.

Your application was assigned Docket Number DMEA-2366 and referred to the Base Metals Division.

Kindly refer to DMEA-2366 in any future correspondence relating to your application.

Sincerely yours,

ROBERT E. ADAMS

Robert E. Adams
Acting Administrative Officer

7862

DMEA-2366

UNITED STATES
DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION
WASHINGTON 25, D. C.

224 New Customhouse
Denver, Colorado

January 29, 1952

Memorandum

To: Secretary to the Operating Committee, D.M.E.A.

From: Executive Officer, Field Team, Region IV

Subject: Application, Athletic Mining Co., P. O. Box 540, Fort Smith, Arkansas

Enclosed are four copies of an application for exploration aid of the Athletic Mining Co., Fort Smith, Arkansas. The mine is in the Aravaipa District, Graham County, Arizona. The estimated cost of the project is $101,845.00.

J. H. East, Jr.

J. H. East, Jr.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 4 1952

Form MF-103
(April 1951)

U. S. DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS ADMINISTRATION

Budget Bureau No. 42-R1035.
Approval expires 6-30-51.

APPLICATION FOR AID FOR AN EXPLORATION PROJECT PURSUANT TO MINERAL ORDER 5, UNDER DEFENSE PRODUCTION ACT OF 1950

DO NOT FILL IN THIS BLOCK

Docket No. DMEA-2366

Date received 2-4-52

Participation

Athletic Mining Company
P. O. Box 319
Fort Smith, Arkansas

Name and address of applicant

Date January 25, 1952

FILL IN THIS BLOCK

Date of application January 25, 1952

Estimated cost $101,815.00

Mineral or metal Zinc and Lead

Percentage of Government participation 50%

Location of mine Aravaipa District,
Graham County, Arizona.

Date of filing MF-100 June 20, 1951

DMA Docket Number, if available E3-2090

INSTRUCTIONS

Read Mineral Order 5, Regulations Governing Government Aid in Defense Projects, before completing this application. Submit four signed copies of the application to Defense Minerals Administration, Department of the Interior, Washington 25, D. C., or to the nearest field executive officer thereof, with your name and address on each sheet of the application and all accompanying papers. If any question is inapplicable, or if you cannot answer it, so state on the form. Where the space provided for answer is insufficient, answer on a separate sheet, annex it to the application form, and refer to it in space for answer. If the application is approved, you will be presented with an exploration project contract on Form MF-200, for your signature.

DEPARTMENT OF THE INTERIOR
Defense Minerals Administration
RECEIVED
FEB 4 1952

See appended report.

THE APPLICANT

*1. Is applicant an individual, partnership, or corporation?
*2. If a partnership, state names and addresses of partners.
*3. If a corporation, state names and addresses of officers, directors, and five largest stockholders.
*4. Describe the mining and general business experience of (*a*) the applicant, and (*b*) the person or persons who will manage the project.
*5. Are you the owner or the lessee of the property?
6. If owner, state what claims, liens, or encumbrances, if any, are against the property.
7. If lessee, attach a copy of the lease and state if it is in good standing.

NOTE.—It will be necessary to procure and attach to the exploration project contract agreements of claimants, lienors, encumbrances and lessors subordinating their interests in the property to the interest of the Government under the contract.

8. Furnish current financial statement, showing assets and liabilities, and a profit and loss statement.
9. How much money is applicant prepared to invest in proposed project? Is it sufficient to pay your part of the cost of the project as detailed in question 23 of this application form, in accordance with the regulations on Government participation (Section 9 of Mineral Order 5)?

*If you have already answered these questions on MF-100, you are not required to answer the questions for this application.

16—64067-1

THE PROPERTY

10. (*a*) Give a description of the real property that will be in any way involved in the exploration project, including any existing mine or operating property.
    (*b*) Give the legal description of the exact parcel, plot, or area upon which the exploration is to be conducted.

    NOTE.—If both areas are the same, so state. The only obligation to repay the Government is from the net earnings from any commercial discovery made in the area specified in (*b*) above in which the exploration is to be conducted, and the expenditure of funds which may be charged as costs of the project must be limited to that area or to work necessary to perform the exploration in that area.

*11. State the present and former names of the property, if any.
*12. State, in detail, the location of the property with reference to towns, railroads, roads, shipping points, including distances and directions and kinds and conditions of roads.
*13. State source and quantity of water available for operations and its sufficiency at all seasons.
State amount of power to be used, rate per hour or other cost, and source.
*14. Describe any existing useable facilities, equipment, buildings, or structure now on the property that will be devoted to the exploration work.
15. State in detail how the ore could be shipped and how and where milled.
*16. History:
    (*a*) Give a statement, as complete as possible, of previous exploration, development, operation, and production of property, with reasons for any past suspensions of operations.
    (*b*) State briefly the known history and production of adjoining and neighboring properties.
    (*c*) Furnish any available (private) reports that may apply to this application, including results of mine examinations, recommended exploration and development, and metallurgical investigations.
*17. Production:
    (*a*) If mine is in production, furnish the following information:

	Tons per day	*Grade or analysis*	*Cost per ton*	*Net value per ton*
(1) Mining				
(2) Milling				
(3) Shipped or sold				

*18. Ore or mineral reserves: (If property is or has been operating.)
    (*a*) Describe the ore or mineral deposits briefly.
    (*b*) Submit available maps and assay data.
    (*c*) Give estimated tonnage and grade of each class of ore reserves.
19. State any conditions or circumstances regarding the property not sufficiently brought out by the foregoing questions.

THE EXPLORATION

20. For what mineral or minerals and for what types of deposits and ores will the exploration be conducted?
21. Describe briefly, but concisely, the proposed work and the estimated time required to complete it.

    NOTE.—The Government will not participate in a project that will require more than 2 years to complete.
22. Furnish statement of the geological basis of the project with particular emphasis on factors leading the operator to expect the finding of commercial ore bodies. This statement should be accompanied by supporting maps such as geological maps, maps of the proposed openings and assay maps, sample lists, and other pertinent data.

THE REQUIREMENTS AND COSTS

23. Tabulate in the form of an itemized statement with a sum for each item the estimated requirements and costs of the project so that the total will give the estimated cost of the project in which the Government will participate, as follows:
    (*a*) Labor, by numbers and classes (miners, muckers, millmen, etc.), with wages of each.
    (*b*) Supervisors, by numbers and positions, with salaries of each.
    (*c*) Cost of necessary repairs to existing facilities, structures, and buildings.
    (*d*) Cost of necessary installation or construction of additional facilities, structures, and buildings.
    (*e*) Cost of items of equipment, not now owned by the applicant which must be purchased for operations at a cost of $50 or more each.
    (*f*) Cost of rental for equipment which the operator proposes to rent.
    (*g*) Rental value of items of equipment which the operator now owns and which will be devoted to the work.
    (*h*) Cost of materials and supplies, including items of equipment costing less than $50 each.
    (*i*) Cost of power, water, utilities, and any other items not provided for above.
24. Furnish a time schedule of the project, stated in terms of months after project is approved, showing progress expected to be accomplished and the money expected to be spent.

CERTIFICATION

The undersigned company, and the official executing this certification on its behalf, hereby certify that the information contained in this form and accompanying papers is correct and complete to the best of their knowledge and belief.

Athletic Mining Company
(Name of company)

By Raymond T. Ou
(Signature of authorized official)

January 25, 1952
(Date)

President
(Title)

Title 18, U. S. Code (Crimes), Section 1001, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

*Same as footnote on page 1.

16—64067-1 U. S. GOVERNMENT PRINTING OFFICE

P. O. BOX 792
SAFFORD, ARIZONA

P. O. BOX 540
FORT SMITH, ARKANSAS

ATHLETIC MINING COMPANY

HARVIE L. HORTON, VICE PRES. AND MGR

SAFFORD, ARIZONA

P. O. Box 540
Fort Smith, Arkansas

INFORMATION DATA TO ACCOMPANY APPLICATION
FORM NO. MF-103 FOR EXPLORATION PROJECT
(IN ARAVAIPA DISTRICT, GRAHAM COUNTY, ARIZONA)
PURSUANT TO MINERAL ORDER 5,
UNDER DEFENSE PRODUCTION ACT OF 1950.

The Applicant

1. The applicant is the Athletic Mining Company, a corporation organized under the laws of the State of Arizona in the year 1943.

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2. Not applicable.

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3. See Form MF-100 filed by the applicant on June 20, 1951.

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4. (a) The applicant is a subsidiary of the Athletic Mining and Smelting Company which has been actively engaged in both the mining and smelting of zinc ores during the past forty years. The parent company during former years was a substantial producer of zinc and lead ores in the Tri-State District of Missouri, Kansas and Oklahoma, and presently operates a zinc smelter located in Fort Smith, Arkansas. The Athletic Mining Company was organized in 1943 to develop and operate a zinc-lead property situated at Aravaipa, Arizona, and has been in continuous production since that date.

(b) The personnel, under whose management and direction the project will be operated, is as follows:

Name	Title	Address
Raymond F. Orr	President	P.O. Box 540, Fort Smith, Arkansas
Harvie L. Horton	General Manager	P.O. Box 792, Safford, Arizona
Albert M. Bosworth	Engineer	P.O. Box 792, Safford, Arizona
Dan R. Stewart	Consulting Geologist	P.O. Box 870, Joplin, Missouri

The above staff has been actively engaged in various capacities in mining enterprises for periods ranging from five to thirty years.

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5. The applicant owns the mining claims to be explored in fee simple.

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6. There are no claims, liens or encumbrances against this property.

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7. Not applicable.

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8. See Form MF-100 filed by applicant on June 20, 1951.

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9. The applicant is prepared to pay 50% of the total cost of the project which is estimated to be $101,845.00.

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The Property

10. (a) The area selected for exploration lies on four patented mining claims, namely the Panama, Norton, Curtis, and Colon. These claims are situated in the southern part of Section 25 and in the northern part of Section 36, all lying in Township 5 South, Range 19 East, Graham County, Arizona. No existing mine or operating property is situated on these mining claims.

(b) The exploration project will be confined to the four claims as described in (a) above.

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11. The Panama, Norton, Curtis and Colon claims were patented as such in the 1920's by previous owners. No former names are known.

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12. The claims to be explored lie within one-quarter mile from the now abandoned post office of Aravaipa, Graham County, Arizona. This area lies approximately 60 miles west of Safford, Arizona, the county seat, and is served by an excellent, all weather road that connects with paved highway U. S. No. 70 at Cork, a siding on the Southern Pacific Railroad. The distance from the project area to the railroad siding at Cork is 45 miles. The nearest post office is Klondyke, Arizona, which is situated 8 miles south of Aravaipa on the main road to Cork.

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13. Unlimited water supply is available by hauling from the company's mill situated 8 miles south of the project area, at Klondyke. Such water hauls are the customary practice of the district.

It is estimated that the maximum electric power needed for the project will not exceed a total of 60 H.P. Electric power for operations in the district is supplied by portable Diesel electric sets. Ample equipment of this type is presently available in the area, and can be rented to the project, as needed, for $300.00 per month.

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14. There are no usable facilities, equipment, buildings or structures on the property to be explored. However, the company has available hoists, compressors, machine drills and pumps in the area that can be rented to the project.

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15. In the event mineralization of sufficient tonnage and grade can be delineated by the exploration work, it can be milled at the company's concentrating plant, located 8 miles south of the project area at Klondyke, Arizona. The concentrates are trucked to the railroad siding at Cork, Arizona, a distance of 37 miles from the mill. The zinc concentrates are shipped to Fort Smith, Arkansas, and the lead concentrates to El Paso, Texas.

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History

16. (a) The lead and zinc mineralization of the Aravaipa district has been known for more than 80 years, being first investigated and abandoned by prospectors in the 1870's, who were searching for silver and lead ores. The area was more or less dormant until 1926 when the Lewis Douglas interests started limited operations in the search for lead ores, but their activities ceased in 1927 due to the high zinc content of the mineralization.

No mining has been conducted in the project area, although showings of lead and zinc ores are present in the Havalina prospect tunnel and in two open trenches on the Panama claim. The Athletic Mining Company drilled three diamond drill holes in the area to be explored during the winter of 1948 and 1949, which showed encouraging results. Copies of these logs and their assays are appended to this report.

(b) The only consistent production from the district has been the operations of the Athletic Mining Company which entered the area on December 8, 1941, on a lease and option contract. The option agreement was subsequently exercised, and the company presently owns a total of 29 patented claims and controls 4 unpatented claims.

