Division Copy

MF-200
(Revised June 1954)

Docket No. DMEA 4104

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Caleb V. Haynes, Jr. and Glen A. Boyd, Jr., a partnership, whose mailing address is Post Office Box 5, Golden, Colorado, and 41 Prospector's Park, Golden, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and 2 maps (Figure 2 and Figure 4)

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

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Jefferson, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of [6] two leases, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: Royalties as are set forth in the lease.

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien of Lessors

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before shall commence the work, and on or before December 1, 1956 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall have completed the work See Article 13.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this 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.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 20,430.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 15,307.00 : *Provided,* That until the Operator has rendered to the Government his final report, 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, such items under the [illegible] obligation [illegible] shall be agreed percentage of the estimated total allowable costs of the work.~~ See Article 13.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. See Article 13.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

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

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

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

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

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

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

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

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest 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 or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—
(a) In Article 3, all of the words following the reference to Article 10, except the words "shall have completed the work," are deleted. (b) Categories (2) through (7) of Article 6(a) are deleted except for sample analyses. (c) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.
(d) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon, is deleted.
(e) In Article 6(c), the reference to Article 9 is changed to Article 8.
(f) In Category (1) of Article 6(a), the phrase "the estimated cost of each unit of work" shall be construed to mean, for the purposes of this contract, "the average cost per foot of drilling, including transportation, drill site, and access trail preparation, for each individual drill hole."

Executed in sextuplicate the day and year first above written.

Indrity 7/16/56

THE UNITED STATES OF AMERICA

"Appd. Sol. Off."

By .....

Administrator, Defense Minerals Exploration Administration

Ellis

Chamberlin

Selfridge

.....

Caleb V. Haynes, Jr. (Partner)

(Operator)

By .....

Glen A. Boyd, Jr. (Partner)

.....

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—70617-1

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMEA-4104

ANNEX I

The land referred to in Article 2 of the Contract consists of the following:

The West one-half (½) of the Southwest one-quarter (¼) and the Southwest one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), and the Northeast one-quarter (¼) of the Southeast one-quarter (¼) of Section 4, Township Seven (7) South, Range 70 West of the Sixth P.M. (160 acres more or less), leased by the Operator from Carl L. Chester.

The East one-half (½) of the Southwest one-quarter (¼) and the Southeast one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), Township Seven (7) South, Range 70 West of the Sixth P.M. (120 acres more or less), leased by the Operator from Louis S. Malach, excluding, however, a tract conveyed by Louis S. Malach to Reinhardt and Ruth Henke by deed recorded in Book 527, page 105 of the records of Jefferson County, Colorado, a portion of which tract occupies approximately 1.6 acres of the aforesaid 120 acres of land, which portion is bounded by the North line beginning at the northeast corner of the NE¼ SW¼ sec. 3, thence west 107 feet, thence south 660 feet, thence east 107 feet to the quarter section line, thence north 660 feet to the point of beginning.

The location of the land is shown on the map entitled "Figure 2 - Property Map, Black Knight and Billikin Lodes, Caleb V. Haynes, Jr., and Glen A. Boyd, Jr., Jefferson County, Colo., DMEA 4104," attached hereto and made a part of this Contract.

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMRA 4104

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by diamond core drilling from the surface for the downward projection of the uranium ore bearing Black Knight and Billikin breccia zones.

Each hole shall be diamond core drilled the entire length. No payment shall be made for any uncompleted drill hole. The minimum collar size of core shall be NX, and no part of any hole shall be less than AX size without prior approval of the Government.

All core and cuttings shall be saved by such methods and at such drilling intervals, and shall be checked for radioactivity in such manner, as may be specified by the Government. The sections of the drill core and cuttings that indicate significant radioactivity shall be split into halves. One-half of each of the radioactive drill cores shall be analyzed chemically for uranium, and one-half of each of the radioactive cores and cuttings shall be furnished to the Government. The remaining half of the radioactive cuttings, and all the non-radioactive cores and cuttings, shall be properly bagged, labeled, and stored pending Government inspection and disposition.

All drill holes shall be logged geologically and probed for radioactivity and four copies of each log shall be furnished to the Government.

No drill hole shall be drilled closer than 100 feet to the outside boundary of the land, and no Stage II drill hole shall be drilled closer than 75 feet from any Stage I hole from where it intersects the breccia zones.

The project shall be supervised at all times by a qualified geologist or mining engineer, approved by the Government, who shall perform the required surveying, mapping, sampling, and hole logging, and shall prepare reports required pursuant to this Contract.

Stage I

Stage I shall consist of five (5) vertical core drill holes to intersect the Black Knight breccia zone approximately 150 feet down-dip below the surface and one inclined core drill hole to intersect the Billikin breccia zone about 150 feet down-dip below the

surface. The holes that shall be drilled are designated as B, C, D, E, F, and G and their locations are shown on the attached map entitled "Figure 4 - Map Showing Location of Recommended Drill Holes, Black Knight and Billikin Lodes, Caleb V. Haynes Jr., and Glen A. Boyd, Jr. Jefferson County, Colo., DMEA-4104."

The depths, directions, and inclinations that these holes shall be drilled are as follows:

Hole No.	Direction and Inclination	Depth Feet
B	Vertical	190
C	Vertical	220
D	Vertical	190
E	Vertical	170
F	Vertical	160
G	N. 70° W at -60° Inclination	350

Stage II

Stage II consists of drilling not more than eight holes aggregating not more than 1,600 feet to explore for the extension of favorable mineralization intersected in Stage I drill holes. The location, inclination and depth of each hole are subject to the prior written approval of the Government.

Estimated Cost of the Project

(in addition to maximum set forth in Article 6
an asterisk indicates maximum)

Stage I

Actual Costs

Category (1) Independent Contracts

1,260 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft. $7,641.60

Categories (2) through (6) None

Category (7) Miscellaneous

None except 20 Chemical sample analyses @ $5.00*/each sample	$ 100.00	$7,741.60

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,280 feet @ $1.03/ft.	$1,318.40	1,318.40
Estimated Total Cost of Stage I		$9,060.00

Stage II

Actual Costs

Category (1) Independent Contracts

1,600 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft.	$9,552.00	

Categories (2) through (6) None

Category (7) Miscellaneous

None except 30 Chemical sample analyses @ $5.00*/each sample	150.00	$9,702.00

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,600 feet @ $1.03/ft.	$1,648.00	$1,648.00
Estimated Total Cost of Stage II		$11,350.00

SUMMARY

Estimated Total Cost of Stage I	$ 9,060.00
Estimated Total Cost of Stage II	11,350.00
Estimated Total Cost of the Project	$20,410.00
Government participation @ 75% (rounded to)	$15,307.00

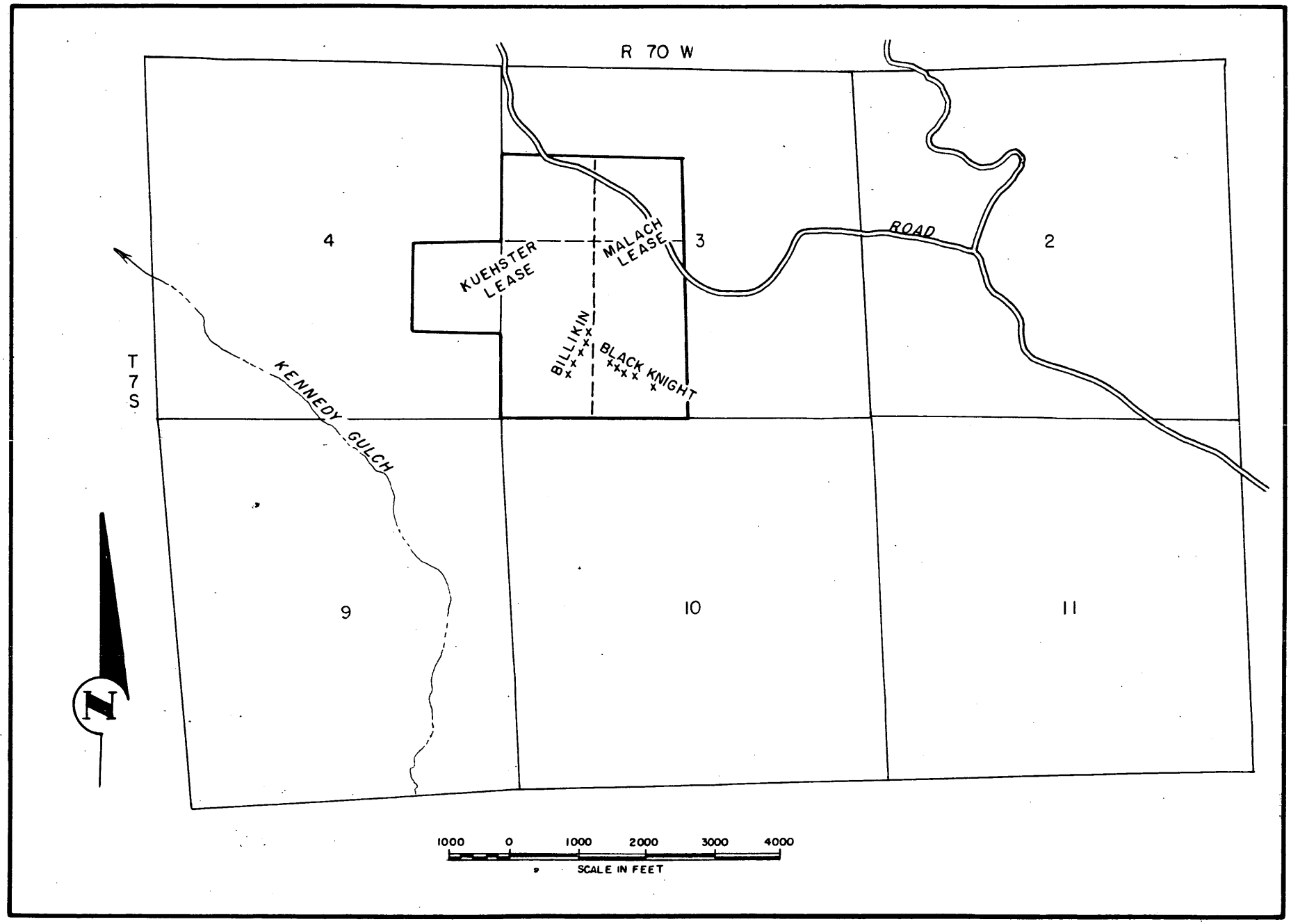

FIGURE 2 - PROPERTY MAP, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

Finance Office Copy

MF-200
(Revised June 1954)

Docket No. DMEA 1101

Commodity Uranium

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... day of ....., 195...., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Caleb V. Haynes, Jr. and Glen A. Boyd, Jr., a partnership, whose mailing address is Post Office Box 5, Golden, Colorado, and 41 Prospector's Park, Golden, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and 2 maps (Figure 2 and Figure 4)

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

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Jefferson, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of [6] two leases, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: Royalties as are set forth in the leases.

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: Consent to Lien of Lessors

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before shall commence the work, and on or before December 1, 1956 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall have completed the work See Article 13.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this 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.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 20,410.00 The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 15,307.00 : *Provided,* That until the Operator has rendered to the Government his final report, 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work.~~ See Article 13.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. See Article 13.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

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

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

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

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

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

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

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

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest 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 or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—
(a) In Article 3 all of the words following the reference to Article 10, except the words "shall have completed the work," are deleted. (b) Categories (2) through (7) of Article 6(a) are deleted except for sample analyses. (c) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.
(d) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon, is deleted.
(e) In Article 6(c), the reference to Article 9 is changed to Article 8.
(f) In Category (1) of Article 6(a), the phrase "the estimated cost of each unit of work" shall be construed to mean, for the purposes of this contract, "the average cost per foot of drilling, including transportation, drill site, and access trail preparation, for each individual drill hole."

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....
Administrator, Defense Minerals
Exploration Administration

.....
Caleb V. Haynes, Jr. (Operator) (Partner)

By .....
Glen A. Boyd, Jr. (Partner)

.....

