(R[illegible]F-103
[illegible] April 1952)

UNITED STATES DEPARTMENT OF THE INTERIOR
DEFENSE MINERALS EXPLORATION ADMINISTRATION

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

Department of the Interior
Defense Minerals Administration
RECEIVED
DEC 10 1954

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. 3602
Metal or Mineral URANIUM
Date Received
Estimated Cost $37,650
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:

Western Uranium Mining Co. Inc.
139 North Virginia Street
Reno, Nevada.

(*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

See attached

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

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

(*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

(*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 w[illegible]er you require its return to you. See attached.

(*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.

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

(*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.

(*c*) The work will start within ..... days and be completed within ..... 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.

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:

(*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.).

(*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.

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

(*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.

(*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.

(*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.

(*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.

(*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)?

(*b*) How do you propose to furnish your share of the costs?

☐ 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 December 10, 1955, 195...

Nubian Uranium Mining Corporation Inc.
(Applicant)

By L. L. Jones

Secretary-Treasurer

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

Vivian Uranium Mining Co. Inc.
139 North Virginia Street
Reno, Nevada.

Form
[illegible]-102

[illegible] DISCLOSURE OF THE [illegible]

[illegible] SECURITIES ADMINISTRATOR

1. [illegible]

(a.) Vivian Uranium Mining Co. Inc.,

139 North Virginia Street

Reno, Nevada.

(b.) A Corporation, incorporated in the State of Nevada.

(c.) Mr. Bert C. Austin, President

[illegible] Mills Bldg.,

San Francisco, California.

Mr. Charles J. Ayres, Vice-President and Director

Shasta County, California

Mr. Lynne A. Smith, Secretary-Treasurer

[illegible] Lowell St.,

Palo Alto, California.

(d.) Not Applicable

2. [illegible] RIGHTS

(a.) The land for which the exploration project is being proposed was obtained under lease, by Mr. Lynne A. Smith, from the Sanson Uranium Corporation, a partnership, which obtained the ground as a Utah State School lease. Information relative to the

Vivian Uranium Mining Co. Inc.,

Form
[illegible]-162

139 North Virginia Street

Reno, Nevada.

agreements between Smith and the Vanson Uranium Company will be found in attached legal documents. Complete descriptions of the parcels of land leased by Smith are also included.

(b.) None

(c.) Leases under contract; see attached legal documents.

(d.) See above

(e.) The properties under consideration are Utah State School leases subject to a 12½ royalty to the State of Utah.

(f.) Not applicable

4. PHYSICAL DEVELOPMENT

(a.) Not applicable, except for geologic study.

(b.) None

(c.) See attached geologic report

(d.) The area can be reached by traveling 26 miles south of the Town of Moab, Utah over U. S. Highway 160; thence in an easterly direction over ~~xxx~~ Utah State Highway 46 for a distance of about 27 miles to the properties under discussion. The Town of Moab is the nearest shipping and supply point.

(e.) An abundance of materials, supplies and manpower is available in the Town of Moab, Utah.

Vivian Uranium Mining Company, Inc.
139 North Virginia Street
Reno, Nevada.

Form
UF-102

5. [illegible] EXPLORATION PROGRAM

(a.) Uranium

(b.) The proposed program will be an exploration drilling program on the properties previously described. Reference to the drill hole map in the attached geologic report will show the relationship of the proposed drill holes to the property boundaries and to lithologic contacts. However, two of the proposed 8 holes will be designed to penetrate the salt beds and the Chinle member of the Chinle, while 6 of the proposed 7 holes will be designed to explore the Moenkopi member of the Chinle formation.

A total of 8 holes are planned. Two of the holes will average 1,000 feet in depth and 6 of the holes will average 1,500 feet in depth.

(c.) Work will start within two months and be completed within 6 months.

(d.) Mr. Bert R. Austin, President of Vivian Uranium Mining Co. Inc., to also President and General Manager of Idaho-Maryland Mines Corporation, [illegible] Bldg., San Francisco, California. Operation of the company mine at Grass Valley, California to under his direction.

Mr. L. A. Smith, Secretary-Treasurer, to a Mining Engineer, and was manager of the Crescent Coalfield mine for the past 8 years. He was a partner in the

Vivian Uranium Mining Co. Inc.,
139 North Virginia Street
Reno, Nevada.

Form
UR-102

operation of the Castro Chrome mine in San Luis Obispo County, California. He was the manager of the ~~Mariposa~~ McKeen gold mine in Mariposa County, California. Direction of the program will be under the direction of the above officers of the Company while actual field work will be performed by a geologist familiar with the Plateau and uranium deposits.

6. Estimated Cost

(a.) Total estimated project footage is 11,400 feet, for which an overall flat rate bid of [illegible].00/ft has been received from the Frank Drilling Company of Reno, Nev. About 2,000 feet are of the estimated total will be core diamond drilling.

TOTAL COST 11,400 feet $ 37,050.00

Some road work and drill site construction will be required also, and the time is estimated at 6 days @ $100.00/day $ 600.00

TOTAL ESTIMATED COST $ 37,650.00

(b-h) Not applicable, or None

7. (a.) Vivian Uranium Mining Co. Inc., has deposited $15,000.00 in escrow with the Security Agency and Trust Co. to be used to pay their share of costs in the event a loan is granted. (Please see

Western Uranium Mining Co., Inc.
139 North Virginia Street
Reno, Nevada.

Form
MF-102

attached statement from the Nevada Agency and Trust Company.)

CERTIFICATION

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

Dated: December 15, 1956.

WESTERN URANIUM MINING CO., INC.

By [signature]

GEOLOGIC REPORT ON THE NORTH BIG INDIAN MESA - LISBON VALLEY DISTRICT, SAN JUAN COUNTY, UTAH.

T. 29 S., R. 23 E.

SLBM

By

RICHARD A. BEECHAN JR.

Consulting Geologist
Moab, Utah.

October, 1954.