Mining operations were commenced in December, 1943, with shipments of crude lead ore from the Head Center mine. Since that date, mining has been carried on continuously with two additional mines being placed into operation, the Iron Cap and the Grand Central. In December, 1947, the company completed the erection of a modern concentrating plant having a daily capacity of 150 tons. The mill is situated at the village of Klondyke, which lies 10 miles south of the

area being mined. At present the concentrating plant is treating approximately 110 tons of crude ore per day, having an average grade of 12% combined metallic lead and zinc and from 0.25% to 0.50% metallic copper.

(c) The only reports concerning the property include a description of area by Ross*, who made a general study of the region in 1922, and a report on the Aravaipa claims made by Eldred D. Wilson for the Athletic Mining Company in 1942. In Wilson's report a brief description of the Panama prospects is given in which he mentions the mineralization along the Quartzite fault, in the Havalina tunnel and in some recent open cuts. A copy of his geological map covering the project area, and of the Havalina tunnel, accompanies this report.

In March, 1949, a reconnaissance geophysical survey (using magnetic methods) was made on portions of the property. The results were largely negative; however, anomalous conditions were encountered on the traverses that crossed the larger faults. The magnetic values as obtained during this investigation are also shown on the accompanying geological map.

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17. The project area has had no past nor present mine production.

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18. No measurable ore reserves are known at this time.

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19. The area outlined for investigation represents one of the most attractive areas for exploration in the Aravaipa District. Mining operations during the past few years by the Athletic Mining Company have demonstrated the value of the large disseminated ore bodies that are associated with the actinolite lenses in the limestone. This type of ore occurrence was ignored by past operators, but recent developments have shown these deposits to be very amenable to large open stope mining. The project area contains evidence of such lenses in the limestone, plus a strong showing of mineralization along the Quartzite fault.

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THE EXPLORATION

Ore Deposits

20. The mineralization of the area is predominately lead and zinc with small amounts of copper, and minor quantities of gold and silver. The ore deposits are of two general types: (1) the disseminated occurrences that are associated with actinolite lenses in the limestone, and (2) the veins and fissure fillings associated with the stronger faults of the area. Both of these types are present in the project area, and both will be explored.

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*C. P. Ross, Geology and Ore Deposits of the Aravaipa and Stanley Mining Districts, Graham County, Arizona: U. S. Geological Survey Bulletin 763 (1925).

Proposed Work

21. The exploration work, as planned, consists of both diamond drilling and exploratory shaft sinking and drifting. This work has been designed to simultaneously prospect (1) the mineralized vein paralleling the Quartzite fault, and (2) its intersection with an actinolite lens that is known from previous drilling to lie in the down-thrown limestone block parallel to, and adjacent with, the Quartzite fault.

Past experience has shown that diamond drilling is not too satisfactory for blocking ore reserves in the actinolite-limestone lenses due to the irregular nature of the mineralization. It is, therefore, proposed (1) to use diamond drilling to outline the limits of the actinolite-limestone lens, and (2) to commence the sinking of the exploratory shaft on the mineralized vein paralleling the Quartzite fault. The shaft will prospect the mineralized vein and penetrate the actinolite-limestone lens. Cross-cut drifts will be placed at 100-foot depth intervals in the shaft to investigate the mineralization encountered. The initial work will be performed on the Panama claim. Other actinolite lenses lying on the Curtis and Colon claims may be explored, if results on the Panama claim are disappointing. The proposed drill hole locations and shaft site are shown on the accompanying geological map.

The amount of drilling, shaft sinking and drifting will be dependent upon the results obtained, but will not exceed 4,000 feet for drilling, 300 feet for shaft sinking and 1,200 feet for drifting. It is estimated that the entire project can be completed in eighteen to twenty-one months.

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Geology

22. Geologically, the district represents a structurally uplifted area where the Paleozoic sediments are exposed as a large island surrounded by later Tertiary (?) volcanic rocks. A generalized geological section of the district is as follows:

GENERALIZED GEOLOGICAL SECTION

Age	Formation	Thickness
Quaternary	Gila Conclomerate.	?
Tertiary (?)	Rhyolite porphyry, intrusive (dikes & sills).	500 Ft. ±
"	Porphyry, yellow, coarse textured (flow).	50 Ft. ±
"	Rhyolite porphyry, purple to gray (flow).	100 Ft. ±
"	Diabase (flow).	50 Ft. ±
"	Felsite, fine grained, may be hornfels.	100 Ft. ±
"	Diatreme (volcanic breccia).	-

Carboniferous	Limestone, dense to medium grained, gray to black.	500 Ft. ±
Devonian (?)	Limestone, argillaceous, gray to light gray.	100 Ft. ±
Ordovician (?)	Shale, fissile, green to buff.	200 Ft. ±
Cambrian	Quartzite	400 Ft. ±
Pre-Cambrian	Schistose rocks, undifferentiated.	?

Within the project area the accompanying geological map shows two exposed limestone inliers, one covering the central portion of the Panama claim, and the other lying in the southeastern portion of the Colon claim and extending on to the Curtis and Panama claims. One of the larger faults of the district (the Quartzite fault) strikes in a general north-south direction across the Panama and Norton claims.

The known mineralization is shown in "red" on the accompanying maps and sections, and appears to be confined to the actinolite lenses in the limestone, and to fissures and veins paralleling the Quartzite fault. The outstanding exposure of the vein mineralization is in the two open cut trenches on the Panama claim. Here, two cut samples from a now caved prospect tunnel showed 14.1% lead and 11.3% zinc, and 8.9% lead and 8.3% zinc, over a 12-foot width. The proposed shaft is to be placed at this point.

The actinolite-limestone mineralization is exposed in the Havalina tunnel, and in outcrop areas shown in "green" on the Panama, Colon and Curtis claims. This type of mineralization was also penetrated in diamond drill holes Panama Nos. 1, 2, 3 and 4; and in drill holes Mine Camp Nos. 1 and 2. On the Panama claim, the disseminated type of mineralization appears to be particularly well developed as is indicated by the Panama drill holes. The shape and size of these lenses is unknown; however, the one cut by drill holes Panama Nos. 3 and 4 appears to be well mineralized. The proposed exploratory work will be concentrated in this area.

The significance of the two diatreme stocks shown on the Panama claim is not known. They may present some relationship to ore deposition which will be investigated by the two drill hole locations placed on the east side of the stock lying west from the Havalina tunnel.

Maps, Sections, and Drill Hole Logs

Appended to this report are the following maps, sections and drill hole logs:

1. Index Map of Region (scale: ¼ inch = 1 mile).
2. Geological Map of Project Area (scale: 1 inch = 100 ft.)
3. Geological Map of Havalina Tunnel (scale: 1 inch = 20 ft.).
4. Section of Drill Holes, Panama Nos. 1,2,3 &4, and Mine Camp Nos. 1 & 2, (scale: 1 inch = 50 ft.).
5. Drill Hole Logs and Assays for Panama Nos. 1,2,3 & 4, and Mine Camp Nos. 1 & 2.

23. Estimated Cost of Project

(a)	Diamond Drilling (by contract, including water hauling, mobilization and demobilization): 16 holes, 250 feet each. 4,000 feet @ $7.50.		$ 30,000.00
(b)	Shaft Sinking (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 300 feet @ $55.00 per foot.		16,500.00
(c)	Drifting (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 1,200 feet @ $24.00 per foot.		28,800.00
(d)	Equipment (to be rented, maximum 15 months):		
	Hoist & Motor @ $150.00 per month	$ 2,250.00	
	Compressor & Motor @ 200.00 " "	3,000.00	
	Underground Drills, 3 @ 30.00 " " (ea.)	1,350.00	
	Equipment (to be rented, maximum 8 months): Diesel electric set, complete with 3" Triplex pump and electric motor, @ $300.00 per month	2,400.00	
	Total Equipment		9,000.00
(e)	Exploration Sinking Derrick:		2,450.00
(f)	Road and Ground Preparation:		3,000.00
(g)	Engineering and Geology:		
	Part Time Engineer: 20 mos. @ $150.00 per mo.	$3,000.00	
	Part Time Helper: 20 mos. @ $100.00 per mo.	2,000.00	
	Engineering Supplies and Maps	500.00	
	Consulting Geologist: (Periodic Supervision)	1,500.00	
	Total Engineering		7,000.00
(h)	Sampling and Assays:		1,000.00
(i)	General Overhead and Accounting: Part Time Employees, 20 mos. @ $150.00 per month		4,095.00
	Total Cost of Project		$ 101,845.00

Time Schedule

24. It is estimated that the entire project can be completed in from 18 to 21 months. At the outset of the exploration program, approximately 3 months will be devoted to preliminary diamond drilling. This will be followed by ground preparation, road building, derrick erection, and equipment placing for the test shaft. Shaft sinking and drifting, plus additional diamond drilling for guidance, will then be started and will continue as conditions warrant.

A tentative time schedule is as follows:

Preliminary Diamond Drilling	3 to 4 months
Ground Preparation	2 2 "
Shaft Sinking	7 to 8 "
Drifting	6 to 7 "
Total Time	18 21 months

The monies to be spent will average approximately $5,000 per month over the life of the project, with the total monthly cost probably being $4,000 during the first 6 months, and from $5,000 to $6,000 per month thereafter.

DIAMOND DRILL LOGS

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 1 DATE: Winter-Spring, 1948-1949

DIRECTION: N65E

INCLINATION: -55°

From	To	Formation	Feet
0	22'	Overburden - sand, gravel, boulders.	22
22'	27'	Coarsely crystalline gray limestone.	5
27'	36'	Gray limestone and actinolite.	9
36'	50'	Crystalline gray limestone with stretches of actinolite.	14
50'	52'	Dark brown gouge or mud.	2
52'	59'	Gray limestone mostly replaced by actinolite.	7
59'	66'	Mostly actinolite and tremolite. Scattered weak shines of ZnS, PbS. (62' end of Bx core)	7
66'	72'4"	Mostly tremolite with occasional patches of actinolite and shines and small buttons of PbS.	6-1/3
72'4"	77'6"	Alternate sections of tremolite and limestone. Weak shines of ZnS, PbS. 4" good ZnS at 73'6".	5-1/6
77'6"	79'6"	Crystalline gray limestone.	2
79'6"	89'6"	Mostly tremolite with patches of rose quartz. Occasional weak shines of ZnS, PbS.	10
89'6"	94'	Dense gray limestone.	4-1/2
94'	100'	Dense gray limestone, and tremolite. Shines ZnS, PbS.	6
100'	101'	Mostly tremolite. Good ZnS.	1
101'	103'	Mostly tremolite. Weak shines ZnS, PbS.	2
103'	132'	Limestone with occasional calcite crystals and dark streaks and patches.	29
132'	134'	Limestone breccia, possibly fault zone.	2
134'	134'6"	Dense gray limestone with dark dendritic patterns in fractures.	1/2
134'6"	149'	Andesite (?)	14-1/2
149'	152'	Shale or cemented gouge.	3
152'	155'	Quartzite, light gray.	3

Bottom of Hole at 155 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 1

Sampled		Pb	PbO	Zn	ZnO	Core Recovery
50'	52'	0.40		0.78		2'
52'	54'	0.30		8.52	0.39	32"
54'	56'	0.25		9.80	0.39	
56'	58'	0.15		5.19	0.39	
58'	60'	0.20		6.17	0.44	4' 9"
60'	62'	0.20		14.40	0.29	
62'	64'	0.25		13.73	0.39	19"
64'	66'	0.25		7.15	0.29	22"
66'	72'4"	0.45		7.35		7'
72'4"	77'6"	0.40		5.88		6' 6"
77'6"	79'6"	0.20		0.39		30"
79'6"	83'	0.25		0.49	0.29	3' 8"
83'	85'	0.30		1.86	0.39	2'
85'	87'	0.25		3.72	0.29	1' 9"
87'	89'6"	0.20		4.60	0.43	1' 9"
89'6"	94'	0.40		0.49	0.39	33"
94'	96'	0.45		2.25	0.39	3' 6"
96'	98'	0.40		4.99	0.43	
98'	100'	0.50		0.53	0.39	3'
100'	101'	4.30		5.88	0.34	1'
101'	103'	0.70		5.88	0.34	24"

Note: (average)

52'	77'6"	0.32		8.06		

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 2 DATE: Winter-Spring, 1948-1949