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—70617-1

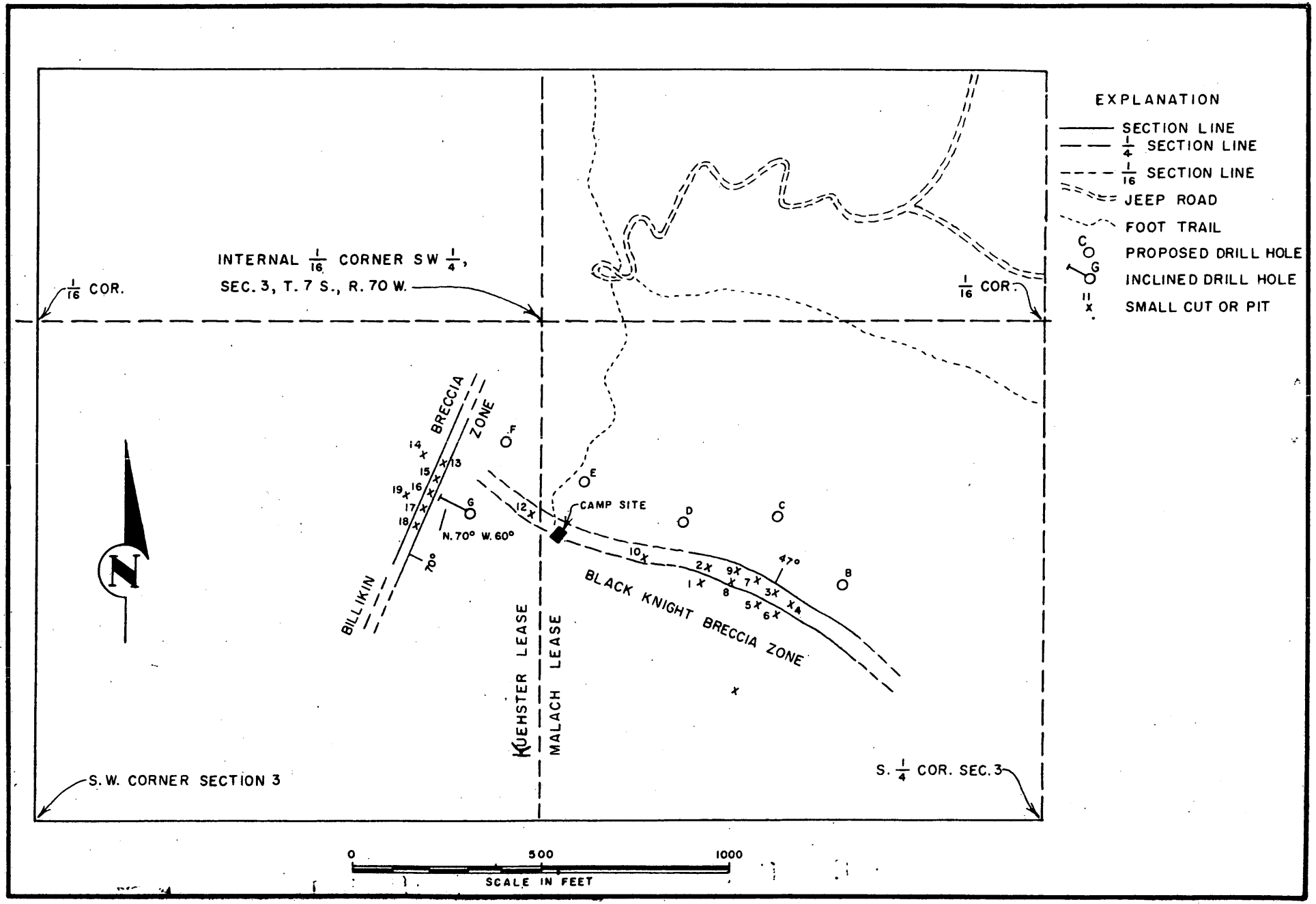

FIGURE 4 - MAP SHOWING LOCATION OF RECOMMENDED DRILL HOLES, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMEA-4104

ANNEX I

The land referred to in Article 2 of the Contract consists of the following:

The West one-half (½) of the Southwest one-quarter (¼) and the Southwest one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), and the Northeast one quarter (¼) of the Southeast one-quarter (¼) of Section 4, Township Seven (7) South, Range 70 West of the Sixth P.M. (160 acres more or less), leased by the Operator from Carl L. Eschster.

The East one-half (½) of the Southwest one-quarter (¼) and the Southeast one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), Township Seven (7) South, Range 70 West of the Sixth P.M. (120 acres more or less), leased by the Operator from Louis S. Malash, excluding, however, a tract conveyed by Louis S. Malash to Reinhardt and Ruth Hemke by deed recorded in Book 527, page 105 of the records of Jefferson County, Colorado, a portion of which tract occupies approximately 1.6 acres of the aforesaid 120 acres of land, which portion is bounded by the North line beginning at the northeast corner of the NE¼ SW¼ sec. 3, thence west 107 feet, thence south 660 feet, thence east 107 feet to the quarter section line, thence north 660 feet to the point of beginning.

The location of the land is shown on the map entitled "Figure 2 - Property Map, Black Knight and Billikin Leases, Caleb V. Haynes, Jr., and Glen A. Boyd, Jr., Jefferson County, Colo., DMEA 4104," attached hereto and made a part of this Contract.

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMRA-4104

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by diamond core drilling from the surface for the downward projection of the uranium ore bearing Black Knight and Billikin breccia zones.

Each hole shall be diamond core drilled the entire length. No payment shall be made for any uncompleted drill hole. The minimum collar size of core shall be BX, and no part of any hole shall be less than AX size without prior approval of the Government.

All core and cuttings shall be saved by such methods and at such drilling intervals, and shall be checked for radioactivity in such manner, as may be specified by the Government. The sections of the drill core and cuttings that indicate significant radioactivity shall be split into halves. One-half of each of the radioactive drill cores shall be analyzed chemically for uranium, and one-half of each of the radioactive cores and cuttings shall be furnished to the Government. The remaining half of the radioactive cuttings, and all the non-radioactive cores and cuttings, shall be properly boxed, labeled, and stored pending Government inspection and disposition.

All drill holes shall be logged geologically and probed for radioactivity and four copies of each log shall be furnished to the Government.

No drill hole shall be drilled closer than 100 feet to the outside boundary of the land, and no Stage II drill hole shall be drilled closer than 75 feet from any Stage I hole from where it intersects the breccia zones.

The project shall be supervised at all times by a qualified geologist or mining engineer, approved by the Government, who shall perform the required surveying, mapping, sampling, and hole logging, and shall prepare reports required pursuant to this Contract.

Stage I

Stage I shall consist of five (5) vertical core drill holes to intersect the Black Knight breccia zone approximately 150 feet down-dip below the surface and one inclined core drill hole to intersect the Billikin breccia zone about 150 feet down-dip below the

surface. The holes that shall be drilled are [illegible] F, and G and their locations are shown on the attached map entitled "Figure 4 - Map Showing Location of Recommended Drill Holes, Black Knight and Billikin Lodes, Caleb V. Haynes, Jr., and Glen A. Boyd, Jr., Jefferson County, Colo., DMEA-4104."

The depths, directions, and inclinations that these holes shall be drilled are as follows:

Hole No.	Direction and Inclination	Depth Feet
B	Vertical	190
C	Vertical	220
D	Vertical	190
E	Vertical	170
F	Vertical	160
G	N. 70° W at -60° Inclination	350

Stage II

Stage II consists of drilling not more than eight holes aggregating not more than 1,600 feet to explore for the extension of favorable mineralization intersected in Stage I drill holes. The location, inclination and depth of each hole are subject to the prior written approval of the Government.

Estimated Cost of the Project

(in addition to maximum set forth in Article 6
an asterisk indicates maximum)

Stage I

Actual Costs

Category (1) Independent Contracts

1,280 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft. $7,641.60

Categories (2) through (6) None

Category (7) Miscellaneous

None except 20 Chemical sample analyses @ $5.00*/each sample	$ 100.00	$7,741.60

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,280 feet @ $1.03/ft.	$1,318.40	1,318.40
Estimated Total Cost of Stage I		$9,060.00

Stage II

Actual Costs

Category (1) Independent Contracts

1,600 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft.	$9,552.00	

Categories (2) through (6) None

Category (7) Miscellaneous

None except 30 Chemical sample analyses @ $5.00*/each sample	150.00	$9,702.00

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,600 feet @ $1.03/ft.	$1,648.00	$1,648.00
Estimated Total Cost of Stage II		$11,350.00

SUMMARY

Estimated Total Cost of Stage I	$ 9,060.00
Estimated Total Cost of Stage II	11,350.00
Estimated Total Cost of the Project	$20,410.00
Government participation @ 75% (rounded to)	$15,307.00