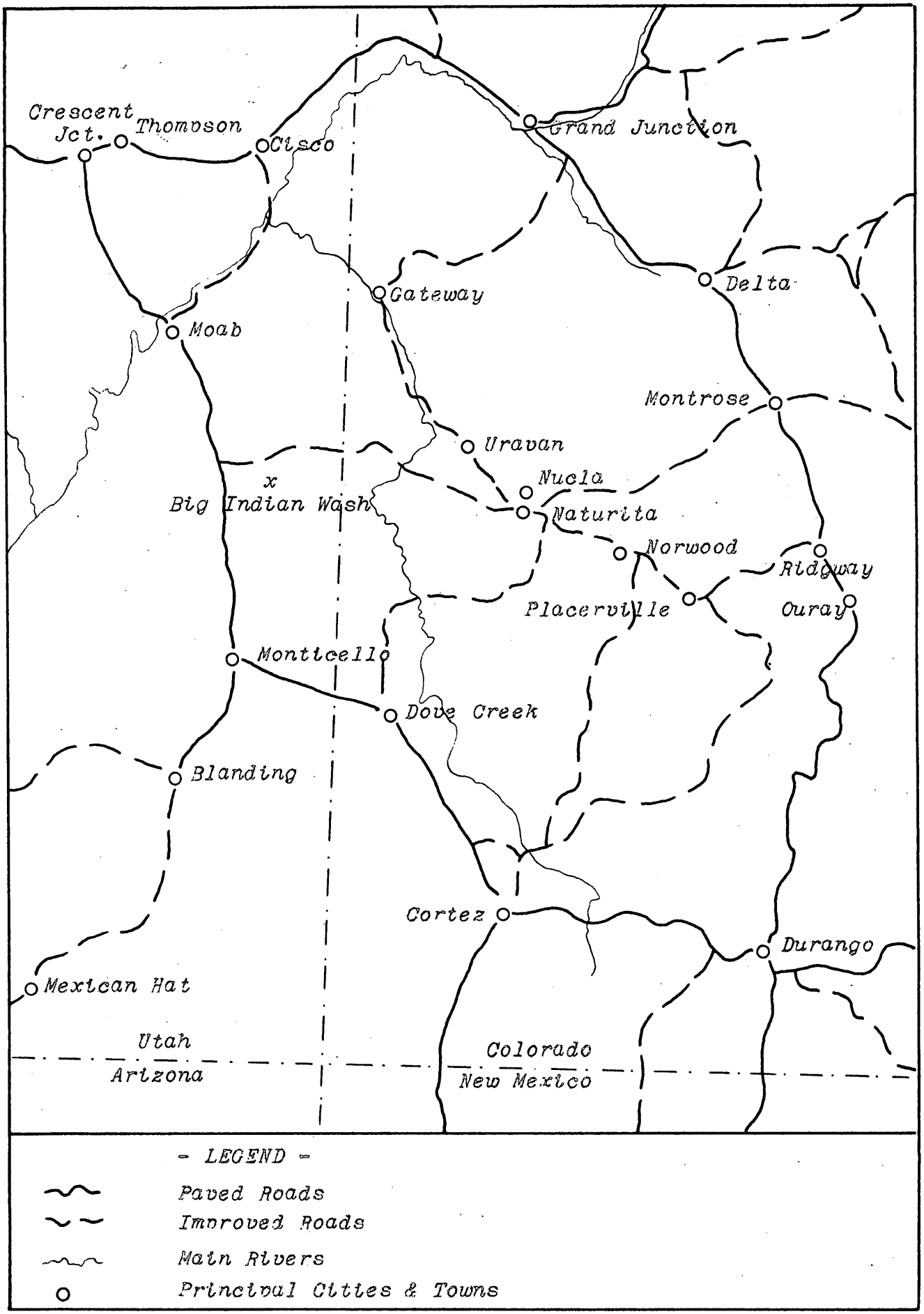

FIGURE -1- INDEX MAP, COLORADO PLATEAU AREA

November, 1954.

Mr. L. A. Smith
Mining Engineer
420 Lovell St.,
Palo Alto, California.

Dear Mr. Smith:

The following is a geological report on the uranium possibilities of the North Big Indian Wash-Liebon Valley district, T. 29 S., R. 23 E., SLM, San Juan County, Utah, with specific reference being made to Utah State School Leases No. 5947, 5949 and 5949, Section 2 and 3, T. 29 S., R. 23 E.

Pursuant to your instructions I have included recommendations for further development of the properties.

Sincerly,

RICHARD A. BRIGHAM JR.

Consulting Geologist

RB/rg

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INTRODUCTION

A geologic reconnaissance of the Big Indian Wash-Lisbon Valley District was carried out during the latter part of October, 1954, at the request of Mr. L. A. Smith of Palo Alto, California.

The North Big Indian Wash- Lisbon Valley District is located within T. 29 S., R. 23 E., SLB&M, San Juan County, Utah, which is in the southeastern part of the state.

The objectives of the reconnaissance were :

1. To examine those parts of sections 2 and 3, T. 29 S., R. 23 E., embraced within Utah State School Leases numbered 5947, 5948 and 5949.

   Lease No. 5947, Lot 2, section 2, T. 29 S., R.23 E., consisting of 40 acres.
   Lease No. 5948, NE/SE, section 2, T. 29 S., R.23 E., consisting of 40 acres.
   Lease No. 5949, NW, section 2, T. 29 S., R. 23 E., consisting of 160 acres.

2. To determine whether or not the properties were located in a district considered to be geologically favorable for the occurence of uranium ores.
3. To assess the possibilities of production of commercial quantities of uranium ores from the district.
4. To determine whether or not further exploration

and or development work on the properties was warranted.

The portions of the Utah State School Leases under consideration in this report are located immediately north of the Big Indian Mining District (unorganized) in San Juan County, Utah.