DIRECTION: ——

INCLINATION: Vertical

From	To	Formation	Feet
0	10'	Overburden.	10
10'	41'8"	Dense gray limestone.	31-2/3
41'8"	48'	Dense pink limestone. Somewhat altered with streaks of actinolite and gouge.	6-1/3
48'	71	Limestone, actinolite and tremolite. Some sections with fair ZnS, shines PbS.	23
71'	85'	Crystalline gray limestone.	14
85'	148'	Gray limestone mostly replaced by actinolite, tremolite and dense gray chert. Occasional spots, streaks and shines of ZnS. Few shines of PbS.	63
148'	153'	Dense Gray limestone.	5
153'	156'	Dense pink limestone. Some breccia and alteration.	3
156'	158'	Dense gray limestone and gray chert.	2
158'	163'	Dense gray and pink limestone. Considerable brecciation and alteration.	5
163'	164'	Gouge - possible fault zone.	1
164'	175'	Dark gray and brown shaly limestone. Soft and streaked with stringers of calcite.	11
175'	194'	Gray limestone with dark streaks at angle of about 45° with core.	19
194'	198'	Altered greenish gray limestone.	4
198'	208'	Andesite (?).	10
208'	221'	Quartzite.	13

Bottom of Hole at 221 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
46'	50'	0.98		0.20		2'
50'	52'	0.58		0.25		1' 10"
52'	55'	0.98		0.15		2' 1"
55'	57'	0.78		0.20		2'
57'	59'	0.98		0.15		1' 10"
59'	61'	3.72		0.15		1' 2"
61'	63'	1.27		0.20		1' 8"
63'	65'	5.29		0.15		1' 11"
65'	71'	7.84		0.15		10"
86'	88'	1.37		0.20		2'
88'	90'	1.37		0.20		2'
90'	91'	5.88		0.20		1'
						(AX core to 90')
91'	96'	3.92		0.15		1'
96'	98'	8.72		0.20		1' 11"
98'	100'	0.78		0.20		1' 7"
100'	102'	0.53		0.15		1' 3"
102'	105'	0.68		0.20		1' 9"
105'	109'	1.27		0.15		1' 4"
109'	111'	1.66		0.20		1' 9"
111'	113'	0.88		0.20		1' 8"
113'	115'	0.98		0.10		1' 5"
115'	117'	0.53		0.15		2'
117'	119'	0.98		0.15		2'
119'	121'	0.98		0.20		1' 7"
121'	123'	0.98		0.15		1' 6"
123'	125'	0.58		0.30		23"
125'	127'	0.58		0.20		20"
127'	129'	0.49		0.20		22"
129'	131'	0.88		0.30		19"
131'	133'	0.44		1.50	0.70	21"
133'	135'	0.78		0.30		22"
135'	137'	0.49		0.30		12"
137'	139'	0.49		0.30		19"
139'	141'	0.49		0.30		21"
141'	143'	0.58		0.15		17"
143'	145'	0.78		0.30		17"
145'	147'	0.68		0.30		14"
147'	148'	0.58		0.20		10"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 3 DATE: Winter-Spring, 1948-1949.

DIRECTION: N65E

INCLINATION: -45°

From	To	Formation	Feet
0	41'	Dense gray limestone. Many solution channels and vugs, some mud filled.	41
41'	43'	Dense gray lime with pink streaks and many calcite crystals.	2
43'	50'	Crystalline gray lime.	7
50'	53'	Gouge or red mud and actinolite.	3
53'	54'	Crystalline gray lime.	1
54'	56'	Black actinolite and red brown mud.	2
56'	67'	Dense gray lime with patches of calcite and some vugs.	11
67'	82'	Mostly actinolite. Streaks and buttons of ZnS, PbS. Some silicification.	15
82'	87'	Dense gray lime with occasional pink bands.	5
87'	90'	Crystalline gray lime with fair PbS and some actinolite. (Mineral may go past 90' as only 8" core recovery from 90' to 98'.)	3
90'	110'	Dense gray lime, badly broken with occasional patches of chert (?).	20
110'	111'	Soft, altered pink lime.	1
111'	128'	Mostly cherty lime, badly broken, little core recovery.	17
128'	142'	Broken quartzite.	14

Bottom of Hole at 142 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 3

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
67'	69'	0.88		0.20		24"
69'	72'	0.58		0.30		36" (BX core to 72')
72'	74'	0.68		0.30		19"
74'	76'	2.74	0.58	0.15		19"
76'	78'	0.68		0.20		17"
78'	80'	0.49		0.20		18"
80'	82'	0.58		0.30		17"
82'	87'	0.58		0.30		60"
87'	90'	0.88		7.50	5.40	35"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 4 DATE: Winter-Spring, 1948-1949.

DIRECTION: ----

INCLINATION: Vertical

From	To	Formation	Feet
0	24'	Overburden - sand, gravel, boulders.	24
24'	31'	Dense, dark gray lime with thin seams of calcite at sharp angle to hole. Mud seam or gouge at 31'.	7
31'	39'	Coarsely crystalline gray lime.	8
39'	45'	Cavity filled with surface boulders and gravel.	6
45'	46'	Gouge or red mud seam.	1
46'	50'	Dense gray lime. Few spots black actinolite.	4
50'	55'	Black actinolite, tremolite with shines and streaks of PbS, ZnS.	5
55'	57'	Mostly tan tremolite and chert, shines ZnS, PbS.	2
57'	58'	Mostly black actinolite, some spots tremolite.	1
58'	62'	Mostly tan tremolite, considerable chert, shines ZnS, PbS.	4
62'	73'	Dense gray lime and light gray chert.	11
73'	75'	Lime, chert and calcite with red stains. Some PbS, ZnS.	2
75'	78'6"	Dense gray lime with spots actinolite, tremolite, ZnS, PbS.	3-1/2
78'6"	83'	Coarsely crystalline gray lime, with occasional streaks and patches of pink lime.	4-1/2
83'	86'	Mostly tan green and black tremolite and actinolite, badly broken.	3
86'	89'	Mostly tan green tremolite with occasional patches dense gray lime.	3
89'	105'	Alternate stretches of black tremolite, tan green actinolite, dense gray lime. Shines of PbS, ZnS. 1" button high grade PbS at 102'.	16
105'	149'	Dense gray lime.	44

Bottom of Hole at 149 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 4

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
50'	55'	1.80	0.80	0.80		22"
55'	57'	1.60	0.80	0.35		24"
57'	59'	0.80		0.15		22"
59'	61'	0.90		0.20		24"
61'	63'	0.80		0.30		23"
63'	73'	0.70		0.20		40"
73'	75'	8.60	3.60	9.10	6.10	23"
75'	77'	5.60	1.50	3.50	1.00	18"
77'	78'6"	6.60	1.50	5.20	1.10	18"
78'6"	83'	0.90		0.20		49"
83'	85'	1.40	0.90	0.20		18"
85'	87'	0.80		0.25		
87'	89'	1.10	0.90	0.35		
89'	91'	1.30	0.90	0.40		
91'	93'	1.30	0.90	0.30		
93'	95'	0.60		0.25		21"
95'	97'	0.70		0.30		24"
97'	99'	0.80		0.20		20"
99'	101'	0.70		0.20		18"
101'	103'	5.80		0.70		20"
103'	105'	7.10	2.00	0.90		19"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Mine Camp No. 1 DATE: Winter-Spring, 1948-1949.

DIRECTION: East

INCLINATION: -45°

From	To	Formation	Feet
0	11'	Overburden.	11
11'	30'	Dense gray lime.	19
30'	41'6"	Dense gray lime with many solution cracks and some chert.	11-1/2
41'6"	43'	Coarsely crystalline lime and calcite, good PbS, many vugs. (Note: Not sure of footage as from 41' to 51' only 5' of core.)	1-1/2
43'	51'	Coarsely crystalline lime and calcite, many vugs. Some actinolite.	8
51'	52'	Dense gray lime and black actinolite, many vugs.	1
52'	55'	Mostly black actinolite.	3
55'	57'	Oxidized pale green actinolite.	2
57'	59'	Black actinolite and crystalline lime.	2
59'	61'	Coarsely crystalline lime with pink and black streaks.	2
61'	83'	Fine grained gray lime.	22
83'	105'	Crystalline gray lime with pink streaks.	22

Bottom of Hole at 105 feet.

ASSAYS FOR MINE CAMP NO. 1

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
41'6"	44'					18"
44'	51'					30"
51'	53'					24"
53'	55'	7.80	2.10	1.00		24"
55'	57'	2.50	2.10	0.60		24"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Mine Camp No. 2 DATE: Winter-Spring, 1948-1949.

DIRECTION: East

INCLINATION: -63°

From	To	Formation	Feet
0	17'	Pink chert and lime breccia. Fairly coarsely crystalline.	17
17'	30'	Crystalline gray lime with occasional patches of chert, calcite. Some pink staining.	13
30'	30'4"	Purple shale.	1/3
30'4"	38'	Pink chert and fine gr. lime breccia.	7-2/3
38'	40'	Coarse grained pink lime.	2
40'	42'	Chert and crystalline lime breccia. Some pink staining.	2
42'	87'	Coarsely crystalline gray lime.	45
87'	95'	Fine grained gray lime.	8
95'	96'	Lime breccia with pink matrix. Some lime in elongated slivers. (Diatreme?)	1
96'	107'	Dense gray lime.	11
107'	108'	Crystalline gray lime with some calcite. Solution cracks filled with actinolite.	1
108'	112'	Mostly gray green actinolite with occasional black patches. Shines of ZnS, PbS.	4
112'	125'	Mostly gray green actinolite. Occasional patches of calcite. Shines of ZnS, PbS.	13
125'	128'	Fine grained gray lime.	3
128'	137'	Coarsely crystalline gray lime.	9
137'	142'	Crystalline gray lime, actinolite and calcite. Some PbS, ZnS.	5
142'	147'	Crystalline gray lime alternately pink and gray. Some brecciation.	5
147'	164'	Fine grained gray lime, with many seams of calcite and chert.	17
164'	172'	Mostly green gray actinolite with stretches of recrystalline gray and pink lime. Some PbS, ZnS.	8
172'	182'	Mostly green gray actinolite. Some PbS, ZnS.	10
182'	194'	Mostly green gray actinolite with some fibrous actinolite banding. Fair ZnS, PbS.	12
194'	236'	Fine grained gray lime with occasional calcite and chert bands.	42