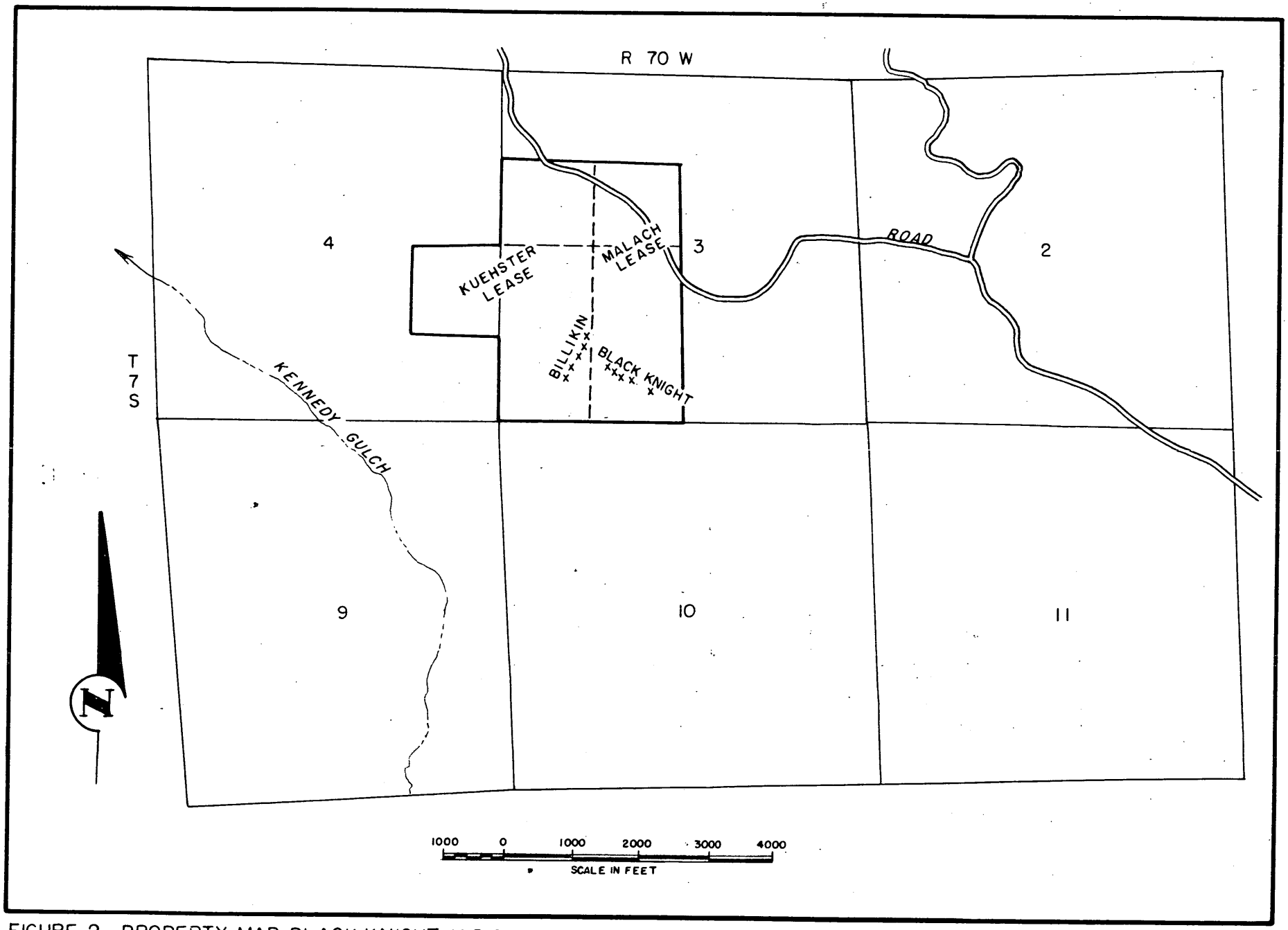

FIGURE 2 - PROPERTY MAP, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

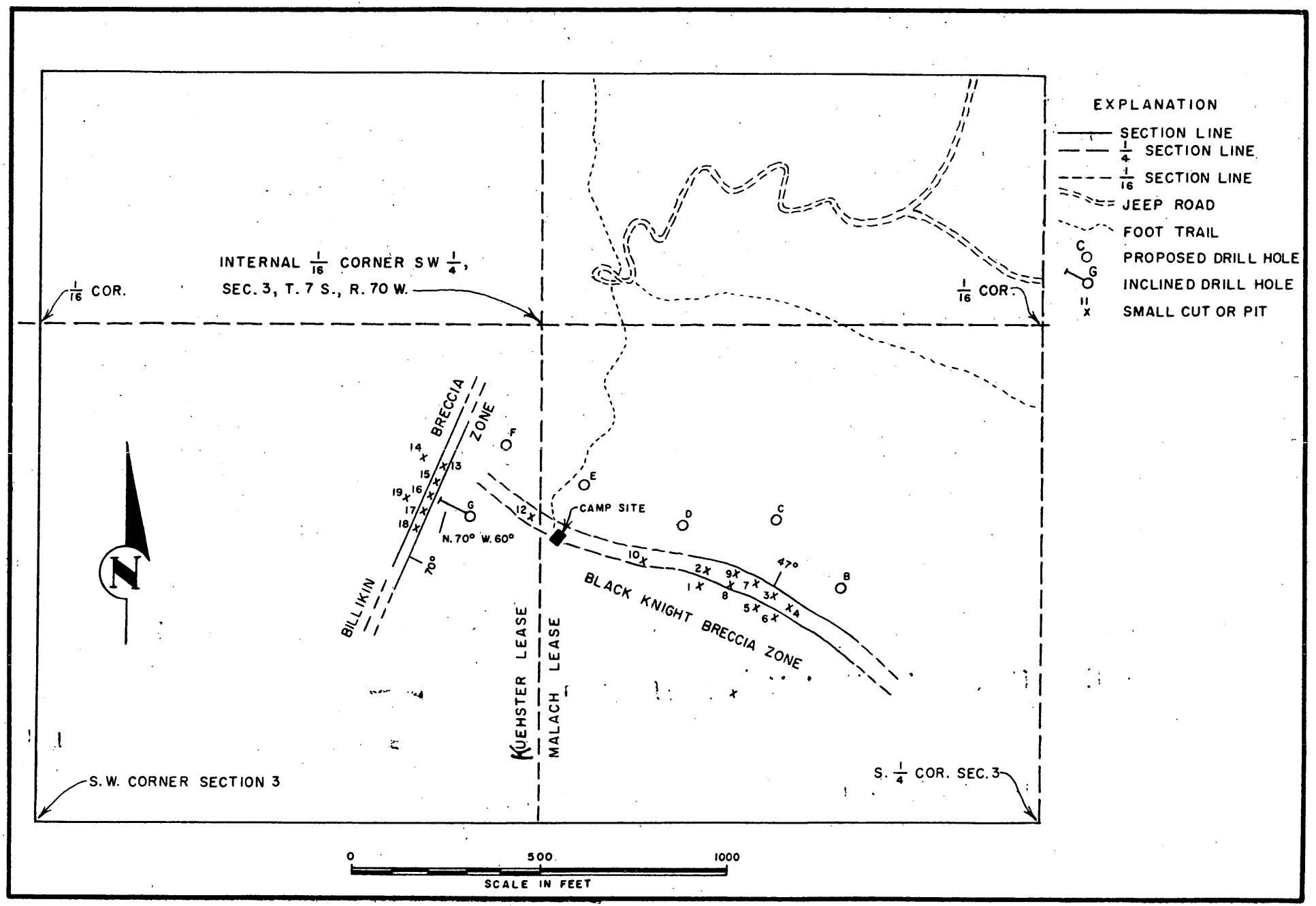

FIGURE 4 - MAP SHOWING LOCATION OF RECOMMENDED DRILL HOLES, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

Field Team Copy DMEA
Date Rec'd.
JUL 25 1956
BUREAU OF MINES
Denver, Colorado

MF-200
(Revised June 1954)

Docket No. DMEA [redacted]

Commodity [redacted]

Contract No. Idm-E

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

EXPLORATION PROJECT CONTRACT[1]

It is agreed this ..... day of ....., 195..., between the United States of America, acting through the Department of the Interior, Defense Minerals Exploration Administration, hereinafter called the "Government," and [2] Caleb V. Haynes, Jr. and Glen A. Boyd, Jr., a partnership, whose mailing address is Post Office Box 5, Golden, Colorado, and 41 Prospector's Park, Golden, Colorado, hereinafter called the "Operator," as follows:

ARTICLE 1. *This contract* is entered into under the authority of the Defense Production Act of 1950, as amended. It consists of this form (MF-200), the attached Exhibit "A," Annex I, and 2 maps (Figure 2 and Figure 4)

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

ARTICLE 2. *Operator's property rights.*—(a) The land which is the subject of this contract (hereinafter called "the land") is in the State of Colorado, County of Jefferson, and is described in Annex I.[3]

(b) The Operator represents and undertakes that:

(1) The Operator is the [4] lessee of [5] the mineral rights in the land, in possession and entitled to possession for all of the purposes of this contract, under and by virtue of [6] two leases, [7] recorded in Book ....., page ....., official records of said County; and

(2) The Operator's right, title, or interest (whether as owner, lessee, or otherwise) is subject only to the following claims, liens, or encumbrances: Royalties as are set forth in the leases.

(c) The Subordination Agreement of the holder of any claim, lien, or encumbrance listed above, and (if the Operator does not hold the legal title) the Consent to Lien of any holder of the legal title

[1] If sufficient space is not provided in any blank, use an extra sheet of paper and refer to it in the blank.
[2] Insert name, and if an organization, its nature (corporation and place of incorporation, partnership with names of partners, etc.).
[3] State on a separate sheet marked "Annex I" the legal description or enough to identify the property, particularly excluding any areas from which the production is not to be subject to the Government's percentage royalty.
[4] Insert "owner," "lessee," "contract purchaser," "locator," etc.
[5] Insert "the entire interest," "the mineral rights," "an undivided one-third," etc.
[6] Insert "deed," "lease," "contract," "location notice," "patent," etc.
[7] If not recorded, so indicate by inserting "un."

of the land (lessor, seller, optionor, etc.), are attached, as follows: .....
Consent to Lien of Lessors

(d) The Operator shall preserve and maintain his right, title, and interest in the land and his right to the possession thereof for the purposes of this contract, and shall devote the land and all existing improvements, facilities, buildings, installations, and appurtenances to the purposes of this contract. Until the lapse of the time within which the Government may make a certification of discovery or development without any such certification having been made, and after any such certification has been made, the Operator shall neither transfer, convey, nor surrender the land nor any right, title, or interest therein, nor permit nor suffer any claim, lien, or encumbrance thereon, without expressly referring to and providing in the instrument of conveyance, lien, or encumbrance for the preservation of the Government's right to a percentage royalty on production and lien for the payment thereof. If the Government makes no certification of discovery or development within the time limited in Article 8, it shall thereafter have no claim against the land or any production therefrom except for any production referred to in Article 8(b)(1).

ARTICLE 3. *The exploration project.*—The project is a search for indicated or undeveloped deposits of Uranium The work to be performed is described in Exhibit "A." The Operator on or before ..... shall commence the work, and on or before December 1, 1956 (unless the Operator's obligation to prosecute the work is terminated—see Article 10) shall [redacted] have completed the work [redacted] See Article 23.

ARTICLE 4. *Performance of the work.*—(a) *Operator's responsibility.*—The work shall be performed with reasonable diligence, efficiently, expertly, in a workmanlike manner, in accordance with good mining standards and State regulations for health and safety and for liability insurance covering employment; and with suitable and adequate equipment, facilities, materials, supplies, and labor, to bring it to completion within the time fixed.

(b) *Independent contracts.*—To the extent that the allowable costs are estimated in Exhibit "A" with express reference to performance by independent contractors on a unit-price basis (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations), the work may be so performed; but if the reference in Exhibit "A" to any such independent contract requires the Government's approval thereof, payments under such contract will not be allowable costs unless the Government gives its written approval of the contract. Any such independent contract shall refer to some specific and identifiable part of the work, and shall be subject to all of the pertinent terms and conditions of this exploration contract; but the Government shall not be considered a party thereto, and its rights under this contract, including the right to terminate its contributions, shall not be affected thereby. Regardless of the provisions of any such independent contract and regardless of the Government's approval thereof, the Government will participate in payments to the independent contractor only on account of work performed in accordance with the provisions of this 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.

(c) *Government may inspect.*—The Operator shall consult with and inform the Government on all phases of the work as it progresses. The Government may enter at all reasonable times to inspect the work under the contract, and also after a certification of discovery or development to inspect production operations and underground workings. The operator shall provide the Government with all reasonable means of access for such inspections.

ARTICLE 5. *Contribution by the Government.*—The estimated total allowable cost of the project, set forth in Exhibit "A," is the sum of $ 20,430.00
The Government shall contribute 75 percent of the allowable costs as they are incurred in a total sum not in excess of $ 15,307.00 : *Provided,* That until the Operator has rendered to the Government his final report, 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 10 percent of the estimated total cost of the work or not in excess of the amount of the Government's contribution to the cost of property which is or may become subject to disposal as provided in Article 9(c), whichever is greater. The Government will make its contribution on the basis of the monthly vouchers referred to in Article 7(b), but all payments by the Government are provisional only, subject to audit, until the account between the Operator and the Government is finally audited and settled. "Costs incurred" mean costs that have been paid or have become due and payable, or that in the opinion of the Government have become an obligation. The Government may make payments directly to independent contractors and suppliers for the account of the Operator rather than to the Operator.

ARTICLE 6. *Estimated costs.*—(a) *Categories of costs.*—The allowable costs of the work to which the Government shall contribute are limited to those that are direct, reasonable, necessary, and that are estimated in Exhibit "A" by categories as specified in this article. If any category or subcategory is omitted from the estimate of costs, or if the word "none" is annexed to the listing thereof, costs under such category or subcategory are not allowable. Any excess over any estimate which is indicated as the maximum of any category, subcategory, or item, either as to requirement or related cost, and any excess over the estimated total allowable cost of the work, shall not be allowable. Any excess over the estimate of any category, subcategory, or item, either as to requirement or related cost, not indicated as a maximum shall be allowable within the limit of the estimated total allowable cost of the work. To the extent that excesses over maximums other than the estimated total allowable cost of the work may be necessary for the performance of the work, the Operator shall incur such excesses for his own account without contribution by the Government; ~~but except for any such necessary excesses in categories, subcategories, or items the Operator is not obligated to incur more than his agreed percentage of the estimated total allowable cost of the work~~ See Article 23.

To the extent specified in this article or in Exhibit "A" the following categories, subcategories, and elements thereof are maximums; but if not so specified either here or in Exhibit "A" they are not maximums, and may be exceeded within the limit of the estimated total allowable cost of the work:

CATEGORY (1)—INDEPENDENT CONTRACTS.—Work to be performed under independent contracts (see Article 4(b)). The estimated total amount of this category and the estimated cost of each unit of work for performance under an independent contract are maximums.

CATEGORY (2)—PERSONAL SERVICES.

Subcategory (a)—Supervision.—All elements of this subcategory (number of supervisors, periods of employment, rates of pay, and total) are maximums.

Subcategory (b)—Technical services.—All elements of this subcategory (number of technicians, periods of employment, rates of pay, and total) are maximums.

Subcategory (c)—Labor.

CATEGORY (3)—OPERATING MATERIALS AND SUPPLIES.—Includes such items as drill bits and steel, explosives, fuel, pipe, power, small tools costing less than $50 each, timber, track.

CATEGORY (4)—OPERATING EQUIPMENT.

Subcategory (a)—Rental.—The number of each object to be rented [6 mine cars, 1 truck], the rate of rental [$100 per month, $5 per hour], and the total of this subcategory are maximums.

Subcategory (b)—Purchases.—The estimated total of this subcategory is a maximum.

Subcategory (c)—Depreciation.—All elements of this subcategory (time periods, rate of depreciation, and subcategory total) are maximums.

CATEGORY (5)—INITIAL REHABILITATION AND REPAIRS.—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

Subcategory (a)—Initial rehabilitation and repairs of existing buildings, fixtures, and installations (exclusive of mine workings).—The estimated total of this subcategory is a maximum.

Subcategory (b)—Initial rehabilitation and repairs of operating equipment.—The estimated total of this subcategory is a maximum.

CATEGORY (6)—NEW BUILDINGS, FIXTURES, AND INSTALLATIONS (EXCLUSIVE OF MINE WORKINGS).—Estimates under this category include all requirements and related costs, such as labor, materials and supplies, and supervision at a rate not higher than provided for in Category (2), and shall not be duplicated under any other category. The estimated total of this category is a maximum.

CATEGORY (7)—MISCELLANEOUS.—Repairs and maintenance (other than initial) of operating equipment, analytical work, prints and other reproductions, accounting, Operator's share of payroll taxes, liability insurance covering employment, travel, communications, and any other items of requirement or cost that do not fall within any of the first 6 categories.

THE ESTIMATED TOTAL ALLOWABLE COST of the work is a maximum.

(b) *Nonallowable costs.*—The following costs are not allowable for contribution by the Government:

(1) *Costs of the land,* such as rental, depreciation, depletion, or other cost of acquiring, owning, or holding possession;

(2) *Indirect costs,* such as general overhead, corporate management, interest, taxes (other than payroll and sales taxes), insurance (other than liability insurance covering employment), damages to persons, damages to property (other than necessary repairs or replacements of equipment or other property used in the work);

(3) *Previous work* performed or costs incurred before the date of this contract; and

(4) *Deferred payments.*—Any costs incurred by the Operator under any rental-purchase agreement, installment-purchase agreement, or any agreement for the purchase of goods under the provisions of which payment of the full purchase price is deferred more than 90 days from the delivery of the goods; unless the purchase agreement is approved by the Government in writing.

(c) *Reductions in costs.*—The Operator shall account for and give the Government credit for any incidental benefits, credits, or money received in the ordinary course of business in prosecuting the work (as by salvage or sale of materials or equipment, furnishing of room or board, furnishing of power or services to third persons, rebates or discounts on purchases, etc.), in the same ratio in which the Government contributes to costs; and such amounts shall be treated as a reduction in costs incurred so that they are available for use within the limit of the original estimated total cost. This provision does not apply to receipts from production which are subject to the Government's percentage royalty under the provisions of Article 9. See Article 23.