The area can be reached by traveling 24 miles south of Moab Utah on U. S. Highway 160, a good paved road; thence in an easterly direction over Utah 46, a good gravelled road for a distance of about 2½ miles to the properties. (See attached map)

PAST AND PRESENT MINING AND EXPLORATION ACTIVITY, PRIVATE AND GOVERNMENT

The only record of production from the area east of the Lisbon Valley Fault is from a Copper deposit in the Cretaceous Dakota formation, from which the Ohio Copper Company mined an unknown amount of copper carbonates and sulfides during the first world war.

No record of any uranium production from the area east of the fault can be located, but mines are in operation several miles to the east near La Sal, Utah, and in the Gray mesa district. These mines, the Yellow Bird, and the Seven have been good producers of uranium ores.

Within the district, between the town of La Sal, Utah and the area under consideration , the Lester-Logan Company of Arizona conducted a modest drilling program on the Evans property in sections 31 and 32, T. 29 S.,

R. 24 E. All holes were cored in the Cretaceous Mancos Shale and Dakota sandstones and presumably bottomed in the Salt Wash sandstone member of the Jurassic Morrison formation. Results of the drilling indicate the presence of several mineralized horizons within the Salt Wash member of the Morrison and within the lower part of the Brushy Basin member of the Morrison. It is anticipated that this drilling will be continued in the furture and that more care will be taken in saving cores from the holes.

The Continental Uranium Company of Grand Junction, Colorado is conducting mining operations in the Rattlesnake area which is located in section 12, T. 29 S., R. 23 E., SLBM, San Juan County, Utah. Several development drifts have been driven into the lower sandstone member of the Salt Wash and ore is being shipped. Results of recent core drilling is reported to be excellent. The average grade of the ore is reported to be .40% uranium and 2.00% vanadium.

Mr. Walt Gramlich of Moab, Utah is conducting mining operations in the Blue Jay mine in the Browns Hole district about 2 miles north of the areas under discussion. Production is from the upper sandstone lenses of the Salt Wash. One load of ore, recently shipped, assayed 6.0% uranium and was valued at $4,000.00. The ore at the Blue Jay mine is found in logs, rolls and small pockets, and the grade is very high.

South of the school section under discussion lies the famous Big Indian Wash District and the Mt Vida mine of Charles Steen, the San Juan shaft of the Cal Uranium Company, the Continental Uranium Company mine in the southern part of the wash, the Hudson-Homestake mine, the Little Beaver-Homestake mine and the Standard Uranium Company mine. All production in the Big Indian Wash District is from the Moenkopi member of the Triassic Chinle formation. Average grade of the ore is .25 % uranium and 1.50 % vanadium. (Only the ores from the Steen mine, the Continental Uranium Co. mine and from the Homestake-Little Beaver mine assay in vanadium. All other production is essentially vanadium-free.

In addition to the operating properties in the Big Indian Wash District, several new deposits of ore have been blocked out in the central (north central) part of the wash northwest of the Cal Uranium Company San Juan shaft on what is known as the Rado and the Ruddock-Daniel properties. In addition to these discoveries, plotted on the attached map, the Homestake Mining Company of San Francisco, California has blocked out a deposit of 71,000 tons on the Peace and the Cherib claims, north of the Wash property. Thus, it would appear that the properties in the northern part of the District are favorable for the occurence of deposits of uranium ores.

Although the United States Atomic Energy Commission has established a field camp in the Big Indian Wash District, it is not anticipated that any immediate plans have or will be made for the north Big Indian Wash area.

The Commission has established this field camp to serve private individuals and corporations conducting exploration programs in in the area, and as a collecting station for information relative to the geology of the district.

GEOMORPHOLOGY AND CLIMATE

The elevation within the North Big Indian Wash-Lisbon Valley District ranges from 6,400 on the Morrison formation near the Redd Ranch, to 7,000 feet on the Dakota Sandstone near the Browns Hole District. The lease properties, parts of Utah State School Sections, are located on the edge of the La Sal Mountain alluvial fan, and between small mesas capped by Dakota Sandstone.

The district is bisected by the Lisbon Valley fault, and shows the amount of displacement along the fault by having the Dakota Sandstone and the Brushy Basin member of the Morrison formation facing each other across the fault.

In the Big Indian Wash-Lisbon Valley areas the streams are subsequent, intermittent and in a stage of early maturity. After leaving the valleys, the streams are consequent and of late maturity. Drainage for the area as a whole displays a dendritic pattern. The northern part of Big Indian Wash drains westward through Big Indian Wash to Hatch Wash, thence to the Colorado River. The streams in the area are in a stage of downcutting due to rejuvenation.

On the east side of the Lisbon Valley Fault there are no permanent land forms in the immediate area. The surface is a flat saucer shaped area unbroken by outcrops. The area gets