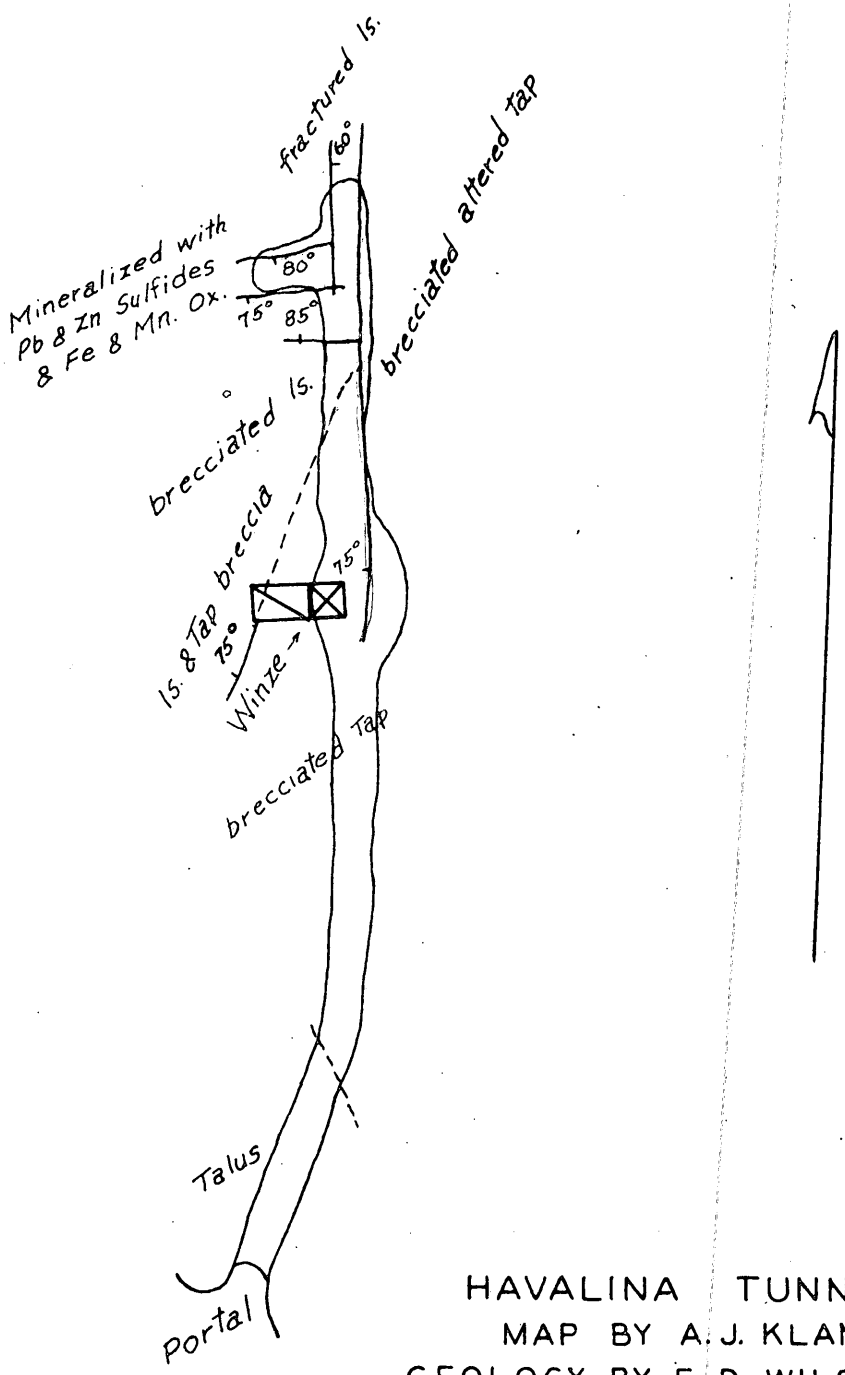
Bottom of Hole at 236 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR MINE CAMP NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
108'	110'	4.40	0.90	1.30	0.40	24"
110'	112'	0.50		0.40		24"
112'	114'	2.10	0.80	0.30		24"
114'	116'	0.60		0.20		24"
116'	118'	0.60		0.30		24"
118'	120'	0.60		0.20		21"
120'	122'	0.80		0.20		22"
122'	124'	0.80		0.20		19"
124'	125'	0.70		0.20		11"
137'	139'	0.90		0.30		22"
139'	142'	3.70		1.60	0.30	25"
164'	166'	1.50	0.70	0.30		22"
166'	168'	1.50	0.70	0.40		22"
168'	170'	0.60		0.20		24"
170'	172'	0.80		0.30		24"
172'	174'	0.80		0.20		24"
174'	176'	0.70		0.20		24"
176'	178'	0.70		0.20		24"
178'	180'	0.70		0.20		24"
180'	182'	0.60		0.20		24"
182'	184'					24"
184'	186'					24"
186'	188'					24"
188'	190'					22"
190'	192'					24"
192'	194'					24"



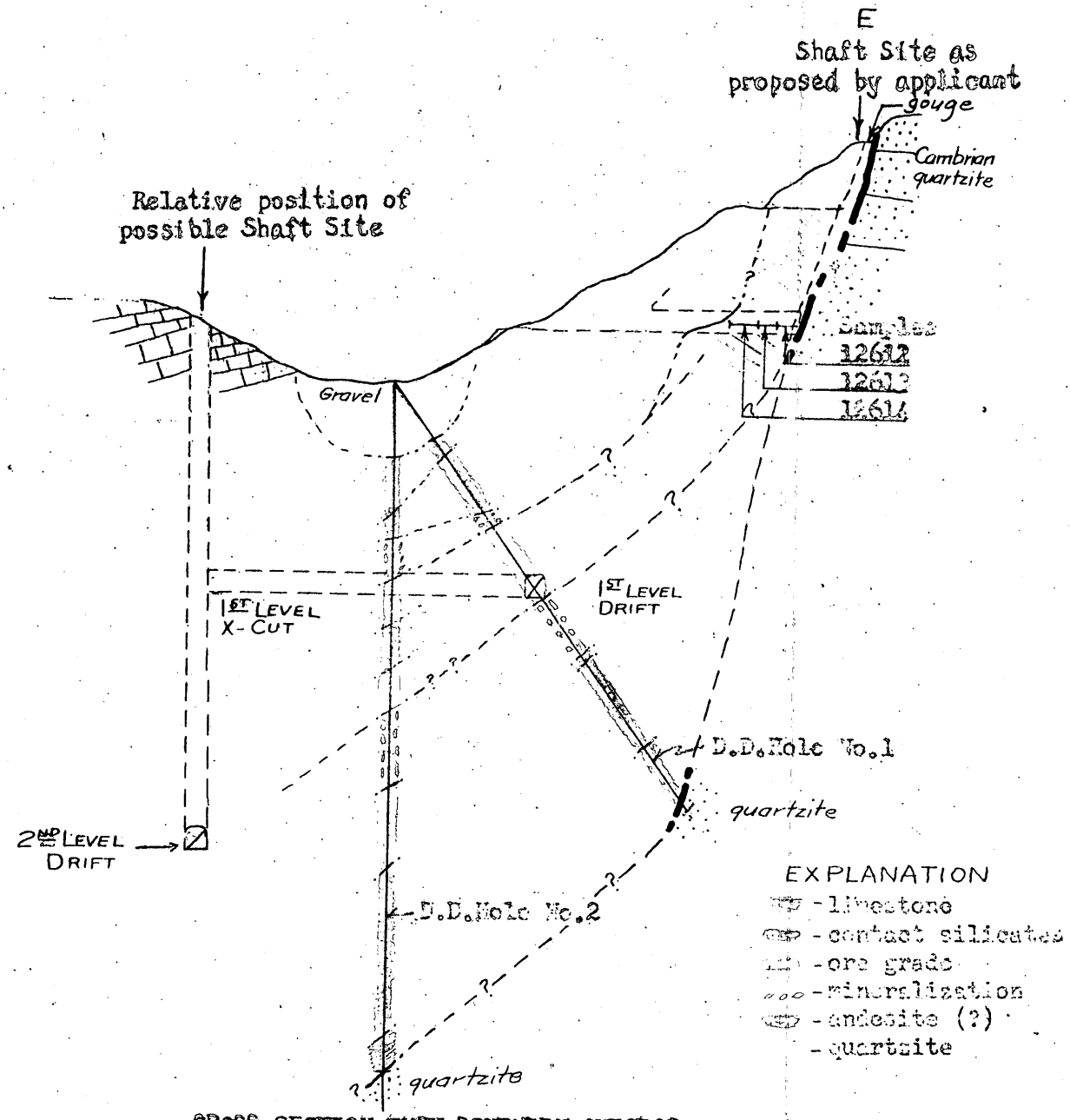
HAVALINA TUNNEL
MAP BY A. J. KLANT
GEOLOGY BY E. D. WILSON

SCALE: 1" = 20'

D. R. STEWART

JAN. 1952

JOPLIN, MO.



CROSS SECTION THRU SOUTHERN OUTCROP
SHOWING TENTATIVE PROPOSAL FOR STAGE 2.

FIG.4 DIEM-0066; SCALE 1"= 50'

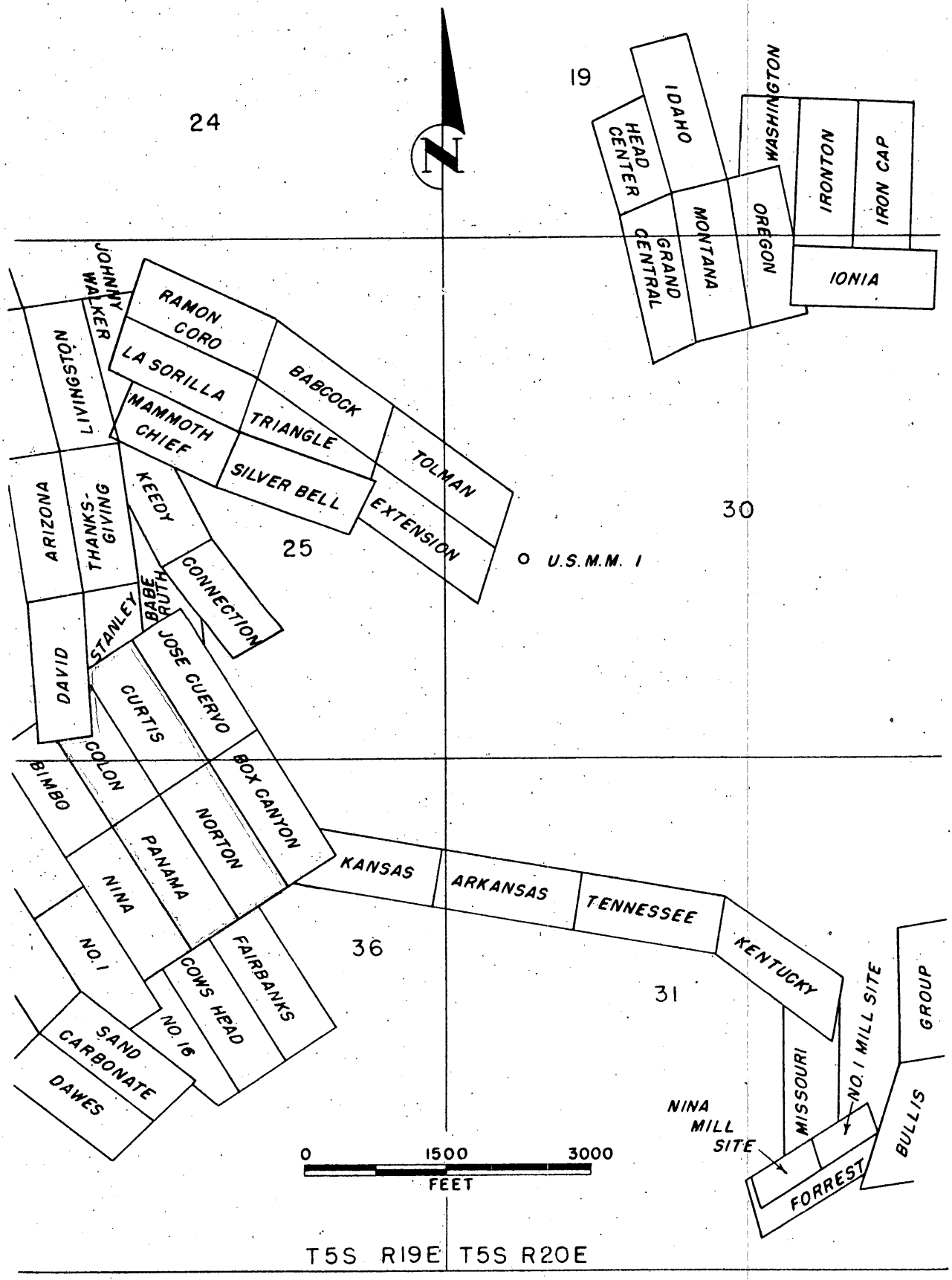


FIG. 2 - ATHLETIC MINING CO. CLAIMS, ARAVAIPA PROJ. 1517, GRAHAM CO., ARIZONA

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 1

Sampled		Pb	PbO	Zn	ZnO	Core Recovery
50'	52'	0.40		0.78		2'
52'	54'	0.30		8.52	0.39	32"
54'	56'	0.25		9.80	0.39	
56'	58'	0.15		5.19	0.39	
58'	60'	0.20		6.17	0.44	4' 9"
60'	62'	0.20		14.40	0.29	
62'	64'	0.25		13.73	0.39	19"
64'	66'	0.25		7.15	0.29	22"
66'	72'4"	0.45		7.35		7'
72'4"	77'6"	0.40		5.88		6' 6"
77'6"	79'6"	0.20		0.39		30"
79'6"	83'	0.25		0.49	0.29	3' 8"
83'	85'	0.30		1.86	0.39	2'
85'	87'	0.25		3.72	0.29	1' 9"
87'	89'6"	0.20		4.60	0.43	1' 9"
89'6"	94'	0.40		0.49	0.39	33"
94'	96'	0.45		2.25	0.39	
96'	98'	0.40		4.99	0.43	3' 6"
98'	100'	0.50		0.53	0.39	3'
100'	101'	4.30		5.88	0.34	1'
101'	103'	0.70		5.88	0.34	24"

Note: (average)

52'	77'6"	0.32		8.06		

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 2 DATE: Winter-Spring, 1948-1949