ARTICLE 7. *Reports, accounts, audits.*—(a) *Operator's records.*—The Operator shall keep suitable records and accounts of the work performed and of any production in which the Government may have an interest; and shall preserve those with respect to work performed for at least three years after final payment by the Government, and those with respect to production for at least three years after any obligation to pay royalties to the Government has terminated. The Government may inspect and audit said records and accounts at any time, either by itself or by a certified public accountant. If the Government elects to audit said records and accounts relating to the exploration work by certified public accountant, it may do so as a cost of the work to which the Operator shall contribute. The Comptroller General of the United States or his representative, until the expiration of said three-year periods, shall have access to and the right to examine any pertinent books, documents, papers, and records of the Operator. All of the Operator's vouchers and records and accounts relating thereto and the Government's payments thereof remain subject to adjustment until final audit by the Government. If work under this contract is carried on in conjunction with any other operations, or if labor, supervision, services, materials, supplies, equipment, facilities, or other requirements for carrying on the work are also used in connection with other operations, the costs shall be segregated and accounted for on a basis and by methods and accounts that are satisfactory to and approved by the Government.

(b) *Progress reports and vouchers.*—The Operator shall provide the Government with five copies of monthly progress reports in three sections as follows: (1) Operator's Monthly Report and Voucher showing detailed costs incurred during the reporting period; (2) Operator's Unit Cost and Progress Report showing the various types of work performed during the reporting period and costs incurred for each type of work; and (3) a Narrative Report of the work performed during the reporting period including adequate engineering-geological maps or sketches, drill hole logs and locations, and assay reports on samples taken concurrently with advance in mineralized ground. (Forms for reporting under (1) and (2) above will be provided by the Government.)

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

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

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

ARTICLE 8. *Repayment by Operator.*—(a) *Certification.*—If the Government considers that a discovery or development from which production may be made has resulted from the work, the Government, at any time not later than six months after a sufficient final report and final account (see Article 7) has been rendered, may so certify in writing to the Operator. Such certification shall describe broadly or indicate the nature of the discovery or development.

(b) *Royalty on production.*—The Operator, as principal if the Operator is the producer, or as surety if the Operator is not the producer, shall pay to the Government a royalty on all minerals mined or produced from the land, as follows: (1) regardless of any certification of discovery or development, from the date of the contract until the lapse of the time within which the Government may make such certification, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first; or (2) if the Government makes a certification of discovery or development, within a period of ten years from the date of the contract, or until the total net amount contributed by the Government without interest is fully repaid, whichever occurs first.

(c) *Basis for computation.*—The Government's royalty shall be a percentage of the gross proceeds (including any bonuses, premiums, allowances, or other benefits) from the production sold, in the form sold (ore, concentrates, metal, or equivalent), at the point of delivery (the f. o. b. point); *except,* that charges of *the buyer* arising in the regular course of business, and shown as deductions on the buyer's settlement sheets, on account of the cost of treatment processes performed by *the buyer,* sampling and assaying to determine the value of the production sold, and freight paid by *the buyer* to a carrier (not the Operator), shall be allowed as deductions in arriving at the "gross proceeds" as that term is used herein. Any costs of treatment processes, sampling or assaying, or transportation, performed or paid by the Operator or by anyone other than the buyer, are not deductible in arriving at the "gross proceeds" as that term is here used. The term "treatment processes," as here used, means those processes (such as milling, concentrating, smelting, refining, or equivalent) applied to the crude ore or other production after it is extracted from the ground, to put it into a commercially marketable form; excluding fabricating or manufacturing.

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

(e) *Percentages of royalty.*—The percentages of the Government's royalty shall be as follows:

One and one-half (1½) percent of amounts ("gross proceeds" or "value") not in excess of eight dollars ($8.00) per ton of production in the form in which sold, held, or used, plus one-half (½)

percent for each additional full fifty cents ($0.50) by which such amounts exceed eight dollars ($8.00) per ton, but not in excess of five (5) percent of such amounts.

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

(f) *Time for computation and payment.*—The Government's royalty shall be computed and paid currently upon each lot sold, held, or used in integrated operations, as the case may be, as above provided in this article.

(g) *Lien for payment.*—To secure the payment of its percentage royalty, there is hereby granted to the Government a lien upon the land or the Operator's interest in the land and upon any production of minerals therefrom, until the royalty claim is extinguished by lapse of time or is fully paid.

(h) *Notice to purchasers.*—The Operator shall give notice of the Government's claim for royalty to any purchaser of the production, and shall authorize and direct such purchaser to pay the royalty directly to the Government and to furnish the Government with copies of the settlement sheets. If the records of any production and sales or other disposition of production, whether the production is by the Operator or by others, are not made available to the Government, the amount of the royalty may be estimated by the Administrator, Defense Minerals Exploration Administration, or his successor, and his estimate thereof shall be final and binding upon the Operator.

(i) *No obligation to produce.*—Nothing in this contract is to be construed as imposing any obligation on the Operator or the Operator's successor in interest to engage in any production operations.

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

ARTICLE 9. *Interests in purchased property.*—(a) *Title and ownership.*—All costs under this contract shall be incurred by the Operator in the Operator's own name and for the Operator's own account; but any property acquired to the cost of which the Government contributes shall belong to the Operator and the Government jointly in proportion to their respective contributions, although title thereto shall be taken in the name of the Operator.

(b) *Preservation of property.*—Until the final disposal of any property in which the Government has an interest the Operator shall preserve and protect same for the best interest of the Government, any reasonable and necessary costs thereof to be treated as an allowable cost of the project. After the completion of the work or termination of the Government's obligation to contribute, or when such property is not in use for or needed for the work, the Operator shall neither use it without the written consent of the Government nor without paying a reasonable rental to be fixed by the Government for its interest.

(c) *Disposal of property.*—Upon the completion of the work or termination of the Government's obligation to contribute to costs, or when the property is no longer needed for the work, the Operator shall promptly dispose of salable or salvageable property in which the Government has an interest 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 or the Government at a price at least as high as could be obtained from others, unless the Government in writing waives its interest in any such property. Without advance approval of the sales price by the Government the Operator shall not sell at any price any item of property the cost of which was more than $500, and shall not sell at less than 25 percent of the purchase price any item of property which cost $500 or less. The Government, in lieu of approving the sales price for any such item, may itself purchase the item at the best price which the Operator is able to obtain or himself cares to give. Property remaining upon any termination of the work shall be considered in groups or categories (such as drill steel, or explosives, or pipe, or rails), and if the original cost of the remaining unexpended portion of any such group or category is less than $50, the Government waives its interest therein. If necessary to accomplish the disposal of any item the Operator shall dismantle and sever it from the land, the cost thereof to be treated as a cost of the project.

(d) *Default of the Operator re disposal.*—If within 90 days after the completion of the work or termination of the Government's obligation to contribute to costs, or after the property is no longer needed for the work, or after such further time as the Government may in writing allow, the Operator has failed to sell or otherwise liquidate or dispose of any property in which the Government has an interest, the Government, at any time prior to final settlement under the contract, may pursue one of the following two courses: (1) the Government, by written notice to the Operator, may place upon such property what in its opinion is a fair valuation thereof, not in excess of the cost less 1.66 percent per month from the

date such property was purchased under this contract to the termination of said 90-day period; and such property shall thereupon be considered and accounted for as having been purchased by the Operator at the valuation so fixed by the Government; or (2) the Government may enter and take possession of such property wherever it may be found, and remove and dispose of it for the joint account of the parties.

ARTICLE 10. *Termination of the Government's obligations.*—(a) If in the opinion of the Government operations at any time have failed to achieve anticipated results that indicate the probability of making a worthwhile discovery, and in the opinion of the Government further operations are not justified, the Government may give the Operator written notice thereof, and thereupon: (1) the Government shall be free of all obligation to contribute to costs not then incurred other than such as may be allowable under the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting.

(b) If in the opinion of the Government the Operator is in any manner in default under the terms of the contract, the Government may give the Operator written notice of such default with a specification of reasonable time within which the default must be cured; and if the Operator fails to cure such default as required, thereupon: (1) the Government shall be relieved of all obligation to contribute to costs not incurred when the notice was given, other than such as may be allowable by the provisions of the contract as necessary and incidental to winding up, reporting, and accounting; and (2) the Operator shall be free of all obligation to prosecute the work other than such as may be necessary and incidental to winding up, reporting, and accounting. The remedy provided for the Government in this paragraph "(b)" is in addition to any other remedy provided in this contract, and in addition to any other remedy the law may provide for breach of contract.

(c) The giving of any notice by the Government under the provisions of this Article 10 shall not affect the Government's rights as provided for in the contract with respect to a percentage royalty, and such rights shall be fully preserved.

ARTICLE 11. *Notices to be given by the Government* may be delivered to the Operator, or may be sent by registered mail addressed to the Operator at his mailing address stated in this contract. If mailed, notices are deemed to have been delivered five days after the date of mailing.

ARTICLE 12. *Officials not to benefit.*—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 13. *Changes and added provisions.*—
(a) In Article 3 all of the words following the reference to Article 10, except the words "shall have completed the work," are deleted. (b) Categories (2) through (7) of Article 6(a) are deleted except for sample analyses. (c) In addition to the costs of work estimated in Exhibit "A" by categories of actual costs, the costs of work requirements specified in Exhibit "A" as "Fixed Unit Costs" are allowable costs of the project. The Government will contribute to the fixed unit costs as work units are performed. A "Fixed Unit Cost" is an agreed price for each unit of work to be performed regardless of costs incurred by the Operator. Costs set forth in Exhibit "A" include all allowable costs of the work to be performed under the contract.
(d) That part of the last sentence in the first paragraph of Article 6(a) commencing after the semicolon, is deleted.
(e) In Article 6(e), the reference to Article 9 is changed to Article 8.
(f) In Category (1) of Article 6(a), the phrase "the estimated cost of each unit of work" shall be construed to mean, for the purposes of this contract, "the average cost per foot of drilling, including transportation, drill site, and access trail preparation, for each individual drill hole."

Executed in sextuplicate the day and year first above written.

THE UNITED STATES OF AMERICA

By .....
Administrator, Defense Minerals
Exploration Administration

.....
Caleb V. Haynes, Jr. (Partner)

By .....
Glen A. Boyd, Jr. (Partner)

.....

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—70617-1

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMSA-4104

ANNEX I

The land referred to in Article 2 of the Contract consists of the following:

The West one-half (½) of the Southwest one-quarter (¼) and the Southwest one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), and the Northeast one-quarter (¼) of the Southeast one-quarter (¼) of Section 4, Township Seven (7) South, Range 70 West of the Sixth P.M. (160 acres more or less), leased by the Operator from Carl L. Manchester.

The East one-half (½) of the Southwest one-quarter (¼) and the Southeast one-quarter (¼) of the Northwest one-quarter (¼) of Section Three (3), Township Seven (7) South, Range 70 West of the Sixth P.M. (120 acres more or less), leased by the Operator from Louis S. Malesh, excluding, however, a tract conveyed by Louis S. Malesh to Reinhardt and Ruth Ennke by deed recorded in Book 527, page 105 of the records of Jefferson County, Colorado, a portion of which tract occupies approximately 1.6 acres of the aforesaid 120 acres of land, which portion is bounded by the North line beginning at the northeast corner of the NE¼ SW¼ sec. 3, thence west 107 feet, thence south 660 feet, thence east 107 feet to the quarter section line, thence north 660 feet to the point of beginning.

The location of the land is shown on the map entitled "Figure 2 - Property Map, Black Knight and Billikin Lodes, Caleb V. Haynes, Jr., and Glen A. Boyd, Jr., Jefferson County, Colo., DMSA 4104," attached hereto and made a part of this Contract.

EXPLORATION PROJECT CONTRACT
CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR.
DOCKET NO. DMEA-4104

EXHIBIT "A"

Description of the Work

General Provisions

The work consists of exploration by diamond core drilling from the surface for the downward projection of the uranium ore bearing Black Knight and Billikin breccia zones.

Each hole shall be diamond core drilled the entire length. No payment shall be made for any uncompleted drill hole. The minimum collar size of core shall be NX, and no part of any hole shall be less than AX size without prior approval of the Government.

All core and cuttings shall be saved by such methods and at such drilling intervals, and shall be checked for radioactivity in such manner, as may be specified by the Government. The sections of the drill core and cuttings that indicate significant radioactivity shall be split into halves. One-half of each of the radioactive drill cores shall be analyzed chemically for uranium, and one-half of each of the radioactive cores and cuttings shall be furnished to the Government. The remaining half of the radioactive cuttings, and all the non-radioactive cores and cuttings, shall be properly boxed, labeled, and stored pending Government inspection and disposition.

All drill holes shall be logged geologically and probed for radioactivity and four copies of each log shall be furnished to the Government.

No drill hole shall be drilled closer than 100 feet to the outside boundary of the land, and no Stage II drill hole shall be drilled closer than 75 feet from any Stage I hole from where it intersects the breccia zones.

The project shall be supervised at all times by a qualified geologist or mining engineer, approved by the Government, who shall perform the required surveying, mapping, sampling, and hole logging, and shall prepare reports required pursuant to this Contract.