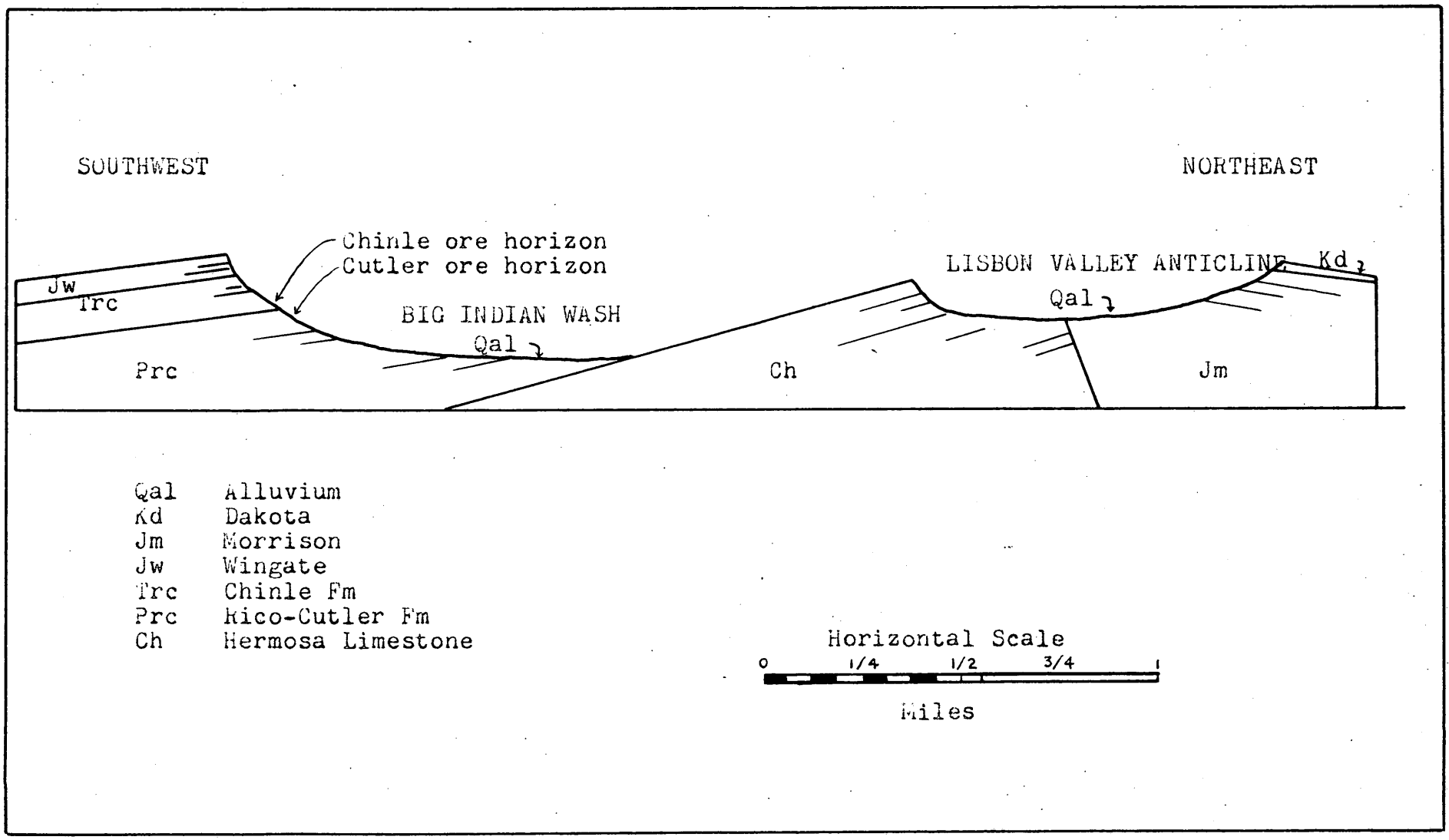


FIGURE - 2 - GEOLOGIC CROSS SECTION: LISBON VALLEY ANTICLINE IN THE VICINITY OF UTEX AND BIG BUCK MINES, BIG INDIAN WASH, SAN JUAN COUNTY, UTAH.

its shape from the prefaulted Lisbon Valley Anticline on the South and the intrusive La Sal Mountains bending the sediments upwards to the north.

A small, year round creek drains the Lisbon Valley area westward and forms a dendritic drainage pattern in a stage of early youth. It is used for stock, irrigation and drill water.

The climate of the North Big Indian Wash-Lisbon Valley area is semi-arid with moderate amounts of rain and snow. Precipitation amounts to about 20 inches a year. Working conditions are good throughout the year.

MAGMATIC STRUCTURES

Big Indian Wash is located midway between two major laccolithic intrusives: the La Sal Mountains and the Abajo Mountains, and approximately one mile east of the Lisbon Valley-Dolores anticline.

The Lisbon Valley-Dolores anticline trends northwest from a point approximately 20 miles west of the San Miguel Mountains where it joins the Gypsum Valley anticline, to a point 20 miles east of the Upheaval Dome in the Inter-River area northwest of Moab, Utah.

Determination of the attitude and displacement of the Lisbon Valley fault is difficult due to the presence of alluvium in the fault zone. However, present field evidence from cross sections and drill hole data show the fault to be hinged in the northern part of Big Indian Wash, with a displacement of about 200 feet in the vicinity of the properties under discussion.

A pronounced joint system is present in the Big Indian Wash District and study of aerial photographs indicates that