DIRECTION: -----

INCLINATION: Vertical

From	To	Formation	Feet
0	10'	Overburden.	10
10'	41'8"	Dense gray limestone.	31-2/3
41'8"	48'	Dense pink limestone. Somewhat altered with streaks of actinolite and gouge.	6-1/3
48'	71'	Limestone, actinolite and tremolite. Some sections with fair ZnS, shines PbS.	23
71'	85'	Crystalline gray limestone.	14
85'	148'	Gray limestone mostly replaced by actinolite, tremolite and dense gray chert. Occasional spots, streaks and shines of ZnS. Few shines of PbS.	63
148'	153'	Dense gray limestone.	5
153'	156'	Dense pink limestone. Some breccia and alteration.	3
156'	158'	Dense gray limestone and gray chert.	2
158'	163'	Dense gray and pink limestone. Considerable brecciation and alteration.	5
163'	164'	Gouge - possible fault zone.	1
164'	175'	Dark gray and brown shaly limestone. Soft and streaked with stringers of calcite.	11
175'	194'	Gray limestone with dark streaks at angle of about 45° with core.	19
194'	198'	Altered greenish gray limestone.	4
198'	208'	Andesite (?)	10
208'	221'	Quartzite	13

Bottom of Hole at 221 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 2

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
46'	50'	0.98		0.20		2'
50'	52'	0.58		0.25		1' 10"
52'	55'	0.98		0.15		2' 1"
55'	57'	0.78		0.20		2'
57'	59'	0.98		0.15		1' 10"
59'	61'	3.72		0.15		1' 2"
61'	63'	1.27		0.20		1' 8"
63'	65'	5.29		0.15		1' 11"
65'	71'	7.84		0.15		10"
86'	88'	1.37		0.20		2'
88'	90'	1.37		0.20		2'
90'	91'	5.88		0.20		1'
						(AX core to 90')
91'	96'	3.92		0.15		1'
96'	98'	8.72		0.20		1' 11"
98'	100'	0.78		0.20		1' 7"
100'	102'	0.53		0.15		1' 3"
102'	105'	0.68		0.20		1' 9"
105'	109'	1.27		0.15		1' 4"
109'	111'	1.66		0.20		1' 9"
111'	113'	0.88		0.20		1' 8"
113'	115'	0.98		0.10		1' 5"
115'	117'	0.53		0.15		2'
117'	119'	0.98		0.15		2'
119'	121'	0.98		0.20		1' 7"
121'	123'	0.98		0.15		1' 6"
123'	125'	0.58		0.30		23"
125'	127'	0.58		0.20		20"
127'	129'	0.49		0.20		22"
129'	131'	0.88		0.30		19"
131'	133'	0.44		1.50	0.70	21"
133'	135'	0.78		0.30		22"
135'	137'	0.49		0.30		12"
137'	139'	0.49		0.30		19"
139'	141'	0.49		0.30		21"
141'	143'	0.58		0.15		17"
143'	145'	0.78		0.30		17"
145'	147'	0.68		0.30		14"
147'	148'	0.58		0.20		10"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 3 DATE: Winter-Spring, 1948-1949

DIRECTION: N65E

INCLINATION: -45°

From	To	Formation	Feet
0	41'	Dense gray limestone. Many solution channels and vugs, some mud filled.	41
41'	43'	Dense gray lime with pink streaks and many calcite crystals.	2
43'	50'	Crystalline gray lime.	7
50'	53'	Gouge or red mud and actinolite.	3
53'	54'	Crystalline gray lime.	1
54'	56'	Black actinolite and red brown mud.	2
56'	67'	Dense gray lime with patches of calcite and some vugs.	11
67'	82'	Mostly actinolite. Streaks and buttons of ZnS, PbS. Some silicification.	15
82'	87'	Dense gray lime with occasional pink bands.	5
87'	90'	Crystalline gray lime with fair PbS and some actinolite. (Mineral may go past 90' as only 8" core recovery from 90' to 98'.)	3
90'	110'	Dense gray lime, badly broken with occasional patches of chert (?).	20
110'	111'	Soft, altered pink lime.	1
111'	128'	Mostly cherty lime, badly broken, little core recovery.	17
128'	142'	Broken quartzite.	14

Bottom of Hole at 142 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 3

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
67'	69'	0.88		0.20		24"
69'	72'	0.58		0.30		36"
						(BX core to 72')
72'	74'	0.68		0.30		19"
74'	76'	2.74	0.58	0.15		19"
76'	78'	0.68		0.20		17"
78'	80'	0.49		0.20		18"
80'	82'	0.58		0.30		17"
82'	87'	0.58		0.30		60"
87'	90'	0.88		7.50	5.40	35"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 4 DATE: Winter-Spring, 1948-1949

DIRECTION: -----

INCLINATION: Vertical

From	To	Formation	Feet
0	24'	Overburden - sand, gravel, boulders.	24
24'	31'	Dense, dark gray lime with thin seams of calcite at sharp angle to hole. Mud seam or gouge at 31'.	7
31'	39'	Coarsely crystalline gray lime.	8
39'	45'	Cavity filled with surface boulders and gravel.	6
45'	46'	Gouge or red mud seam.	1
46'	50'	Dense gray lime. Few spots black actinolite.	4
50'	55'	Black actinolite, tremolite with shines and streaks of PbS, ZnS.	5
55'	57'	Mostly tan tremolite and chert, shines ZnS, PbS.	2
57'	58'	Mostly black actinolite, some spots tremolite.	1
58'	62'	Mostly tan tremolite, considerable chert, shines ZnS, PbS.	4
62'	73'	Dense gray lime and light gray chert.	11
73'	75'	Lime, chert and calcite with red stains. Some PbS, ZnS.	2
75'	78'6"	Dense gray lime with spots actinolite, tremolite, ZnS, PbS.	3-1/2
78'6"	83'	Coarsely crystalline gray lime, with occasional streaks and patches of pink lime.	4-1/2
83'	86'	Mostly tan green and black tremolite and actinolite, badly broken.	3
86'	89'	Mostly tan green tremolite with occasional patches dense gray lime.	3
89'	105'	Alternate stretches of black tremolite, tan green actinolite, dense gray lime. Shines of PbS, ZnS. 1" button high grade PbS at 102'.	16
105'	149'	Dense gray lime.	44

Bottom of Hole at 149 feet.

Assays on the following page.

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

ASSAYS FOR PANAMA NO. 4

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
50'	55'	1.80	0.80	0.80		22"
55'	57'	1.60	0.80	0.35		24"
57'	59'	0.80		0.15		22"
59'	61'	0.90		0.20		24"
61'	63'	0.80		0.30		23"
63'	73'	0.70		0.20		40"
73'	75'	8.60	3.60	9.10	6.10	23"
75'	77'	5.60	1.50	3.50	1.00	18"
77'	78'6"	6.60	1.50	5.20	1.10	18"
78'6"	83'	0.90		0.20		49"
83'	85'	1.40	0.90	0.20		18"
85'	87'	0.80		0.25		
87'	89'	1.10	0.90	0.35		
89'	91'	1.30	0.90	0.40		
91'	93'	1.30	0.90	0.30		
93'	95'	0.60		0.25		21"
95'	97'	0.70		0.30		24"
97'	99'	0.80		0.20		20"
99'	101'	0.70		0.20		18"
101'	103'	5.80		0.70		20"
103'	105'	7.10	2.00	0.90		19"

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Mine Camp No. 1 DATE: Winter-Spring, 1948-1949

DIRECTION: East

INCLINATION: -45°

From	To	Formation	Feet
0	11'	Overburden.	11
11'	30'	Dense gray lime.	19
30'	41'6"	Dense gray lime with many solution cracks and some chert.	11-1/2
41'6"	43'	Coarsely crystalline lime and calcite, good PbS, many vugs. (Note: Not sure of footage as from 41' to 51' only 5' of core.)	1-1/2
43'	51'	Coarsely crystalline lime and calcite, many vugs. Some actinolite.	8
51'	52'	Dense gray lime and black actinolite, many vugs.	1
52'	55'	Mostly black actinolite.	3
55'	57'	Oxidized pale green actinolite.	2
57'	59'	Black actinolite and crystalline lime.	2
59'	61'	Coarsely crystalline lime with pink and black streaks.	2
61'	83'	Fine grained gray lime.	22
83'	105'	Crystalline gray lime with pink streaks.	22

Bottom of Hole at 105 feet.

ASSAYS FOR MINE CAMP NO. 1

Sampled		Zn	ZnO	Pb	PbO	Core Recovery
41'6"	44'					18"
44'	51'					30"
51'	53'					24"
53'	55'	7.80	2.10	1.00		24"
55'	57'	2.50	2.10	0.60		24"

MONDAY

MAY						1952
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

23

JUNE 1952

JULY						1952
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APPOINTMENTS

8 A. M. .....

9 A. M. .....

10 A. M. .....

11 A. M. .....

12 Noon .....

1 P. M. .....

2 P. M. .....

3 P. M. .....

4 P. M. .....

5 P. M. .....

6 P. M. .....

P. O. BOX 792
SAFFORD, ARIZONA

P. O. BOX 540
FORT SMITH, ARKANSAS

ATHLETIC MINING COMPANY

HARVIE L. HORTON, VICE PRES. AND MGR

SAFFORD, ARIZONA

P. O. Box 540
Fort Smith, Arkansas

INFORMATION DATA TO ACCOMPANY APPLICATION
FORM NO. MF-103 FOR EXPLORATION PROJECT
(IN ARAVAIPA DISTRICT, GRAHAM COUNTY, ARIZONA)
PURSUANT TO MINERAL ORDER 5,
UNDER DEFENSE PRODUCTION ACT OF 1950.

The Applicant

1. The applicant is the Athletic Mining Company, a corporation organized under the laws of the State of Arizona in the year 1943.

- - - - - - - - - - - - - - -

2. Not applicable.

- - - - - - - - - - - - - - -

3. See Form MF-100 filed by the applicant on June 20, 1951.

- - - - - - - - - - - - - - -

4. (a) The applicant is a subsidiary of the Athletic Mining and Smelting Company which has been actively engaged in both the mining and smelting of zinc ores during the past forty years. The parent company during former years was a substantial producer of zinc and lead ores in the Tri-State District of Missouri, Kansas and Oklahoma, and presently operates a zinc smelter located in Fort Smith, Arkansas. The Athletic Mining Company was organized in 1943 to develop and operate a zinc-lead property situated at Aravaipa, Arizona, and has been in continuous production since that date.

(b) The personnel, under whose management and direction the project will be operated, is as follows:

Name	Title	Address
Raymond F. Orr	President	P.O. Box 540, Fort Smith, Arkansas
Harvie L. Horton	General Manager	P.O. Box 792, Safford, Arizona
Albert M. Bosworth	Engineer	P.O. Box 792, Safford, Arizona
Dan R. Stewart	Consulting Geologist	P.O. Box 870, Joplin, Missouri

The above staff has been actively engaged in various capacities in mining enterprises for periods ranging from five to thirty years.

- - - - - - - - - - - - - - -

5. The applicant owns the mining claims to be explored in fee simple.

- - - - - - - - - - - - - - -

6. There are no claims, liens or encumbrances against this property.

- - - - - - - - - - - - - - -

7. Not applicable.

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8. See Form MF-100 filed by applicant on June 20, 1951.

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9. The applicant is prepared to pay 50% of the total cost of the project which is estimated to be $101,845.00.

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The Property

10. (a) The area selected for exploration lies on four patented mining claims, namely the Panama, Norton, Curtis, and Colon. These claims are situated in the southern part of Section 25 and in the northern part of Section 36, all lying in Township 5 South, Range 19 East, Graham County, Arizona. No existing mine or operating property is situated on these mining claims.

(b) The exploration project will be confined to the four claims as described in (a) above.

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11. The Panama, Norton, Curtis and Colon claims were patented as such in the 1920's by previous owners. No former names are known.

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12. The claims to be explored lie within one-quarter mile from the now abandoned post office of Aravaipa, Graham County, Arizona. This area lies approximately 60 miles west of Safford, Arizona, the county seat, and is served by an excellent, all weather road that connects with paved highway U. S. No. 70 at Cork, a siding on the Southern Pacific Railroad. The distance from the project area to the railroad siding at Cork is 45 miles. The nearest post office is Klondyke, Arizona, which is situated 8 miles south of Aravaipa on the main road to Cork.

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13. Unlimited water supply is available by hauling from the company's mill situated 8 miles south of the project area, at Klondyke. Such water hauls are the customary practice of the district.

It is estimated that the maximum electric power needed for the project will not exceed a total of 60 H.P. Electric power for operations in the district is supplied by portable Diesel electric sets. Ample equipment of this type is presently available in the area, and can be rented to the project, as needed, for $300.00 per month.