Stage I

Stage I shall consist of five (5) vertical core drill holes to intersect the Black Knight breccia zone approximately 150 feet down-dip below the surface and one inclined core drill hole to intersect the Billikin breccia zone about 150 feet down-dip below the

surface. The holes that shall be drilled are designated as B, C, D, E, F, and G and their locations are shown on the attached map entitled "Figure 4 - Map Showing Location of Recommended Drill Holes, Black Knight and Billikin Lodes, Caleb V. Haynes, Jr., and Glen A. Boyd, Jr., Jefferson County, Colo., DMEA-4104."

The depths, directions, and inclinations that these holes shall be drilled are as follows:

Hole No.	Direction and Inclination	Depth Feet
B	Vertical	190
C	Vertical	220
D	Vertical	190
E	Vertical	170
F	Vertical	160
G	N. 70° W at -60° Inclination	350

Stage II

Stage II consists of drilling not more than eight holes aggregating not more than 1,600 feet to explore for the extension of favorable mineralization intersected in Stage I drill holes. The location, inclination and depth of each hole are subject to the prior written approval of the Government.

Estimated Cost of the Project

(in addition to maximum set forth in Article 6
an asterisk indicates maximum)

Stage I

Actual Costs

Category (1) Independent Contracts

1,280 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft. $7,641.60

Categories (2) through (6) None

Category (7) Miscellaneous

None except
20 Chemical sample analyses @ $5.00*/each sample — $ 100.00 — $7,741.60

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,280 feet @ $1.03/ft. — $1,318.40 — 1,318.40

Estimated Total Cost of Stage I — $9,060.00

Stage II

Actual Costs

Category (1) Independent Contracts

1,600 feet of core drilling, including transportation, drill site, and access trail preparation thereto, @ $5.97/ft. — $9,552.00

Categories (2) through (6) — None

Category (7) Miscellaneous

None except
30 Chemical sample analyses @ $5.00*/each sample — 150.00 — $9,702.00

Fixed Unit Costs (See Article 13)

Incidental allowances for each foot of core drilling completed, 1,600 feet @ $1.03/ft. — $1,648.00 — $1,648.00

Estimated Total Cost of Stage II — $11,350.00

S U M M A R Y

Estimated Total Cost of Stage I	$ 9,060.00
Estimated Total Cost of Stage II	11,350.00
Estimated Total Cost of the Project	$20,410.00
Government participation @ 75% (rounded to)	$15,307.00

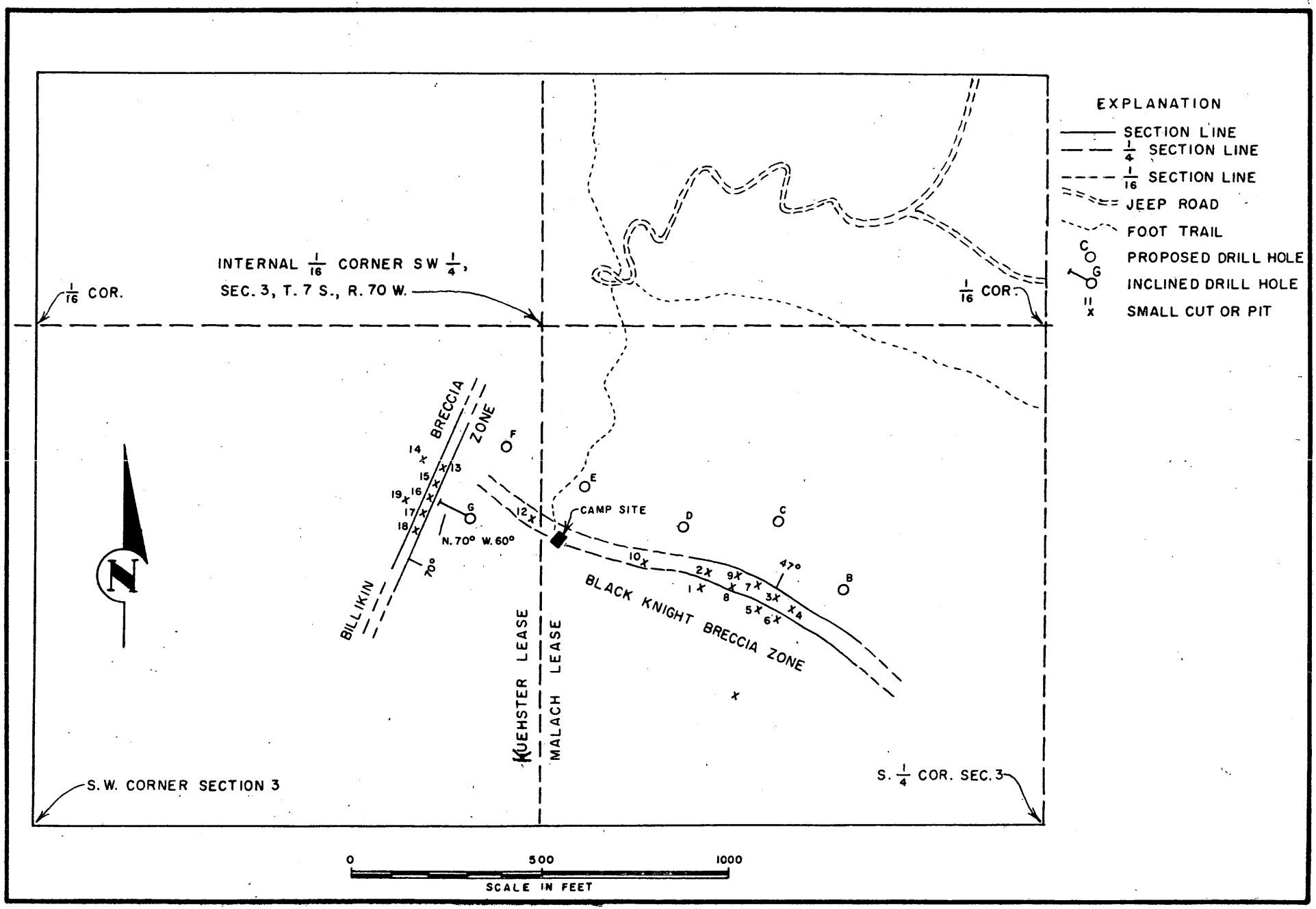

FIGURE 4 - MAP SHOWING LOCATION OF RECOMMENDED DRILL HOLES, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

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JUN 21 1956

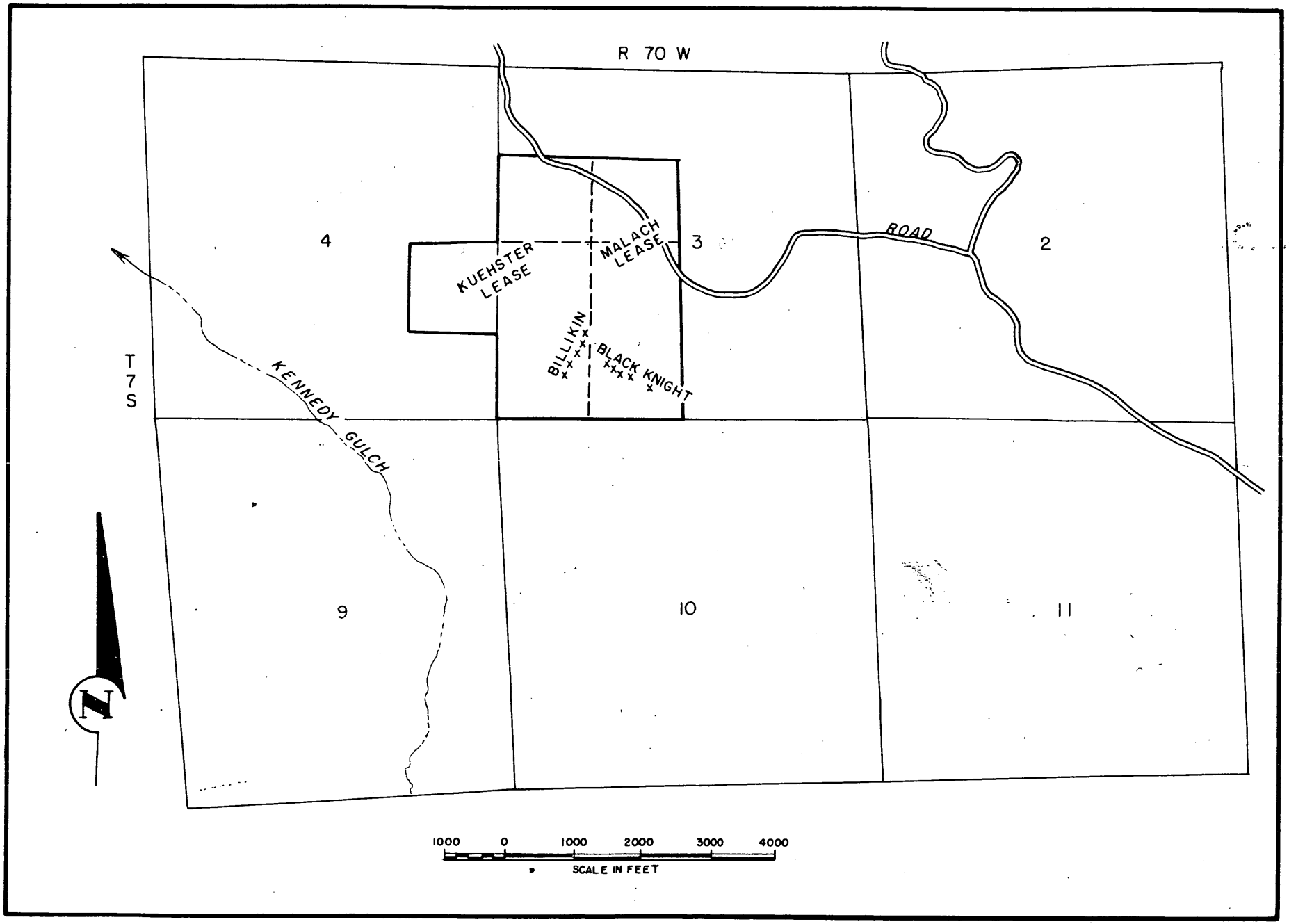

FIGURE 2 - PROPERTY MAP, BLACK KNIGHT AND BILLIKIN LODES, CALEB V. HAYNES, JR., AND GLEN A. BOYD, JR., JEFFERSON COUNTY, COLO. DMEA 4104

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JUN 2 1 1956

MF-103
(Revised April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

DMEA
Date Rec'd
DEC 22 1955
BUREAU OF MINES
Denver, Colorado

Form Approved.
Budget Bureau No. 42-R1035.2.

APPLICATION FOR AID IN AN EXPLORATION PROJECT, PURSUANT TO DMEA ORDER 1, UNDER THE DEFENSE PRODUCTION ACT OF 1950, AS AMENDED

Not to be filled in by applicant

Docket No. DMEA-4104
Metal or Mineral Uranium
Date Received 12-27-55
Estimated Cost $28,369.36
Participation (Government %)

INSTRUCTIONS

1. *Name of applicant.*—(*a*) State here your full legal name, in the form in which you will wish to contract, and your mailing address: Caleb V. Haynes Jr. P. O. Box 5, Golden, Colorado.
Glen A. Boyd Jr., 41 Prospector Park, Golden, Colorado.

Partnership - Colorado

(*b*) If other than an individual, add to your name above whether a corporation, partnership, etc., and the name of the State in which incorporated or otherwise organized.

(*c*) If a corporation, add to above statement, titles, names and addresses of officers.

(*d*) If a partnership, add to the above statement the names and addresses of all partners.

2. *General.*—Read DMEA Order 1, "Government Aid in Defense Exploration Projects," before completing this application. Submit this application and all accompanying papers in quadruplicate (four copies), with your name and address on each sheet of the application and on all accompanying papers. Where sufficient space is not provided on the form for all required information, state it on an accompanying paper, with a reference in each case to the instruction to which it refers by number. Comply with all applicable instructions; or, if not applicable, so state. File the application with Defense Minerals Exploration Administration, Department of the Interior, Washington 25, D. C., or with the nearest field executive officer thereof.

3. *Applicant's property rights.*—(*a*) State the legal description of the land upon which you wish to explore, including all land which you possess or control that may be benefited by the exploration, and excluding any land or interest in land which is not to be included in the exploration project contract The west half of the southwest quarter and the southwest quarter of the northwest quarter of Section 3, and the northeast quarter of the southeast quarter of Section 4, plus the east half of the southwest quarter and the southeast quarter of the northwest quarter of Section three, all in T7S, R70W, 6th P.M.

(*b*) State any mine name by which the property is known. N/A

(*c*) State your interest in the land, whether owner, lessee, purchaser under contract, or otherwise leases

(*d*) If you are not the owner, submit with this application a copy of the lease, contract, or other document under which you control the property.

(*e*) If you own the land, describe any liens or encumbrances on it N/A

(*f*) If the land consists of unpatented claims, add to the description above, the book and page numbers for each recorded location notice.