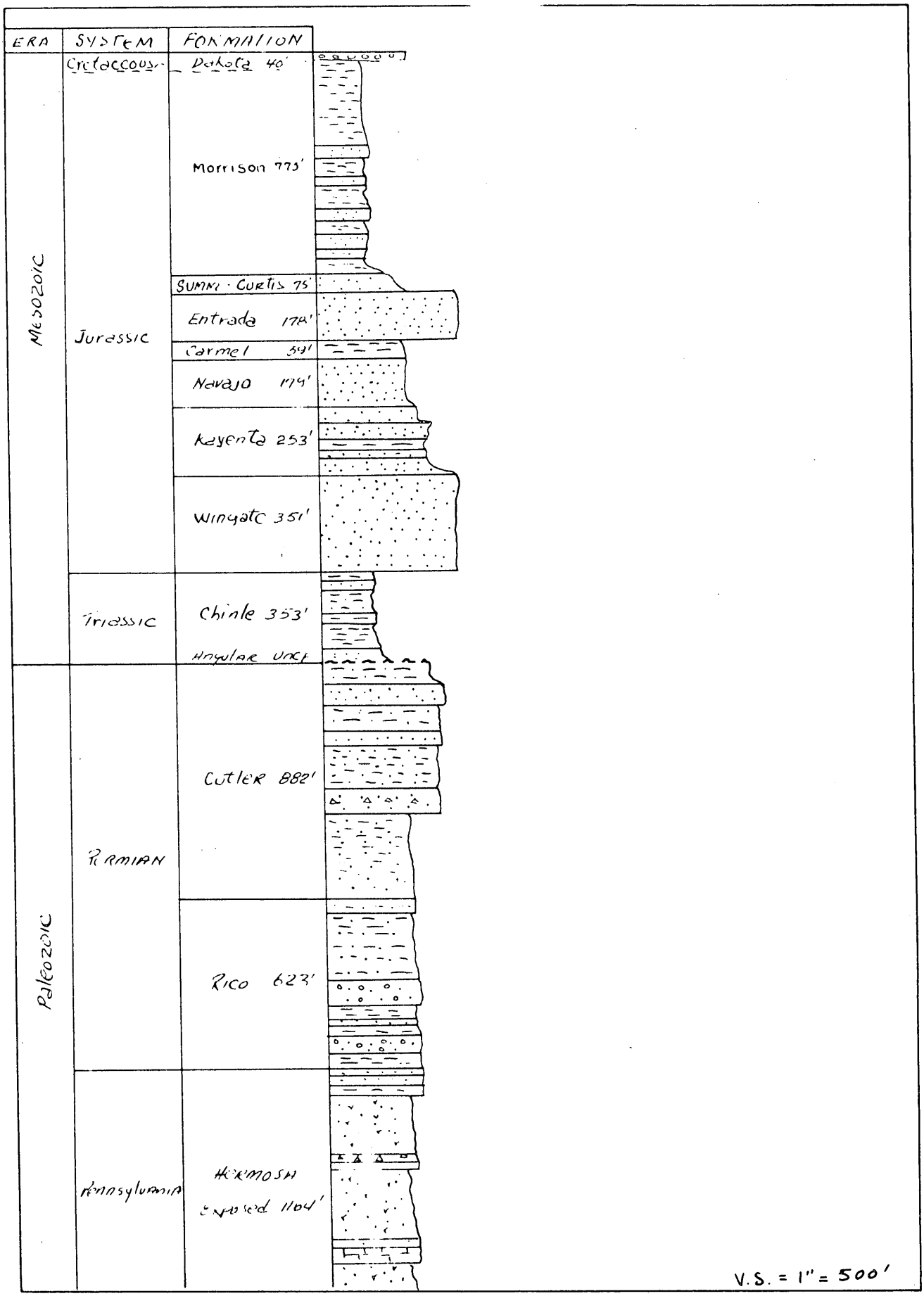


FIG. - 3 STRATIGRAPHIC SECTION, SOUTH BIG INDIAN WASH and LISBON VALLEY, SAN JUAN COUNTY, UTAH.

in the northern part of the district where private development is currently centered, that is near Section 23 and 24 T. 29 S., R. 23 E., the joints strike in a northwesterly direction. In several places well-developed conjugate joint sets have been developed and field evidence indicates that these joint sets are intimately associated with mineralization.

On the east side of Lisbon Valley Field Stereoscopic study of aerial photograph shows some preference of drainage for lithologic changes, but indicates no pronounced fault or joint system. However, the Dakota Sandstone in the vicinity of the Copper Mine is badly fractured and there were small compressional faults.

GEOLOGY

Previous geologic reports on the Big Indian Wash-Lisbon Valley areas are:

1. Interim Report on the Examination of Big Indian Wash Uranium Properties, San Juan County, Utah. April, 1949, by Charles A. Hazer, USAEC.

   This report recommended that the Pre-Salt Wash formations in the Big Indian Wash District be studied in detail.

2. The Uranium Deposits of Big Indian Wash, by George P. Dix Jr., USAEC.

3. Bureau of Mines Information Circular 7[illegible], Uranium Operations of the Utex Exploration Co. in the Big Indian District, San Juan County, Utah, by Steen, Dix, Rozen and McLellan, October 1[illegible], 1[illegible].

   This report briefly described geology, mining operations and the mineralogy of the Utex Mine.

4. Geologic Report on the Big Indian Wash District, by Cotchman, R., McLellan, J., and Stoll, I., USAEC (Unpub) 1954.

This report outlined the geology and stratigraphy of the Big Indian Wash District.

5. Geology of the South Big Indian Wash-North Itsbon Valley areas, by Tetchman, R., and Kelellen, E. for the Pathfinder Corporation, 1954.

This report outlined the geology and assessed the possibilities of production of commercial quantities of uranium ores from the South Big Indian and the North Itsbon Valley Districts.

The rocks exposed in the North Big Indian Wash-Itsbon Valley District range in age from the Pennsylvanian Hermosa limestone to the Cretaceous Mancos shale. ~~The prime ore-bearing horizon on the northeast side of the Itsbon Valley fault in the area covered by Lease No. 5947 is the Salt Wash member of the Jurassic Morrison formation. The prime ore-bearing horizon on the west side of the Itsbon Valley fault in the Big Indian Wash area is the Moenkopi member of the Chinle formation.~~ this out this o/z. However, in the northern part of the Big Indian Wash-Itsbon Valley District the fault hinges and the displacement is approximately 200 feet with the favorable horizons being both the Moenkopi member of the Triassic Chinle formation at a depth of about 12 to 14 hundred feet and the Salt Wash member of the Jurassic Morrison formation at a depth of from 2 to 5 hundred feet.

ECONOMIC GEOLOGY

In the School Lease areas under discussion, two potential ore producing horizons must be considered. First, the area covered by School Lease No. 5947, on the northeast side of the Itsbon Valley fault, in School Section 2, is capped by the Brushy Basin member of the Jurassic Morrison formation. Therefore in this area, the most important potential producing horizons are:

1. The Salt Wash Member of the Jurassic Morrison formation

2. The Mossback member of the Triassic Chinle formation.

Drilling depths to the Salt Wash member of the Morrison formation will average between 200 and 600 feet. Mineralization is of the carnotite-tyuyamunite type and carnotite is the principal vanadium mineral found in the district. Examination of Salt Wash deposits in and about the district indicate that the type of deposit to be expected would be the "log" or "roll" type. In drilling for this type deposit drill hole spacings must be closer than normally used to delineate favorable ground within the Salt Wash member of the Morrison formation.