- - - - - - - - - - - - - -

14. There are no usable facilities, equipment, buildings or structures on the property to be explored. However, the company has available hoists, compressors, machine drills and pumps in the area that can be rented to the project.

- - - - - - - - - - - - - -

15. In the event mineralization of sufficient tonnage and grade can be delineated by the exploration work, it can be milled at the company's concentrating plant, located 8 miles south of the project area at Klondyke, Arizona. The concentrates are trucked to the railroad siding at Cork, Arizona, a distance of 37 miles from the mill. The zinc concentrates are shipped to Fort Smith, Arkansas, and the lead concentrates to El Paso, Texas.

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History

16. (a) The lead and zinc mineralization of the Aravaipa district has been known for more than 80 years, being first investigated and abandoned by prospectors in the 1870's, who were searching for silver and lead ores. The area was more or less dormant until 1926 when the Lewis Douglas interests started limited operations in the search for lead ores, but their activities ceased in 1927 due to the high zinc content of the mineralization.

No mining has been conducted in the project area, although showings of lead and zinc ores are present in the Havalina prospect tunnel and in two open trenches on the Panama claim. The Athletic Mining Company drilled three diamond drill holes in the area to be explored during the winter of 1948 and 1949, which showed encouraging results. Copies of these logs and their assays are appended to this report.

(b) The only consistent production from the district has been the operations of the Athletic Mining Company which entered the area on December 8, 1941, on a lease and option contract. The option agreement was subsequently exercised, and the company presently owns a total of 29 patented claims and controls 4 unpatented claims.

Mining operations were commenced in December, 1943, with shipments of crude lead ore from the Head Center mine. Since that date, mining has been carried on continuously with two additional mines being placed into operation, the Iron Cap and the Grand Central. In December, 1947, the company completed the erection of a modern concentrating plant having a daily capacity of 150 tons. The mill is situated at the village of Klondyke, which lies 10 miles south of the

area being mined. At present the concentrating plant is treating approximately 110 tons of crude ore per day, having an average grade of 12% combined metallic lead and zinc and from 0.25% to 0.50% metallic copper.

(c) The only reports concerning the property include a description of area by Ross*, who made a general study of the region in 1922, and a report on the Aravaipa claims made by Eldred D. Wilson for the Athletic Mining Company in 1942. In Wilson's report a brief description of the Panama prospects is given in which he mentions the mineralization along the Quartzite fault, in the Havalina tunnel and in some recent open cuts. A copy of his geological map covering the project area, and of the Havalina tunnel, accompanies this report.

In March, 1949, a reconnaissance geophysical survey (using magnetic methods) was made on portions of the property. The results were largely negative; however, anomalous conditions were encountered on the traverses that crossed the larger faults. The magnetic values as obtained during this investigation are also shown on the accompanying geological map.

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17. The project area has had no past nor present mine production.

- - - - - - - - - - - - - - -

18. No measurable ore reserves are known at this time.

- - - - - - - - - - - - - - -

19. The area outlined for investigation represents one of the most attractive areas for exploration in the Aravaipa District. Mining operations during the past few years by the Athletic Mining Company have demonstrated the value of the large disseminated ore bodies that are associated with the actinolite lenses in the limestone. This type of ore occurrence was ignored by past operators, but recent developments have shown these deposits to be very amenable to large open stope mining. The project area contains evidence of such lenses in the limestone, plus a strong showing of mineralization along the Quartzite fault.

- - - - - - - - - - - - - - -

THE EXPLORATION

Ore Deposits

20. The mineralization of the area is predominately lead and zinc with small amounts of copper, and minor quantities of gold and silver. The ore deposits are of two general types: (1) the disseminated occurrences that are associated with actinolite lenses in the limestone, and (2) the veins and fissure fillings associated with the stronger faults of the area. Both of these types are present in the project area, and both will be explored.

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*C. P. Ross, Geology and Ore Deposits of the Aravaipa and Stanley Mining Districts, Graham County, Arizona: U. S. Geological Survey Bulletin 763 (1925).

Proposed Work

21. The exploration work, as planned, consists of both diamond drilling and exploratory shaft sinking and drifting. This work has been designed to simultaneously prospect (1) the mineralized vein paralleling the Quartzite fault, and (2) its intersection with an actinolite lens that is known from previous drilling to lie in the downthrown limestone block parallel to, and adjacent with, the Quartzite fault.

Past experience has shown that diamond drilling is not too satisfactory for blocking ore reserves in the actinolite-limestone lenses due to the irregular nature of the mineralization. It is, therefore, proposed (1) to use diamond drilling to outline the limits of the actinolite-limestone lens, and (2) to commence the sinking of the exploratory shaft on the mineralized vein paralleling the Quartzite fault. The shaft will prospect the mineralized vein and penetrate the actinolite-limestone lens. Cross-cut drifts will be placed at 100-foot depth intervals in the shaft to investigate the mineralization encountered. The initial work will be performed on the Panama claim. Other actinolite lenses lying on the Curtis and Colon claims may be explored, if results on the Panama claim are disappointing. The proposed drill hole locations and shaft site are shown on the accompanying geological map.

The amount of drilling, shaft sinking and drifting will be dependent upon the results obtained, but will not exceed 4,000 feet for drilling, 300 feet for shaft sinking and 1,200 feet for drifting. It is estimated that the entire project can be completed in eighteen to twenty-one months.

- - - - - - - - - - - - - -

Geology

22. Geologically, the district represents a structurally uplifted area where the Paleozoic sediments are exposed as a large island surrounded by later Tertiary (?) volcanic rocks. A generalized geological section of the district is as follows:

GENERALIZED GEOLOGICAL SECTION

Age	Formation	Thickness
Quaternary	Gila Conclomerate.	?
Tertiary (?)	Rhyolite porphyry, intrusive (dikes & sills).	500 Ft. ±
"	Porphyry, yellow, coarse textured (flow).	50 Ft. ±
"	Rhyolite porphyry, purple to gray (flow).	100 Ft. ±
"	Diabase (flow).	50 Ft. ±
"	Felsite, fine grained, may be hornfels.	100 Ft. ±
"	Diatreme (volcanic breccia).	-

Carboniferous	Limestone, dense to medium grained, gray to black.	500 Ft. ±
Devonian (?)	Limestone, argillaceous, gray to light gray.	100 Ft. ±
Ordovician (?)	Shale, fissile, green to buff.	200 Ft. ±
Cambrian	Quartzite.	400 Ft. ±
Pre-Cambrian	Schistose rocks, undifferentiated.	?

Within the project area the accompanying geological map shows two exposed limestone inliers, one covering the central portion of the Panama claim, and the other lying in the southeastern portion of the Colon claim and extending on to the Curtis and Panama claims. One of the larger faults of the district (the Quartzite fault) strikes in a general north-south direction across the Panama and Norton claims.

The known mineralization is shown in "red" on the accompanying maps and sections, and appears to be confined to the actinolite lenses in the limestone, and to fissures and veins paralleling the Quartzite fault. The outstanding exposure of the vein mineralization is in the two open cut trenches on the Panama claim. Here, two cut samples from a now caved prospect tunnel showed 14.1% lead and 11.3% zinc, and 8.9% lead and 8.3% zinc, over a 12-foot width. The proposed shaft is to be placed at this point.

The actinolite-limestone mineralization is exposed in the Havalina tunnel, and in outcrop areas shown in "green" on the Panama, Colon and Curtis claims. This type of mineralization was also penetrated in diamond drill holes Panama Nos. 1, 2, 3 and 4; and in drill holes Mine Camp Nos. 1 and 2. On the Panama claim, the disseminated type of mineralization appears to be particularly well developed as is indicated by the Panama drill holes. The shape and size of these lenses is unknown; however, the one cut by drill holes Panama Nos. 3 and 4 appears to be well mineralized. The proposed exploratory work will be concentrated in this area.

The significance of the two diatreme stocks shown on the Panama claim is not known. They may present some relationship to ore deposition which will be investigated by the two drill hole locations placed on the east side of the stock lying west from the Havalina tunnel.

Maps, Sections, and Drill Hole Logs

Appended to this report are the following maps, sections and drill hole logs:

1. Index Map of Region (scale: $\frac{1}{4}$ inch = 1 mile).
2. Geological Map of Project Area (scale: 1 inch = 100 ft.)
3. Geological Map of Havalina Tunnel (scale: 1 inch = 20 ft.)
4. Section of Drill Holes, Panama Nos. 1,2,3 & 4, and Mine Camp Nos. 1 & 2, (scale: 1 inch = 50 ft.)
5. Drill Hole Logs and Assays for Panama Nos. 1,2,3 & 4, and Mine Camp Nos. 1 & 2.

23. Estimated Cost of Project

(a)	Diamond Drilling (by contract, including water hauling, mobilization and demobilization): 16 holes, 250 feet each. 4,000 feet @ $7.50.		$ 30,000.00
(b)	Shaft Sinking (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 300 feet @ $55.00 per foot.		16,500.00
(c)	Drifting (estimated total cost, including power, labor, supervision, steel, powder, track, water and timber): 1,200 feet @ $24.00 per foot.		28,800.00
(d)	Equipment (to be rented, maximum 15 months):		
	Hoist & Motor @ $150.00 per month	$ 2,250.00	
	Compressor & Motor @ 200.00 " "	3,000.00	
	Underground Drills, 3 @ 30.00 " " (ea.)	1,350.00	
	Equipment (to be rented, maximum 8 months): Diesel electric set, complete with 3" Triplex pump and electric motor, @ $300.00 per month	2,400.00	
	Total Equipment		9,000.00
(e)	Exploration Sinking Derrick:		2,450.00
(f)	Road and Ground Preparation:		3,000.00
(g)	Engineering and Geology:		
	Part Time Engineer: 20 mos. @ $150.00 per mo.	$3,000.00	
	Part Time Helper: 20 mos. @ $100.00 per mo.	2,000.00	
	Engineering Supplies and Maps	500.00	
	Consulting Geologist: (Periodic Supervision)	1,500.00	
	Total Engineering		7,000.00
(h)	Sampling and Assays:		1,000.00
(i)	General Overhead and Accounting: Part Time Employees, 20 mos. @ $150.00 per month		4,095.00
	Total Cost of Project		$ 101,845.00

Time Schedule

24. It is estimated that the entire project can be completed in from 18 to 21 months. At the outset of the exploration program, approximately 3 months will be devoted to preliminary diamond drilling. This will be followed by ground preparation, road building, derrick erection, and equipment placing for the test shaft. Shaft sinking and drifting, plus additional diamond drilling for guidance, will then be started and will continue as conditions warrant.

A tentative time schedule is as follows:

Preliminary Diamond Drilling	3 to 4 months
Ground Preparation	2 2 "
Shaft Sinking	7 to 8 "
Drifting	6 to 7 "
Total Time	18 21 months.

The monies to be spent will average approximately $5,000 per month over the life of the project, with the total monthly cost probably being $4,000 during the first 6 months, and from $5,000 to $6,000 per month thereafter.