4. *Physical description.*—(*a*) Describe in detail any mining or exploration operations which have been or now are being conducted upon the land, including existing mine workings and production facilities. State your interest, if any, in such operations. Also describe accessibility of mine workings for examination purposes.

(*b*) State past and current production, and ore reserves, if any, giving quantities and grades.

(*c*) Describe the geologic features of the property, including mineralization, type of deposit (vein, bedded, etc.), and your reasons for wishing to explore. Illustrate with maps or sketches. Send with your application (but not necessarily as a part of it) any geologic or engineering report, assay maps, or other technologic information you may have, indicating on each whether you require its return to you.

(*d*) State the facts with respect to the accessibility of the project: Access roads, distances to shipping, supply and residence points.

(*e*) State the availability of manpower, materials, supplies, equipment, water, and power.

16—66551-1

SEE APPLICANT'S REPORT pp. 1-12

5. *The exploration project.*—(*a*) State the mineral or minerals for which you wish to explore Primary and secondary uranium minerals

(*b*) Describe fully the proposed work, including a map or sketch of the property showing a plan (and cross sections if needed) of any present mine workings, and the location of the proposed exploration work as related to such features as contacts, veins, ore-bearing beds, etc. See Application Report p. 14-21

(*c*) The work will start within 30 days and be completed within 14 months from the date of an exploration project contract.

(*d*) State the operating experience and background of the applicant with relation to the ability to carry out such exploration project, and also that of the person or persons who will supervise the operations. See Application Report p. 20

6. *Estimate of costs.*—Furnish a detailed estimate of the costs of the proposed work (you will have to use a separate sheet), under the following headings. Add the totals under all headings to give the estimated total cost of the project: pp. 15-18

(*a*) *Independent contracts.*—(Note.—If the applicant does not intend to let any of the work to contractors, write "none" after this item. To the extent that the work is to be contracted, do not repeat the cost of the contract-work in subsequent items.) State the cost of any proposed independent contracts for the performance of all or any part of the work, expressed in terms of units of work (such as per foot of drilling, per foot of drifting, per hour of bulldozer operations, per cubic yard of material moved, etc.). pp. 15-18

(*b*) *Labor, supervision, consultants.*—Include an itemized schedule of numbers, classes and rates of wages, salaries or fees for necessary labor, supervision and engineering and geological consultants. pp. 15-18

(*c*) *Operating materials and supplies.*—Furnish an itemized list, including items of equipment costing less than $50 each, and power, water and fuel. pp. 15-18

(*d*) *Operating equipment.*—Furnish an itemized list of any operating equipment to be rented, purchased, or which is owned and will be furnished by the Operator, with the estimated rental, purchase price, or suggested use-allowance based on present value, as the case may be. pp. 15-18

(*e*) *Rehabilitation and repairs.*—Furnish a detailed list showing the cost of any necessary initial rehabilitation or repairs of existing buildings, installations, fixtures, and movable operating equipment, now owned by the Operator and which will be devoted to the exploration project. N/A

(*f*) *New buildings, improvements, installations.*—Furnish a detailed list showing the cost of any necessary buildings, fixed improvements, or installations to be purchased, installed or constructed for the benefit of the exploration project. N/A

(*g*) *Miscellaneous.*—Furnish a detailed list showing the cost of 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. pp. 15-18

(*h*) *Contingencies.*—Give an estimate of any necessary allowances for contingencies not included in the costs stated above.

NOTE.—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 the contract, should be included in the estimate of costs.

7. (*a*) Are you prepared to furnish your share of the cost of the proposed project in accordance with the regulations on Government participation (Sec. 7, DMEA No. 1)? Yes See Application Report

(*b*) How do you propose to furnish your share of the costs? See Application Report p. 20

☐ Money ☐ Use of equipment owned by you ☒ Other

Explain in detail on acompanying paper.

CERTIFICATION

The undersigned, whether as an individual, corporate officer, partner, or otherwise, both in his own behalf and acting for the applicant, certifies that the information set forth in this form and accompanying papers is correct and complete, to the best of his knowledge and belief.

Dated 20 December, 195

Caleb V. Haynes Jr. Glen A. Boyd Jr.

Caleb V. Haynes Jr. Glen A. Boyd Jr.
(Applicant)

By

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.

U. S. GOVERNMENT PRINTING OFFICE 16—66551-1

DMEA
Date Rec'd.
DEC 22 1955
BUREAU OF MINES
Denver, Colorado

RECEIVED
DEC 27 1955

APPLICATION REPORT

for

DMEA EXPLORATION PROJECT CONTRACT

on the

Black Knight and Billikin Lodes

Jefferson County, Colorado

By

Caleb V. Haynes Jr. and Glen A. Boyd Jr.

Post Office Box 5
Golden, Colorado

1955

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OBJECTIVE

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It is the objective of this report to interest the Defense Minerals Exploration Administration in the granting of Government aid in the form of an Exploration Project Contract in order that the applicants may search for indicated sources of uranium within the parcel of ground herein described.

INTRODUCTION

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In an effort to locate a favorable area for uranium prospecting in the Front Range of the Colorado Rockies, a careful review was made of the literature pertaining to the geology and occurrence of uranium mineralization in the area. The occurrences of uranium in the Ralston Creek and Golden Gate Canyon areas (Adams, Gude and Beroni, 1953) appeared interesting and several outstanding relationships were noted; namely, the uranium deposition appears to have been controlled by Laramide faulting, hornblende gneiss seems to have had a favorable effect on the concentration (probably due to iron) of uranium and, in most cases, the uranium mineralization is associated with copper.

With these relationships in mind geologic literature was studied and reconnaissance field trips were made in order to locate a favorable yet relatively unexplored area for uranium prospecting. By the end of August 1954 an area in the southern portion of Jefferson County seemed to stand out. Some maps (Stose, 1935) show a tongue (fig. 1) of the Swandyke hornblende gneiss within the gneisses and schists of the Idaho Springs formation. This tongue extends from Douglas County in a northwesterly direction, crossing the South Platte River near the settlement of South Platte and continuing into Jefferson County. Sandstone filled faults in the Platte Canyon area have been studied by P. W. Vintanage (1954) and plutons in the northwest corner of the quadrangle have been described by Boos and Aberdeen (1940). Other than these papers little geological work has been done in the area. Although no Laramide faults were definitely known to exist the area appeared worthy of investigation. I was joined in this work by Glen A. Boyd, Jr. in November 1954.

When word was had of a uranium discovery in gneisses of the Idaho Springs formation on the South Platte River near Waterton the potentials of the Platte Canyon area seemed unquestionable. Inspection of the Waterton discovery provided additional data to work with, but at the same time discouraged further exploration in the immediate vicinity as it had suddenly become too popular and land disputes appeared inevitable. It was then decided to work the territory further west to the contact of the gneisses with the granites of the Pikes Peak batholith.

On April 24, 1955, after tracing mineralized float to its source, secondary uranium minerals were found coating schistose zones in gneiss strongly mineralized with magnetite and outcropping in a steep ravine two miles south of Critchell, Colorado. Several strong radioactive anomalies were also noted. Further investigation has revealed additional outcrops of uranium minerals and points showing anomalous radioactivity extending along a northwest-southeast belt for a quarter mile and including several abandoned prospect pits and shallow workings. Dump material has revealed considerable copper mineralization in breccia and indicates a breccia reef (Lovering and Goddard, 1950) similar to the copper-uranium bearing faults north and west of Golden, Colorado. Investigation of several of the aforementioned anomalies has uncovered narrow veins of pitchblende in shear zones paralleling the foliation of magnetite gneiss.

The properties are now under lease and underground exploration is planned for the near future.

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DESCRIPTION OF PROPERTIES

Two adjoining properties totaling 280 acres are involved. One, consisting of 160 acres, is under lease from Carl L. Kuehster of Critchell, Colorado. The adjoining 120 acres on the east are being leased from Louis S. Malach of Denver. All but 40 acres are in sec 3, T. 7 S., R. 70 W. and lie approximately 1½ airline miles south-southwest of Critchell. Forty acres in sec. 4 join sec. 3.

The leases are accessable by 2½ miles of county maintained road leading south out of Critchell, then west over 1.1 miles of private road. From this point the deposits themselves are approached by Jeep over 0.7 miles of steep obscure road, and the final 700 feet are covered on foot down a 20° slope to where a tent is maintained near the boundary of the two properties. The tent is in the center of the mineralization.

The terrain is steep and rugged with elevations on the properties ranging from 8,650 feet in the northeast portion to 7,500 feet in the southwest. All drainage from the properties flows southwesterly to Castro Creek at an elevation of 7,100 feet in Kennedy Gulch.

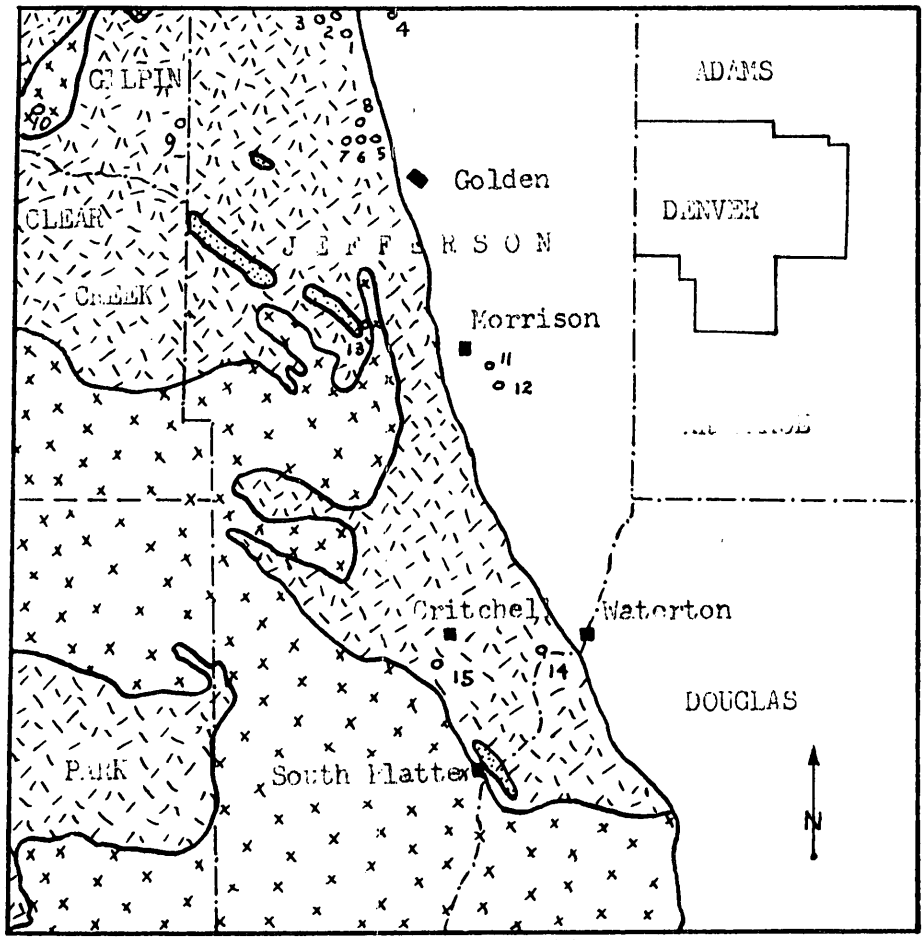
MINING HISTORY

As far as is known, what few mines that do exist in the immediate area have been long abandoned and have never appeared in literature. Mining was done intermittently and on a small scale. Local miners used the name Riley Peak Mining District in filing location certificates on Government reserved mineral rights.

From local residents it has been learned that gold, silver, copper, lead and zinc have all been sought at one time or another. Other than a little gold no production has been realized.

The latest mining activity was at the Cook mine on the property of Mrs. John A. Reynolds in Kennedy Gulch. Some gold was produced prior to 1949, and several radioactive anomalies on the property have been brought to the attention of the U. S. Geological Survey (Robert Knight, U. S. Geological Survey, 1955, personal communication). No uranium mineralization has been detected to date.

Although the existence of uranium on the properties herein described was unknown prior to this discovery, a uraniferous magnetite gneiss outcrop was claimed by one Elmer J. Feemster in 1937 in spite of the fact that he possessed the mineral rights. He called the claim the Black Knight Extension and Black Knight has been retained in naming the lode.



EXPLANATION

Undiferentiated Sediments

Swandyke Hornblende gneiss

Idaho Springs Formation

Pikes Peak Granite

URANIUM DEPOSITES

1. Schwartzwalder mine
2. North Star mine
3. Nigger Shaft
4. Leyden Mine
5. Ladwig prospects
6. Union Pacific
7. Buckman prospects
8. Freiden discovery
9. Bowman discovery
10. Central City area
11. Stevenson discovery
12. Strauss discovery
13. Idledale discovery
14. Bonzo lode
15. Black Knight and Billikin lodes

Figure 1. Index map of central Colorado.

REGIONAL GEOLOGY

Typical gneisses and schists of the Idaho Springs formation form most of the country rock on and around the properties. This formation has been intruded, lit-par-lit, along the foliation by granite and, in some places, pegmatites. The Swandyke hornblende gneiss outcrops sparingly throughout the region.