The second important producing horizon to be considered is the Mossback member of the Triassic Chinle formation. Drilling depths to the Mossback in this area would average between 1600 and 1800 feet. Mineralization is of the uraninite type and it is doubtful if vanadium minerals would be encountered. Examination of other Mossback deposits in and about the Slickrock Wash District indicate that the type of the deposit to be expected would be the large lenticular type of deposit probably in excess of 1,000 feet long in one direction and in excess of 300 feet long in the second direction. In drilling for this type deposit, drill hole spacings can be further apart than normally used to delineate favorable ground, say for instance, in Salt Wash drilling.

Lease ground 5042 and 5043 (See attached map) is for the part located west of the Hidden Valley fault, but as has been

noted the fault hinges in this area and the displacement is of the order of 200 feet. In the major part of lease areas 5040 and 5949 conditions prevail which are very similar to those in Lease Area 5947. However, in the southwestern part of Lease Ground 5949 and 4149 it is to be noted that Jurassic entrada sandstone crops out. Thus indicating that the only favorable horizon would be the Moenkopi member of the Chinle formation, the Salt Wash Member of the Morrison having been completely eroded out.

In the central part of the Big Indian Wash area, uranium mineralization is found in the lower part of the Triassic Chinle formation (Moenkopi), and in the upper part of the Cutler formation. The mineralized zone within the Chinle is exposed at the Utex Exploration Company Mine, southeast of the mine shaft. Mineralization within the Cutler formation is confined to 5 arkosic sandstone lenses. Four of these lenses are within a hundred feet of the Cutler-Chinle contact and one is within 150 feet of the contact.

A continuous outcrop of the Chinle ore zone, composed of sandstone, siltstone, and conglomerates, extends for [illegible] miles across the Big Indian Wash District and South into the lower part of the Ithon Valley. Mineralization also, has been noted on the rim in the extreme southern part of the area near the Serptee Berry Mine, and near the Western Mine Development Company Discovery. (Now Continental)

Four large ore deposits have been discovered and are operating in the area. They are: The Utex Mine, located in July 1951 by Charles Steen, The Col Uranium Company ore-

body located in the northern part of Big Indian Wash, and the Continental Uranium Ore-body located in the Southern part of Big Indian Wash. In addition, two other deposits are reaching the production stage, they are, the Homestake-Little Beaver deposit southwest of the Steen Mine, and the Homestake-Hudson deposit located north of the Cal Uranium Company shaft in the northern part of Big Indian Wash. Also in recent months several large deposits of uranium ore have been blocked out by the Homestake Mining Company on the Peace and Cherib Claim located in the northern part of Big Indian Wash about 3 miles southwest of the properties under discussion and by the Cal Uranium Co. of Moab Utah; the deposits lying between the Homestake-Peace and Cherib deposit and the Cal Uranium Company San Juan Shaft.

Study of the cores from the northern part of the Big Indian Wash area indicates that the ore, mainly disseminated uraninite, is confined to three closely spaced horizons within the Moenkopi member of the Triassic Chinle. The host rock consists of a gray, medium-grained, poorly cemented, micaceous sandstone, to a gray-green siltstone. The ore horizons are separated by 1 to 2 feet of barren mudstones and siltstones. These barren mudstones are composed of the Illite and Montmorillonite-type. The sandstone contains pyrite and marcasite. Muscovite is found along the bedding planes. Calcite is the most common cementing material, and is accompanied by iron oxide and vanadium minerals. Uraninite, the major ore mineral, is present in irregular pods and lenses within the host rock and as material between clastic grains.

On the east side of the Ibeson Valley fault there has been some small amount of work undertaken by private organizations to examine and to evaluate the Salt Wash member of the Jurassic Morrison formation. There has been some drilling done in the area but little information is available because no dill cores were taken and not many of the holes were gamma ray logged by the United States Atomic Energy Commission Geiger Ray logging unit. The holes drilled, were drilled to depths of 300 to 350 feet. The upper Salt Wash sandstone lenses are the major uranium and vanadium ore producing horizons in the area examined. The Cal Uranium Company of Moab, Utah has drilled three holes east of the Ibeson Valley fault and just a mile northeast of the Big Indian Copper Mine to depths of approximately 700 feet. Of the three holes drilled, one showed definite signs of mineralization at two different stratigraphic horizons: One within the Brushy Basin member of the Morrison and the other within the upper sandstone lenses of the Salt Wash member of the Morrison formation.

This information was obtained from the gamma ray log records of the United States Atomic Energy Commission. The records are available at the USAEC field camp in the Big Indian Wash District and the drill logs carry the prefix Moab 4, 5, and 7. From core examination of the other holes, some copper mineralization was seen in the lower Entrada sandstone, near the Big Indian Copper Mine. The cores of the Salt Wash taken from the drill holes by the Cal Uranium Company, indicates that

the host rock, that is the upper sandstone of the Salt Wash, is a gray to tan sandstone, carbonaceous in places and containing noticable amounts of clay. There were no chemical assays made on the mineralized parts of the core for uranium, vanadium or copper.

The Salt Wash exposed in the district as a whole is mineralized. The Vanadium Queen Mine, The Yellow Bird Mine, in the east, The Raven Group to the southeast, The Waterfall and Wilson groups to the south, The Rattlesnake group to the south, and the Yellow Circle and Browns Hole group to the northwest. The tonage of these deposits range between 2 and 10,000 tons.

In considering the favorable producing horizon in the area immediately surrounding the School Leases under consideration, it is to be noted that approximately one mile southeast of the properties the Rattlesnake Mine, owned by the Continental Uranium Mining Company of Grand Junction Colorado is now in the production stage and shipping ~~grade~~ uranium ore to the mill. Results of recent core drillings on the property are reported to have been excellent. North of the School Leases under consideration is the Browns Hole District at a distance of only 2 miles. Some mention has previously been made of the value of the ore shipped from the Browns Hole District.