DIAMOND DRILL LOGS

ATHLETIC MINING COMPANY
SAFFORD, ARIZONA

HOLE NO. Panama No. 1 DATE: Winter-Spring, 1948-1949

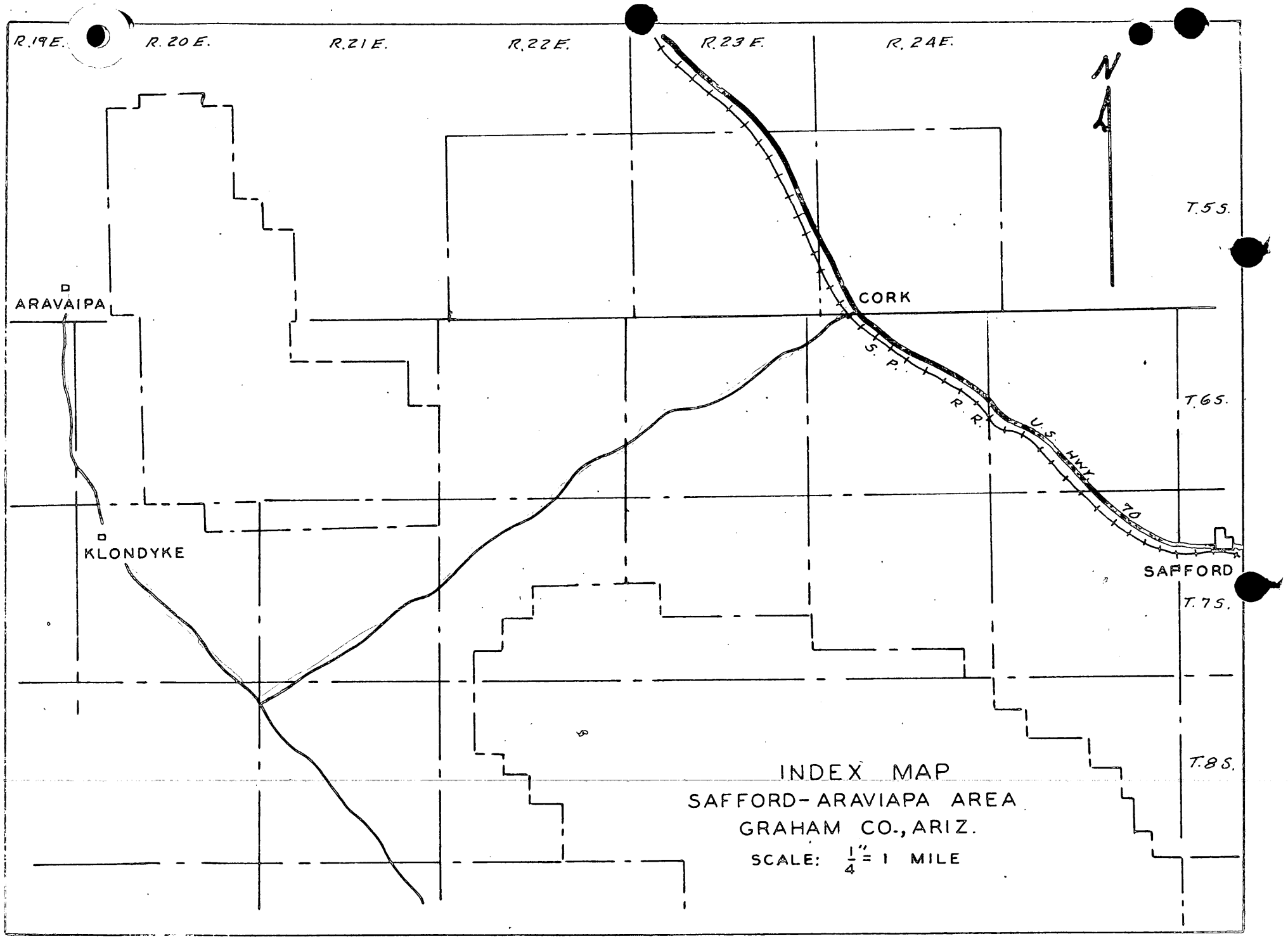
DIRECTION: N65E

INCLINATION: -55°

From	To	Formation	Feet
0	22'	Overburden - sand, gravel, boulders.	22
22'	27'	Coarsely crystalline gray limestone.	5
27'	36'	Gray limestone and actinolite	9
36'	50'	Crystalline gray limestone with stretches of actinolite.	14
50'	52'	Dark brown gouge or mud.	2
52'	59'	Gray limestone mostly replaced by actinolite.	7
59'	66'	Mostly actinolite and tremolite. Scattered weak shines of ZnS, PbS. (62' end of Bx core)	7
66'	72'4"	Mostly tremolite with occasional patches of actinolite and shines and small buttons of PbS.	6-1/3
72'4"	77'6"	Alternate sections of tremolite and limestone. Weak shines of ZnS, PbS. 4" good ZnS at 73'6".	5-1/6
77'6"	79'6"	Crystalline gray limestone.	2
79'6"	89'6"	Mostly tremolite with patches of rose quartz. Occasional weak shines of ZnS, PbS.	10
89'6"	94'	Dense gray limestone.	4-1/2
94'	100'	Dense gray limestone, and tremolite. Shines ZnS, PbS.	6
100'	101'	Mostly tremolite. Good ZnS.	1
101'	103'	Mostly tremolite. Weak shines ZnS, PbS.	2
103'	132'	Limestone with occasional calcite crystals and dark streaks and patches.	29
132'	134'	Limestone breccia, possibly fault zone.	2
134'	134'6"	Dense gray limestone with dark dendritic patterns in fractures.	1/2
134'6"	149'	Andesite (?)	14-1/2
149'	152'	Shale or cemented gouge.	3
152'	155'	Quartzite, light gray.	3

Bottom of Hole at 155 feet.

Assays on the following page.


R.19E.
R.20E.
R.21E.
R.22E.
R.23E.
R.24E.
N
T.5S.
T.6S.
T.7S.
T.8S.
ARAVAIPA
KLONDYKE
CORK
S. P. R. R.
U.S. HWY 70
SAFFORD
INDEX MAP
SAFFORD-ARAVIAPA AREA
GRAHAM CO., ARIZ.
SCALE: 1/4" = 1 MILE

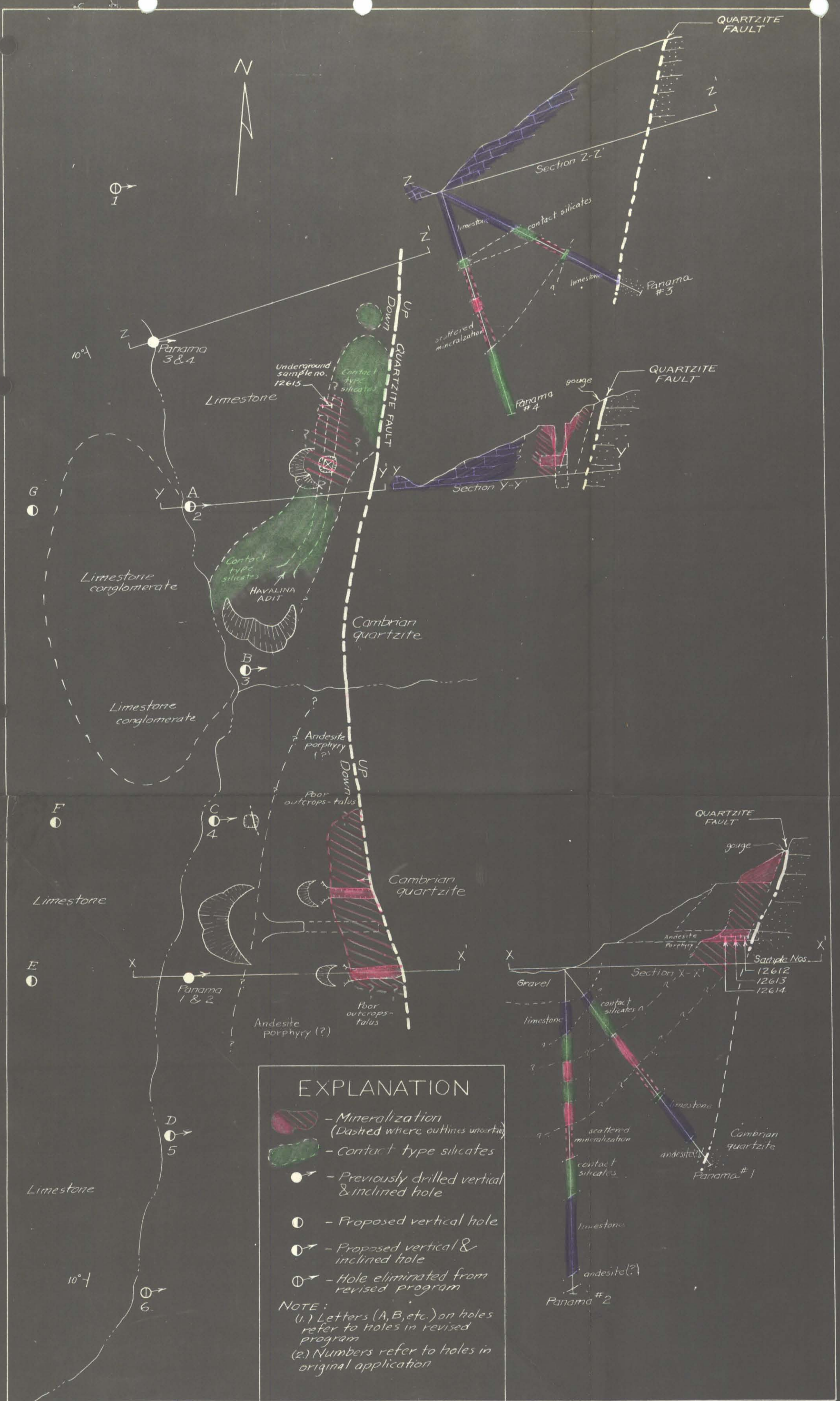
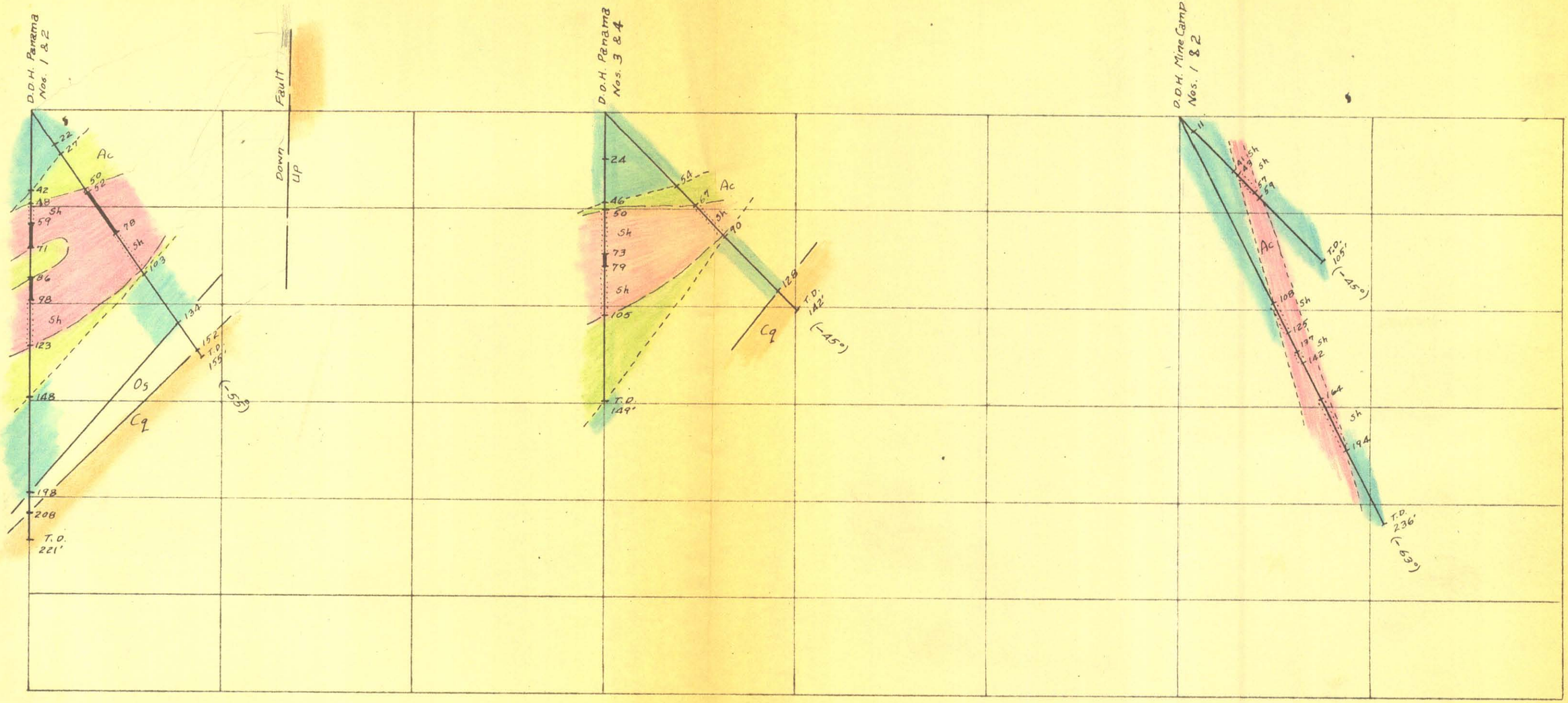


FIG. 3 SKETCH MAP AND SECTIONS SHOWING GEOLOGY AND STAGE 1 DRILLING

IMEA 2366



SECTION

DRILL HOLE CROSS SECTIONS

PROPERTY: ATHLETIC MINING CO.