Within the typical gneisses and schists and paralleling the northwest-southwest foliation there is an unusual zone of magnetite gneiss and schist. This zone has been found in outcrop three-fourths of a mile further east and indications are that it is continuous. Within the properties a pitchblende bearing vein is confined to the magnetite zone and strikes approximately N. 70° W. and dips 47° NE. Another zone contains copper minerals and some uranium minerals in brecciated zones. It strikes almost at right angles to the one in the magnetite and dips 70° E. The exact relationship of the two faults is not fully understood at this time, however, it has been suggested (J. W. Adams, U. S. Geological Survey, personal communication) that the smaller vein in the magnetite might be a split off of the breccia reef.

The Waterton discovery, called the Bonzo Lode, is 4½ miles east-northeast and shows structural trends and uranium mineralization similar to the aforementioned pitchblende vein except that no magnetite gneiss or schist occurs. Instead the host rock is typical Idaho Springs formation with small granitic injections. The structural trends are repeated in several abandoned prospects in sec. 6, T. 7 S., R. 69 W., one mile southwest of the Bonzo Lode.

The granite of the Pikes Peak Batholith contacts the Idaho Springs formation about a mile southwest of the Black Knight and Billikin Lodes and the Castro Creek plutons (Boos and Aberdeen, 1940) outcrop a mile to the northwest. P. W. Vintanage (1954) shows a northwest-southeast, sandstone filled Precambrian fault passing just to the southwest of the properties and continuing up Kennedy Gulch. Another fault further east, if extended, would bisect the property.

In addition, investigation in NE¼, sec. 10 has revealed a porphyry dike extending over a mile in a southwesterly direction and dipping moderately to the southeast.

* Refer to Plate 1, U. S. Geological Survey, Platte Canyon Quadrangle, 1945, in pocket.

DESCRIPTION OF SITES

The various workings, pits and outcrops on the properties have been designated as sites on figure 2. Sites 1 through 11 lie along a zone of magnetite gneiss and are related to a northwest-southeast trending fault within the magnetite gneiss. This structure dips approximately 47° to the northeast and is called the Black Knight Lode. Sites 13 through 19 are abandoned workings that appear to have been concerned with a copper bearing breccia reef trending north-northeast and dipping steeply to the east. This zone is here named the Billikin Lode. It is not yet known exactly how the other sites tie into the structural picture.

The individual sites are here described briefly as to their mineralogy, lithology, anomalous radioactivity and the like.

Site 1.--Discovery site. Minerals tentatively identified as autunite, torbernite and uranophane coat fracture surfaces in pegmatite and fill schistose zones paralleling the foliation in gneiss showing exceptionally high percentage of magnetite. Gamma intensity - 1.0 MR/Hr. Assays - grab sample - 0.136 percent U_3O_8 Chem. Due to strong magnetic intensity Brunton readings are unreliable.

Site 2.--Pitchblende and several hydrous uranium oxides fill a tight shear zone exposed for several feet by blasting. Seams of pitchblende vary in thickness from less than a millimeter to nearly a centimeter. Small fractures in granite near the shear zone are filled with pitchblende. Secondary minerals tentatively identified as autunite, torbernite, uranopilite and kasolite occur in the wall rock in varying amounts. The foot wall is magnetite gneiss and schist whose foliation meets the shear plane at an acute angle. A tabular injection of granite forms the hanging wall. Wedged between the granite and the magnetite gniess above there is a small injection of fine grained pegmatite. Prior to excavation a Gamma intensity of 0.7 MR/Hr. was recorded. Initial excavation revealed radioactive fault gouge that assayed 0.191 percent U_3O_8 Chem. After blasting and exposing pitchblende a selected sample assayed 51.40 percent U_3O_8 Chem. and 0.26 percent ThO_2 Chem. On the exposed shear Gamma intensity exceeds 5.0 MR/Hr. Shear strikes approximately N. 70° W. with a dip of 47° to the northeast.

A one foot channel sample taken by Eugene Grossman of the U. S. Atomic Energy Commission assayed 0.53 percent U_3O_8 Chem. and 0.45 percent eU.

Site 3.--Originally a zone of anomalous radioactivity showing a Gamma intensity of 1.5 MR/Hr. through overburden. Shallow excavation revealed a block of biotite schist impregnated with uranophane and buried several inches. At a depth of two feet a tight shear zone was encountered that thickens into lenses of pitchblende surrounded by up to an inch or more of becurelite, schoepite and other hydrated oxides. Some of the yellow oxides form a micro-breccia in a red-brown matrix surrounding the pitchblende, and small veinlets of orange red fourmarierite criss-cross the hydrated zone. Again, as at Site 2, the wall is magnetite gneiss and schist with the hanging wall being granite. Also the strike and dip approximates that at Site 2. Shear exposed for 20 feet.

Site 4.--Narrow belt of anomalous radioactivity showed 0.15 MR/Hr. Excavation along 20 feet revealed lithology, mineralogy and structure identical to that at Site 3 and are more than likely continuous.

Site 5.--Small excavation in a zone of anomalous radioactivity, 0.15 MR/Hr., revealed secondary iron mineralization and increasing radioactivity. This site is also in magnetite gneiss and lies approximately 30 feet west of Site 3.

Site 6.--Outcrop. Uranophane coats fracture surfaces in a granite gneiss overlying magnetite gneiss. Site lies ten feet down slope and west of Site 4. The structure may be continuous with Site 5. Gamma intensity - 1.0 MR/Hr.

Site 7.--Overburden has been removed from shear zone filled with secondary iron minerals and showing anomalous radioactivity in the order of 0.7 MR/Hr. This shear is continuous with the exposures at Sites 3 and 4 and is probably continuous with that exposed at Site 2.

Site 8.--Old pit in magnetite gneiss. No anomalous radioactivity.

Site 9.--Old caved working adjacent to Site 7 on the west. No anomalous radioactivity or mineralization exposed. Appears to have been sunk above shear zone.

Site 10.--Outcrop of magnetite gneiss. No anomalous radioactivity.

Site 11.--Old caved working 200 feet or so south and down hill from Sites 1 through 10. No anomalous radioactivity and no mineralization apparent on dump.

Site 12.--Abandoned incline 50 feet northwest of tent and on same prominence. Extends down dip at about 35° to the northeast for approximately 30 feet then levels off for the final 15 feet. Brecciated zone some 18 inches thick is well exposed in lower part of the workings. While no anomalous radioactivity was noted several specimens showing secondary copper minerals were found on the dump. The structure here could be a continuation of those exposed in Sites 2, 3, 4, and 7 and as such it would support the idea of a split.

Site 13.--Old prospect pit. Shear zone in magnetite gneiss and schist showed flecks of autunite. Several shears and minor displacements are implied and could prove to be the junction of the implied split and the main reef. Grab sample assayed 0.132 percent eU and 0.184 percent Chem.

Site 14.--Small pit showing no radioactivity or mineralization.

Site 15.--Old pit and shallow incline are slumped in. Radioactivity in the order of 0.10 MR/Hr. has been detected. Grab samples of breccia showing secondary copper minerals assayed 0.336 percent eU and 0.385 percent Chem. These came from a pile of samples on the dump that were collected some time prior to the present day interest in uranium.

Site 16.--Partially filled incline shows 0.10 MR/Hr. radioactivity and secondary copper minerals on dump. Shear zone with chrysocolla, malachite and azurite is exposed near the portal.

Site 17.--Partially filled incline 15 feet south of Site 16 shows secondary copper minerals in brecciated material on the dump but no anomalous radioactivity.

Site 18.--Prospect pit covered by large boulder weighing several tons. Upon removal of boulder copper minerals were found filling a silicanate breccia reef trending N. 32° E. and dipping 70° to the east. Since this pit lies 15 feet approximately south-southwest of the Site 17 incline a continuous structure is implied. Anomalous radioactivity appears to emanate from an ocherous dull yellow mineral closely associated with the secondary copper minerals. Primary copper in the form of tenorite, bornite and chalcopyrite was found in the brecciated zone.

Site 19. - Abandoned adit extends approximately 50 feet east in an apparent effort to intersect the breccia reef at Sites 16, 17, and 18. 0.10 MR/Hr. radioactivity was detected in a zone of weathered gneiss about 15 feet in from the portal. The only mineralization appears to be Precambrian sulfides within the typical gneiss.

Site 20. - Very old workings include a caved adit and an incline above, near a small intermittent stream and several hundred feet down hill to the northwest of sites 13 through 19. No radioactivity or mineralization of consequence has been observed, however, a large altered rock in float several hundred feet downhill was slightly radioactive.

Site 21. - Two shallow pits show 0.06 MR/Hr. radioactivity and no mineralization.

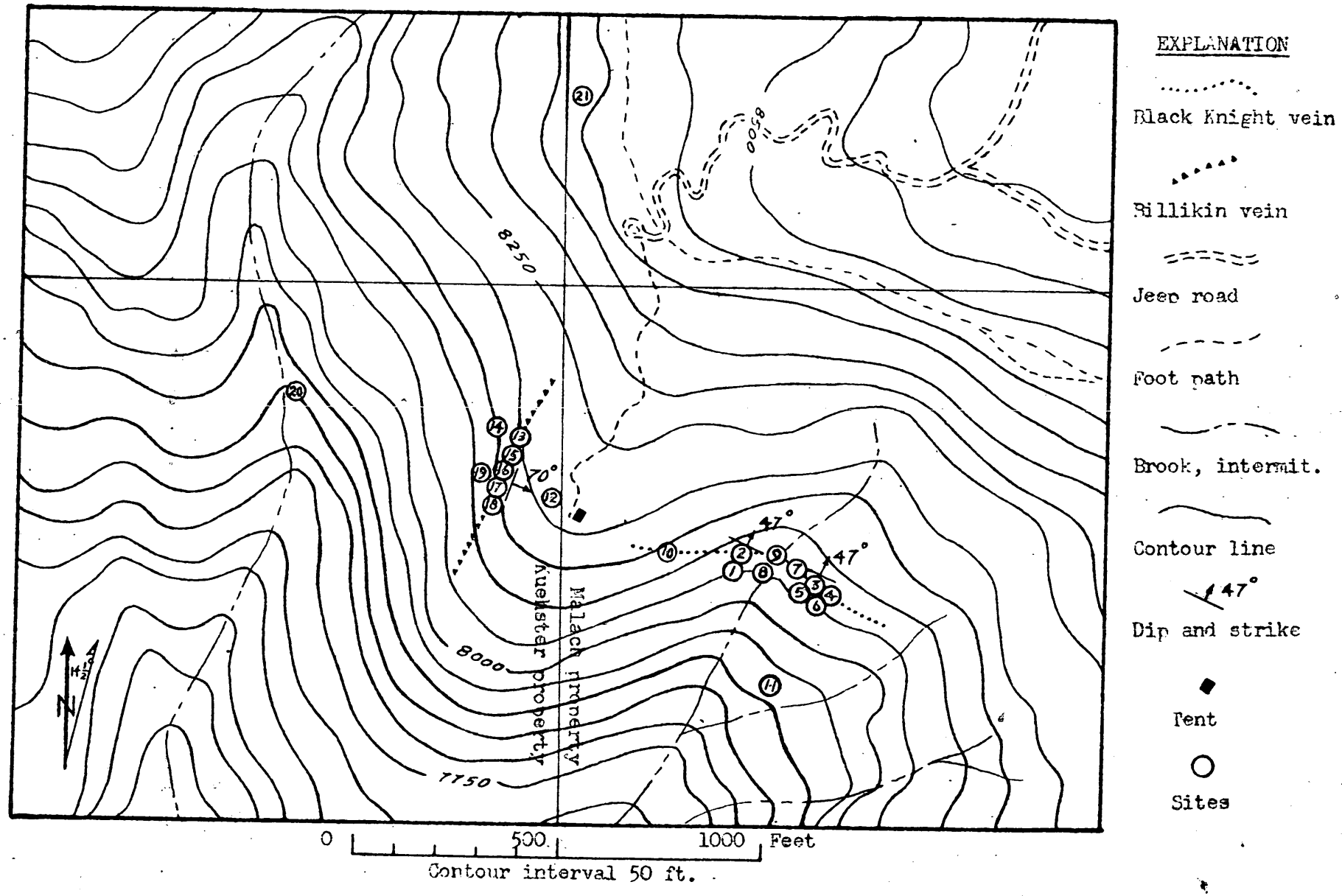


Figure 2. Geologic map of mineralized area (120 acres).

CONCLUSION

Because the structural trends of the Black Knight Lode parallels those of the Bonzo Lode 4½ miles away a family of northwest-southeast faults is indicated. This was further supported by observing strikes and dips in old prospects in Bear Gulch a mile southwest of the Bonzo Lode. Even though no uranium mineralization has been found in these old prospects the area east and west and between the uranium discoveries may reveal mineralized veins upon careful investigation. The presence of iron minerals as well as copper appears to be a favorable sign. It was the tracing of magnetite gneiss float to its source that led to the discovery of the Black Knight Lode.