Three miles southeast of the School Leases under consideration are the newly developed deposits of the Homestake Mining Company on the Peace and Cherib Claim and the newly developed deposits of the Cal Uranium Company on the Queen Ann, Split

Rock, Valley, Wall, and Neutron Claims, so it would seem logical to expect that some favorable results can be expected in the exploration of the School Section Lease herein considered.

CONCLUSIONS AND RECOMMENDATIONS

During the course of the geologic investigation of the North Big Indian Wash-Hidden Valley District the following conclusions were reached:

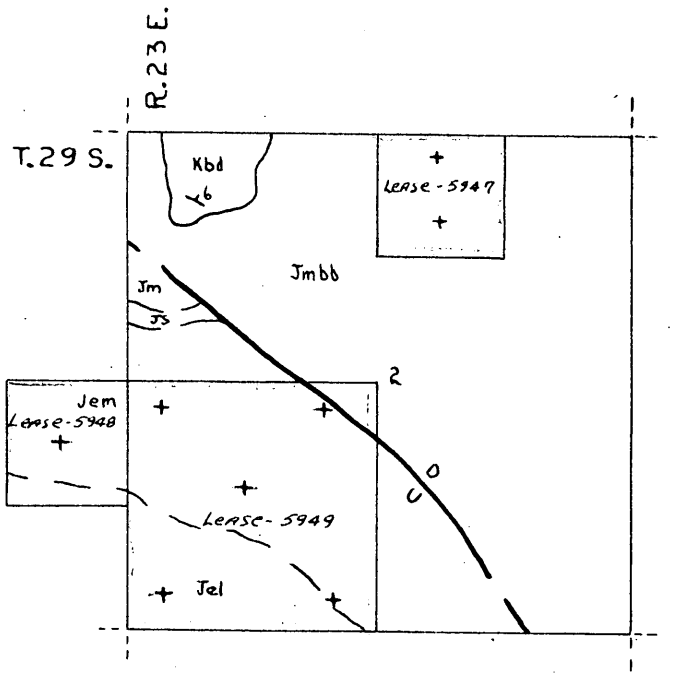
1. The areas investigated (legal description previously given) appear to be favorably located with respect to known uranium ore deposits and favorable producing horizons.
2. Drilling depths to the favorable Salt Wash horizon will range between 2 and 4 hundred feet.
3. Drilling depths to the favorable Moenkopi member of the Chinle formation will range between 1200 and 1400 feet, on leases 5948 + 5949; to 1800 feet lease 5947.
4. Favorable field evidence indicates that ore has been found in the Moenkopi member of the Triassic Chinle formation along the Hidden Valley fault as far northwest as drilling has progressed to the present time. (To a point about 2 miles southeast of Lease No. 5960.)

On the basis of the foregoing conclusions the following recommendations are made:

1. It is suggested that some consideration be given to the further exploration (by diamond drilling) of the property held under School Section Leases No. 5947, 5948, and 5949. It is recommended that drilling be done on 500 foot centers to delineate favorable ground within both the Salt Wash member

of the Jurassic Morrison formation and within the Mossback Member of the Triassic Chinle formation. If ore-bearing horizons are discovered within the Mossback member of the Chinle formation it is unlikely that closer spaced drilling will be necessary in the initial stages of the drilling program. However, if mineralization is located within the Salt Wash member of the Morrison formation it is recommended that drilling in favorable Salt Wash areas be done on 250 foot and then 100 foot centers for maximum coverage.

2. At the present time it is recommended that only about 8 holes be drilled on the properties with two of the ~~12~~ 8 holes being designed to explore both the Salt Wash member of the Morrison formation and the Mossback member of the Chinle formation and 6 being designed to explore the Mossback. It is further recommended that government aid in the form of a DMEA LOAN be requested to finance the drilling of these 8 holes.



DRILL HOLE LOCATION MAP

VIVIAN URANIUM MINING CO.

Big Indian Wash District

San Juan County, Utah.

0 1000 2000

SCALE in Feet

N

—KEY—

Kbd = Dakota Ss

Jmbb = Brushy Basin (mem. of Morr.)

Jm = Morrison fm (undiv.)

Jem, Jel = Entrada Ss

= Fault

= Contact

+ = DRILL SITE

FIGURE- 4. - Proposed Drill Hole Location Map, Vivian Uranium Mining Co. School Section Lease, Big Indian Wash District, San Juan County, Utah.

140

Rubin
Ellis

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

JUN - 6 1955

Allen B. Sorensen, Esquire
227 North University Avenue
Provo, Utah

Re: Docket No. DMEA-3602 (Uranium)
Vivian Uranium Mining Co., Inc.
State School Land Leases Nos.
5947, 5948, and 5949
San Juan County, Utah

Dear Mr. Sorensen:

Your letter dated May 23 to this agency requested, in behalf of your clients John K. Hayes and S. G. Sargis, information as to the status of the subject application for exploration aid. Your clients hold the State of Utah mining leases identified above, and the applicant has an operating agreement with them.

In a letter dated May 12, 1955, the Administrator informed the applicant that a careful study of all information at hand concerning the subject property indicated that the probability of disclosing minable ore reserves by the proposed exploration program was not sufficiently promising to justify Government participation. Accordingly, the application was denied. The applicant was also informed that the denial was without prejudice and in the event further work on the property discloses new and more favorable evidence of ore deposition we would be pleased to consider a new application.

Sincerely yours,

C. O. Mittendorf (for)

Administrator

EWEllis/HCRubin/emd
6/2/55
Copy to: DMEA Docket
Solicitor's Docket
Adm. R. File
J. E. Crawford, USBM
T. H. Kiilsgaard, USGS
E. W. Ellis
Field Team, Reg. III (2)
J. L. Hofflund
H. C. Rubin
chron.
pending

R.C.L.