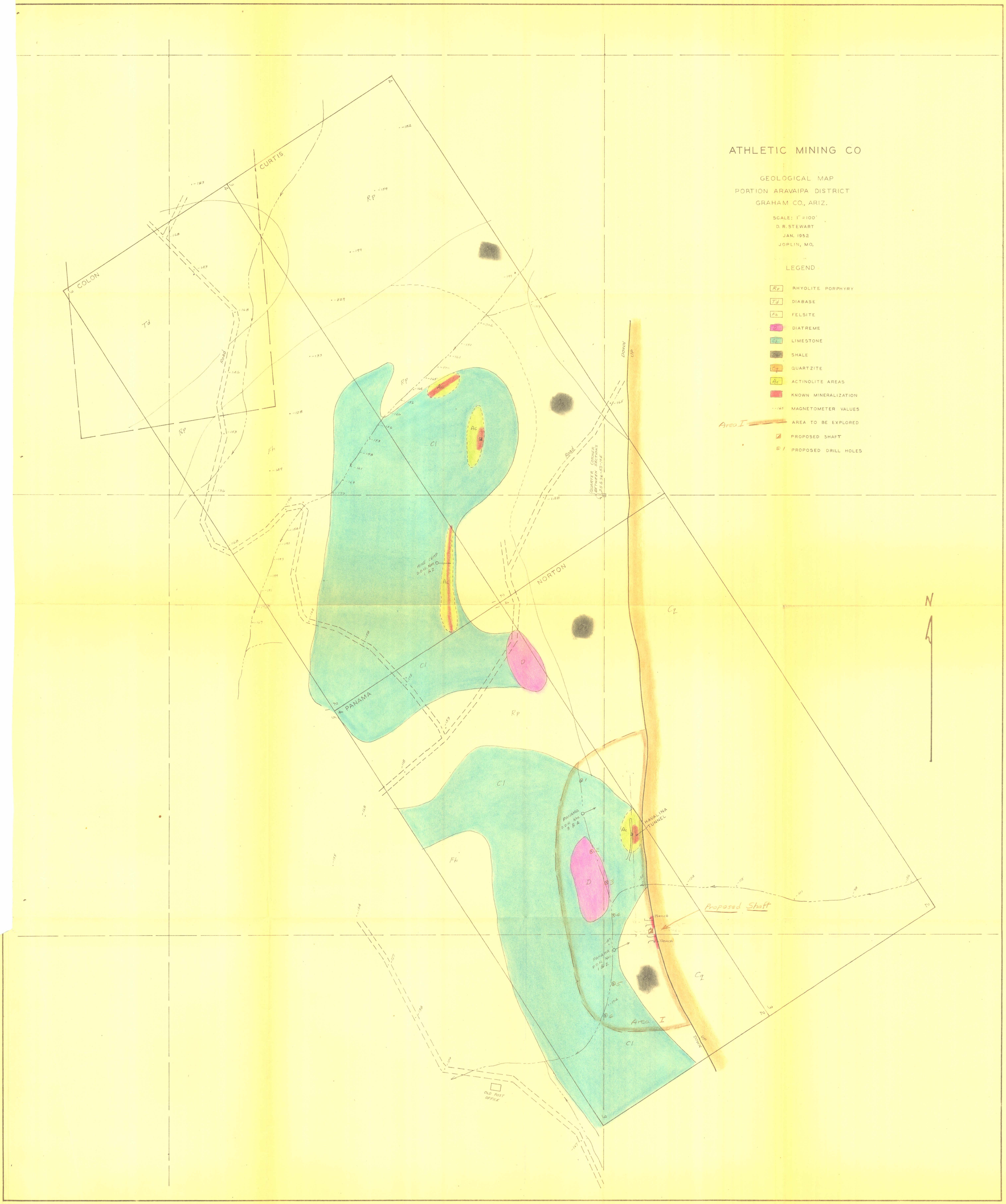
LOCATION: ARAVAIPA, ARIZ.

SCALE: 1" = 50'

DATE: JAN. 1952

D. R. STEWART

JOPLIN, MO.


ATHLETIC MINING CO
GEOLOGICAL MAP
PORTION ARAVAIPA DISTRICT
GRAHAM CO., ARIZ.
SCALE: 1" = 100'
D. R. STEWART
JAN. 1952
JOPLIN, MO.
LEGEND
Rp RHYOLITE PORPHYRY
Td DIABASE
Fh FELSITE
D DIATREME
Cl LIMESTONE
Sh SHALE
Cq QUARTZITE
Ac ACTINOLITE AREAS
KNOWN MINERALIZATION
-165 MAGNETOMETER VALUES
Area I AREA TO BE EXPLORED
PROPOSED SHAFT
PROPOSED DRILL HOLES
N
COLON
CURTIS
NORTON
PANAMA
Road
QUARTER CORNER BETWEEN SECTIONS 25 & 36 - 5S - 14E
MINE CAMP D.D.H. Nos. 1 & 2
PANAMA D.D.H. Nos. 3 & 4
PANAMA D.D.H. Nos. 1 & 2
HAVALINA TUNNEL
Trench
Proposed Shaft
OLD POST OFFICE
DOWN
UP

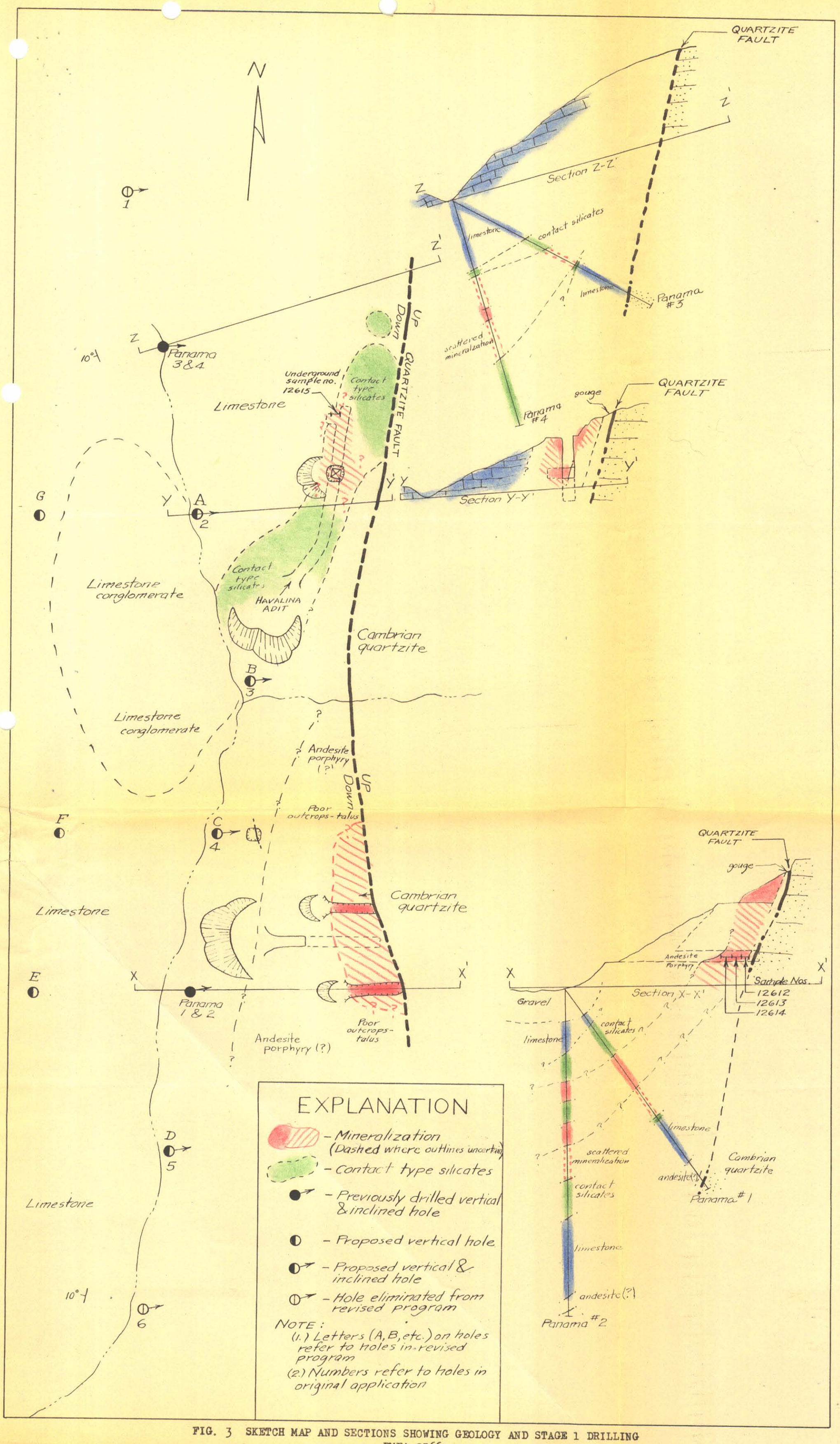
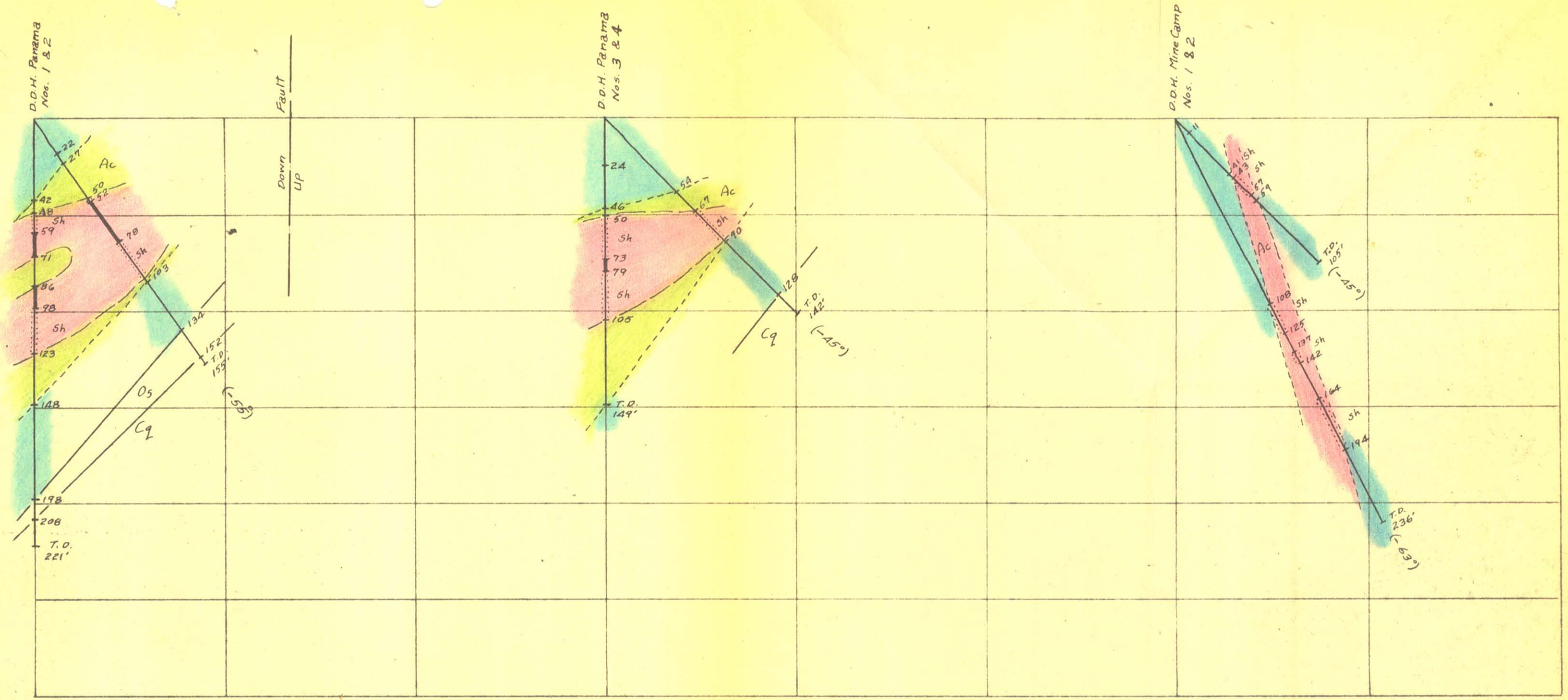


FIG. 3 SKETCH MAP AND SECTIONS SHOWING GEOLOGY AND STAGE 1 DRILLING
IMEA 2366



SECTION

DRILL HOLE CROSS SECTIONS

PROPERTY: ATHLETIC MINING CO.

LOCATION: ARAVAIPA, ARIZ.

SCALE: 1" = 50'

DATE: JAN. 1952

D. R. STEWART

JOPLIN, MO.