Another point of interest is that the outcrop of the Black Knight vein is approximately 2,400 feet above that of the Bonzo Lode. Both lodes contain pitchblende and associated secondary minerals. There is reason, therefore, to speculate that the Black Knight pitchblende persists to a depth of 2,400 feet. However, the exact nature of the fault has not been determined. At Site 3 it was noted that there is a roll in the dip and slickensides parallel the dip. If these striations indicate the direction of major movement and if the walls of the vein continue to roll or undulate at depth then favorable spaces for ore deposition can be expected.

The commercial potentials of the Black Knight and Billikin Lodes can be further surmised from a number of additional facts. There are two structures striking at approximately right angles to each other and dipping toward each other. Additional structures are indicated. Both of the main structures contain uranium. Their point of intersection could constitute a favorable ore body. The Black Knight vein contains primary pitchblende and the wall rock contains secondary uranium minerals, in some places in sufficient quantities to constitute ore. The Billikin vein, being brecciated, silicified, and containing copper and uranium minerals, is similar to the initial discovery made by Fred Schwartzwalder on Ralston Creek. The Ralston Creek mine is now considered to be the largest vein-type uranium deposit in the United States (U. S. Atomic Energy Commission.)

The deposits of the Platte Canyon area extend the occurrence of vein-type uranium in the foothills about 20 miles further south from the Golden Gate Canyon area. The foothills deposits along with recent discoveries under similar environments near Shawnee and Idledale, Colorado may reveal that uranium deposition tends to favor areas outlying the main Front Range Mineral Belt, possibly because of hydrothermal gradient decreasing away from the belt as suggested by some members of the U. S. Geological Survey.

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PROPOSED EXPLORATION PROGRAM

The "target" is to test the strength, persistency, and tenor of the Black Knight and Billikin structures, and to determine their structural relations. Due to the foliated and jointed nature of the country rock and the unconsolidated nature of the mineralized zone it is believed that better information could be gained and more efficient exploration accomplished through working underground rather than by core drilling from the surface.

It is suggested that exploration be conducted in two phases, the second phase being contingent upon the results of the first phase. The phases, with time and cost estimates, are outlined as follows:

Phase I

A. Construction of approximately 3000 feet of one-way access road by grading with a bull-dozer and with a minimum of rock blasting. 2 months - $6,212.06

B. Cross cutting for approximately 350 ft in a N 24 E direction from a point some 50 ft below Site 8 in order to intersect the Black Knight fault approximately 160 ft below the surface. 6 months - $14,184.68

C. Drifting on a general heading of N 66 W for approximately 350 ft along the Black Knight structure. 6 months - $14,184.68

Total time and cost estimate for Phase I - 14 months - $36,576.42

Phase II (A, B, or C depending upon the results of Phase I)

A. Sinking a 100 ft winz - structure and mineralization stronger at depth - 4 months - $8,000.

B. Driving a 100 ft raise - structure and mineralization strengthen up dip - 4 months - $8,000.

C. Continue drifting in a northwesterly direction until the Billikin shear zone is encountered at approximately 450 ft beyond the end of Phase I, Part C - structure and mineralization strengthen as the Billikin shear zone is approached - 8 months - $18,000.

COST ESTIMATE
ROAD - PHASE I-A

Labor, supervision, rentals, material- basis: 2 months

Bulldozer, D-8 @ 100.00/day	4,000.00
Jackhammer operator, @ 20.00/day	800.00
Supervision and surveying, @ 500.00/mo.	1,000.00
Rentals, compressor, jackhammer, and hose (refer pg.16)	157.06
Dynamite, caps, fuse, steel, and bits	140.00
Gas and oil	115.00
TOTAL	$6,212.06

Cost of the proposed 3,000 foot road (phase I-A) constructed over a 2 month period will amount to $6,212.06 or $2.08 per foot.

COST ESTIMATE

DRIFT AND CROSSCUT - PHASE I B&C

Equipment rentals - monthly basis

1	Gardner-Denver, S-33, jackleg	80.00
1	Air compressor, 125 cfm	160.00
	Water and air hose	8.00
	Total per month	248.00

Equity of 70% on above material, therefore allowable charges are:

0.3 X 248.00	74.40
1/60 X 0.7 X 248.00	4.13
Allowable cost	78.53

TOTAL COST FOR A 12 MONTH PERIOD 942.36

Labor, supervision, and professional services - monthly basis

1	Miner @ 18.00 per day	360.00
1	Muckér @ 15.00 per day	300.00
	Surveying and supervision	425.00
	Geologist	450.00
	Total	1,535.00

TOTAL COST FOR 9 MONTHS OF 12 MONTH PERIOD 13,815.00

Non-recoverable equipment and expendable materials

2	Ore cars, 1 ton, 16 cu. ft., @ 400.00 ea.	800.00
1	Exhaust fan, 3000 cu. ft./min.	400.00
1	Gardner-Denver oiler	23.00
1	Water tank, storage, 500 gal.	150.00
700 ft.	10 ft. lengths, $1\frac{1}{2}$ in. pipe plus reducers, elbows, and valves @ 25.35/100 ft.	177.45
800 ft.	10 ft. lengths, $\frac{1}{2}$ in. pipe plus reducers, elbows, and valves @ 20.00/100 ft.	160.00
1500 ft.	10 ft. lengths, 8 lb. rail plus fishplates, ties, and spikes @ 75.00/100lb.	750.00
700 ft.	Ventilation conduit, 16 in. dia. @ 35.25/25ft. .	987.00
	3 L's @ 18.35 ea.	55.05
120	Timken, $1\frac{3}{4}$ carbide insert bits @ 17.35 ea. . .	2,082.00
	Drill steel and steel loss, ref. Peele(1924) 0.70/ft. X 2 X 700	490.00
	Fuse and caps, ref. Peele(1924) 0.86/ft. X 2 X 700	602.00
85	50 lb. boxes, 40% dynamite @ 11.50/50lb. basis: 120 6-ft. rounds, 35lb. dynamite/round .	977.50
700 ft.	Timbering @ 4.00/ft.	2,800.00
Gasoline and oil:		
	Gasoline, $4\frac{1}{2}$gal./hr. @ 1800rpm, consumption is 9360 gal. @ 0.30/gal.	2,808.00
	Oil, 0.5pt./8hrs. @ 1800rpm, consumption is 125 pts. @.40/pt	50.00
Miscellaneous small tools and accessorys		300.00
	TOTAL	13,612.00

COST ESTIMATE - TOTALS

DRIFT AND CROSSCUT - PHASE I B&C

RENTALS	942.36
LABOR, SUPERVISION, AND PROFESSIONAL SERVICES	13,815.00
NON-RECOVERABLE EQUIPMENT AND EXPENDABLE MATERIALS . . .	13,612.00
GRAND TOTAL	28,369.36

COST PER FOOT OF ADVANCE

$$\frac{28,369.36}{700} = 40.527$$

The cost for drifting 700 feet at a rate of 3 feet per day over a period of 12 months is herein calculated to be $40.527 per foot of advance.

AVAILABILITY OF WATER

Water for exploration will have to be hauled in by truck from Deer Creek and stored in a tank above the portal. Water for development and mining can be obtained by tapping springs, trucking in, or by raising from Castro Creek in Kennedy Gulch. Hauling water is not only inconvenient, it is expensive. Springs in the area are unreliable but a strong source of water may be found by drilling. Raising water approximately 1000 ft. from Castro Creek would be expensive but it would be a dependable source.

AVAILABILITY OF POWER

The Intermountain Rural Electric Association has a 220 volt power line extended to cabins approximately 1200 ft. from the proposed portal. Extension of the lines to the proposed workings would be a relatively simple matter.

SHIPPING POINT

The nearest railroad shipping point is Littleton, Colorado, a suburb of Denver. It is approximately 21 miles by road from the proposed adit to the Littleton railhead.

QUALIFICATIONS OF APPLICANTS

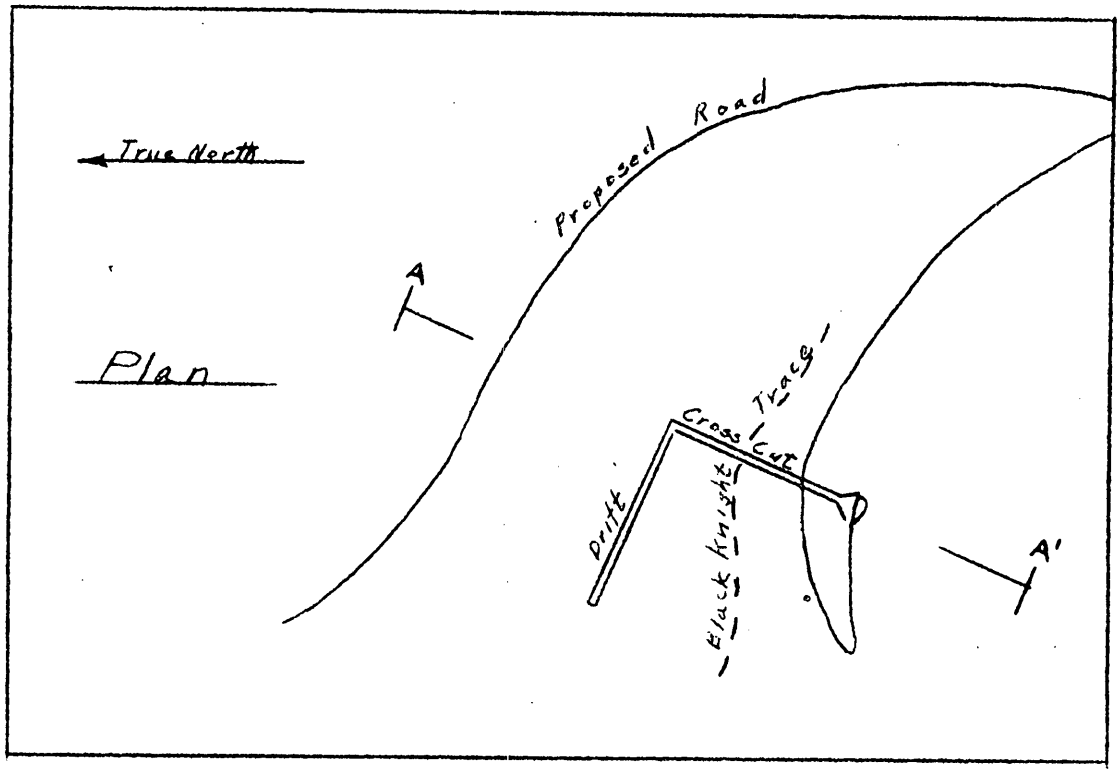
The applicants intend to share 25% of the exploration costs by full time participation in the proposed exploration program.

Both applicants, Caleb V. Haynes Jr. and Glen A. Boyd Jr., expect to graduate from the Colorado School of Mines in late May, 1956 with degrees of Geological Engineer, Mining. Their curriculum has included several courses in mining methods and mining principles and evaluation.

Mr. Boyd has a wife and two daughters. He has served two years in the U. S. Marine Corps, has five years banking experience, and has worked for the Golden Fire Brick Company as a fireman.

Mr. Haynes has a wife and a daughter. He has served four years in the U. S. Air Force and has worked as a hoist and compressor operator, mine track layer and roustabout at the Smuggler Mine, Silver Plume, Colorado.

The applicants feel certain that they can carry out the proposed exploration in an efficient and bussiness-like manner.



Horizontal Scale 0 500 100 feet Verticle Scale

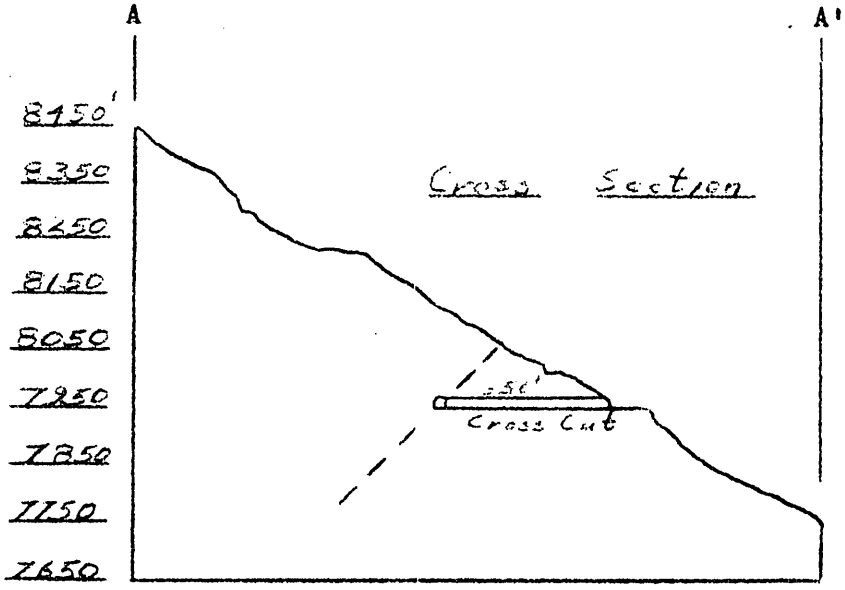


Figure 3. Plan and cross section of Phase I exploration program.