5/25/55 gla

DEPARTMENT OF
Defense Minerals
RECEIVED
MAY 25 1955

YOUNG, YOUNG & SORENSEN
ATTORNEYS AT LAW
227 NORTH UNIVERSITY AVENUE
PROVO, UTAH

DALLAS H. YOUNG
DALLAS H. YOUNG, JR.
ALLEN B. SORENSEN

TELEPHONE 271-272

3602

May 23, 1955

Defense Minerals Exploration Administration
Department of the Interior
Washington 25, D. C.

Gentlemen:

Quite some time ago Vivian Uranium Mining Co., through Mr. L. A. Smith of 426 Lowell Street, Palo Alto, California, submitted an application for a DMEA loan on the following school lands of the State of Utah:

(1) State Lease No. 5947. W½ Lots 1 and 2 of Section 2 T29S R23E SLBM. 40 acres.

(2) State Lease No. 5948. NE¼ of SE¼ of Section 3, T29S R23E, SLBM. 40 acres.

(3) State Lease No. 5949. SW¼ Section 2, T29S R23E, SLBM. 160 acres.

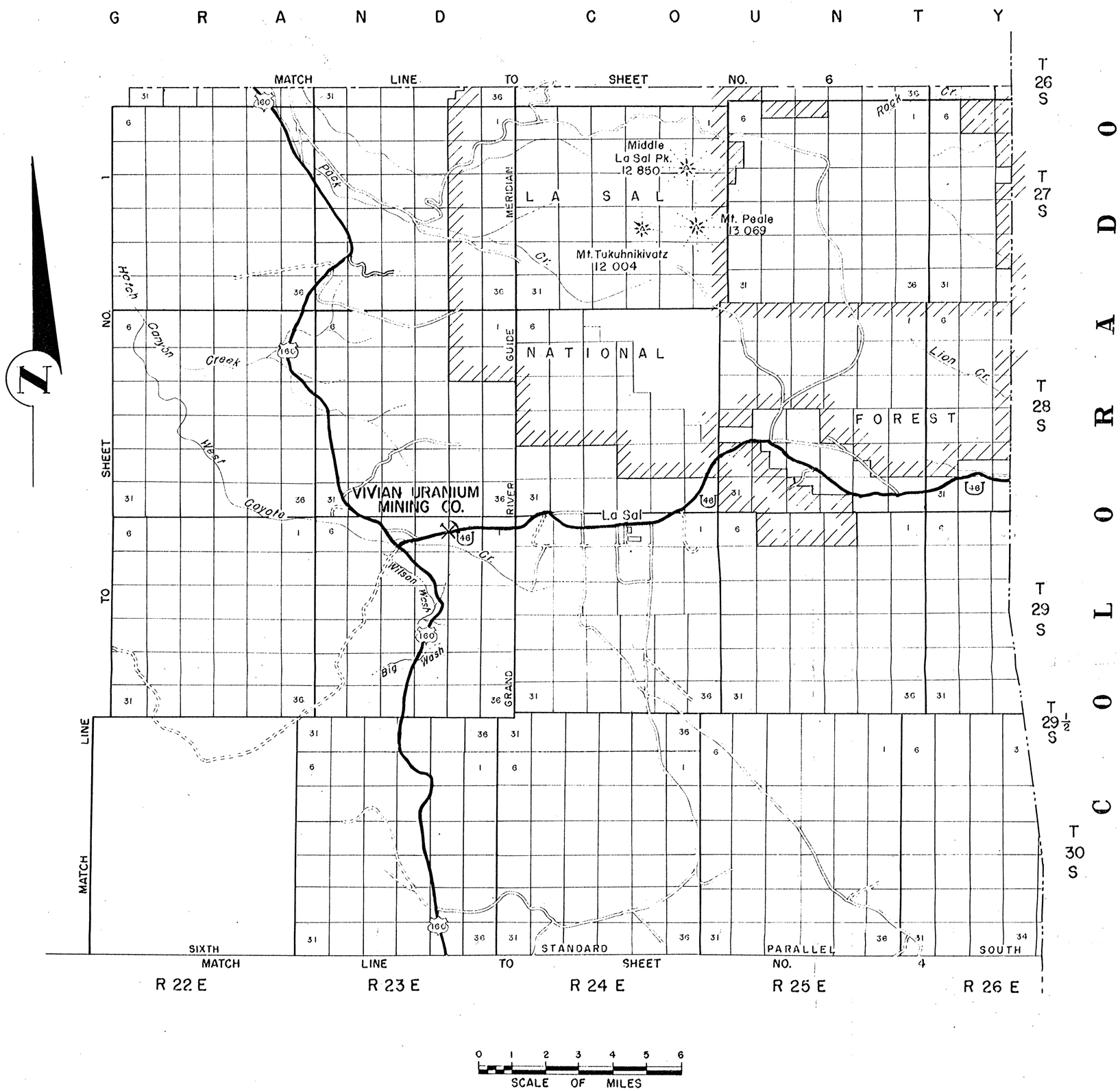
My clients, Messrs. John K. Hayes and S. G. Sargis, hold the mineral leases from the State of Utah, Vivian Uranium Mining Co. holding the property under an operating agreement with them.

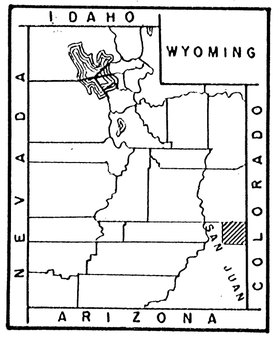
Would you be so kind as to advise me of the status of this DMEA loan application?

Yours sincerely,

Allen B. Sorensen

ABS:mh
cc: Mr. John K. Hayes
Mr. S. G. Sargis





U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

Fig. 1 DMEA Docket No. 3602

STATE : UTAH

COUNTY : SAN JUAN

Sheet 2 of 11

Location Map

ENGINEER : W. E. YOUNG	DATE : APR. 18, 1955
TRACED: APR. 1955, BY: A. P. T. S.	1900 - 324 - C
CHECKED :	